

# MARKETING AND LOGISTICS: INNOVATIONS STRATEGIES SOCIETY



***MARKETING AND LOGISTICS: INNOVATIONS,  
STRATEGIES, SOCIETY***

***Monograph***

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Monograph highlights key aspects of the transformation in marketing and logistics processes under the contemporary conditions of globalization, digitalization, and social change. The first section explores innovations and digital technologies shaping new management models. The second section focuses on the impact of geopolitical challenges, including military conflicts, on business and logistics, emphasizing the adaptation of strategies in crisis conditions. The third section examines corporate social responsibility, the role of environmental initiatives, and socially oriented marketing. The monograph provides theoretical foundations and practical recommendations for integrating economic, social, and environmental aspects into enterprise activities.

This monograph will be valuable for researchers, practitioners, and students interested in management, digital technologies, and socio-economic transformations.

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## **PREFACE**

Nazar HLYNSKYY

The complexity of transformation processes in the socioeconomic space, currently unfolding at both global and national levels, is not extraordinary or unprecedented in history. What makes the present unique is the dynamics and characteristics of these processes. The overlap in time and space of several complex phenomena creates a syncretic field of factors shaping the environment of economic entities. Strategies applied in competitive environments should be influenced by these factors and guided by marketing and logistics management principles as tools enabling maximizing benefits at both micro and macro levels.

This monograph is an attempt to analyze the complex factors that define the state of the market environment and the direction of its transformation. The structure of the monograph replicates the field of factors that, according to the author's perspective, are key determinants of the modern conditions of competition among economic entities:

- The pace of innovation across various sectors of the economy today is so rapid that we may refer to it as a continuous scientific and technological revolution. Changes driven by the innovative trajectory of economic development are not confined to technical characteristics but extend to categories of enterprise management, particularly within the marketing and logistics dimensions of management processes.
  - Geopolitical threats and direct military challenges to national economies and international trade have reached a scale that challenges the globalization of socioeconomic processes and undermines established relationships between enterprises and countries. In this context, "traditional" approaches to marketing and logistics are losing effectiveness, necessitating their transformation in response to new conditions.
  - The current extent of influence exerted by national and international businesses on the social sphere and national and global economic systems cannot be overstated. Simultaneously, the growth of public awareness and grassroots self-organization exerts pressure on enterprises from consumers and investors, particularly concerning their responsibilities to society as "corporate citizens." Naturally, the evolving perception of companies and the transformation of their role in fostering sustainable development underscore the need for a new market paradigm that integrates economic, social, and environmental dimensions in assessing corporate performance.

**Section 1.**  
**TRANSFORMATION OF MARKETING AND LOGISTICS**  
**MANAGEMENT APPROACHES THROUGH**  
**THE PRISM OF INNOVATIVE ECONOMIC DEVELOPMENT**

# **THE TRANSFORMATION OF MARKETING AND LOGISTICS: CONTENT ANALYSIS OF CONFERENCE THEMATIC AREAS, ACCENTS OF YEVHEN KRYKAVSKYY**

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The initiative to organize and host international conferences on the topic “Marketing and Logistics in the Management System”, first introduced in 1996 by Doctor of Economics, Professor Yevhen Krykavskyy, has consistently drawn increasing scientific and practical interest both in Ukraine and abroad with each subsequent iteration. The event has been held biennially without interruption, and in October 2024, its 15th edition was traditionally conducted.

From the very beginning, the event’s organization attracted a wide representation of both domestic and international scholars. The topics of scientific research presented covered the broadest spectrum of issues outlined by the conference’s title. In each iteration, the conference welcomed hundreds of researchers and practitioners conducting profound studies and implementing business projects in marketing and logistics.

Moreover, it has always included participants whose authority is undeniable, backed by relevant professional indicators, such as the number of publications in esteemed academic journals, citation indices, and, on the other hand, the market success of the business entities they represent. Therefore, the conference can be considered an event that, through retrospective content analysis of participants’ topics, enables the tracking of changes in research directions in the fields of marketing and logistics.

In 2016, during the XI conference “Marketing and Logistics in the Management System”, its founder, Professor Yevhen Krykavskyy, conducted an analysis of trends in scientific research in his publication “Dual Development of Marketing and Logistics: Imperative and Creative Attributes” (Krykavskyy, Y.V., 2016). This analysis examined the evolution of scientific thought over 20 years concerning the relationship between marketing and logistics approaches in management at both strategic and tactical levels. The author identified five stages of marketing and logistics interactions at that time: isolated, autonomous, parallel, joint, and dual.



Stage I (1996–2000): This period highlighted the lack of interest among marketers in logistics issues. The integration of marketing and logistics was perceived as a mechanical combination of inherently incompatible elements. Logistics researchers, who were fewer in number compared to marketers and whose focus was primarily on transportation and engineering processes, saw no need for marketing approaches. This was justified by the nascent stage of a market economy and the absence of a marketing environment, which complicated the application of logistics decision theories and negatively impacted the competitiveness of enterprises.

The mission of marketing was defined as ensuring the competitiveness of an enterprise through product realization, while logistics was tasked with providing mechanisms to form competitiveness. Logistics was positioned as a means to achieve marketing objectives. Marketing and logistics were considered subsystems of a hierarchical structure that needed to be integrated into a higher-order system. During the specified years, the theoretical aspects of marketing-logistics management began to be implemented in practice—logistics became an integral component, on par with marketing.

Stage II (2000–2008): This period focused on the hierarchical relationships between marketing and logistics within the management system. The studies explored the concept of mutual influence, where certain marketing decisions were adjusted based on the logistics challenges of an enterprise or its potential development and optimization. Conversely, the development strategy of the logistics system was often substantiated by the results of marketing research. However, it was emphasized that such integration processes in the practical activities of enterprises were episodic, indicating a lack of coordination between marketing and logistics structures and a failure to integrate their goals within the management system.

Stage III (2008–2012): This stage marked an increase in integration processes within enterprise operations, including at the strategic level, supporting the author's position that marketing and logistics, as areas of activity, exist on the same hierarchical level. The global economic crisis of 2008 accelerated the development of integrated marketing-logistics management systems by promoting the integration of functions, goals, and tasks to avoid unnecessary costs. These solutions aimed to eliminate goal conflicts through improved cross-functional collaboration between marketing and logistics.

Additionally, the need for interaction grew significantly due to requirements for sustainable development, national security, energy efficiency, and combating climate change. The advancement of information systems, technologies, and E-business also became a driving force for deepening the integration processes between marketing and logistics.

Stage IV (2012–2016): The author described this stage of marketing and logistics integration as “moving together.” To ensure a synergistic effect, it was emphasized that

the principles and mechanisms foundational to the following concepts must be embedded in both marketing and logistics:

- The Balanced Scorecard (BSC);
- Porter's Value Chain;
- The Strategic Management Model.

These components can ensure the universality of economic categories, alignment of core values, and consistency in decision-making not only between marketing and logistics structures but also across production and finance functions. This approach aims to eliminate conflicts between these structures, which managers often acknowledge but consider a natural phenomenon.

Stage V (2016–present): The relationship between marketing and logistics has evolved into what the author terms a “dual development” model, allowing for the mitigation of conflicts. The author draws upon the sociologist Anthony Giddens' Structuration Theory, which views duality as the interaction between structure and action. Rules and resources are considered dynamic across space and time, and their relevance to marketing and logistics competencies is established accordingly.

This stage highlights the importance and priority of human values, standardized operating procedures (SOPs), and the stakeholder concept, emphasizing the beneficial balance between material (allocative) and non-material (authoritative) resource categories.

This phased development of marketing and logistics integration enabled the author to identify significant attributes for ensuring an enterprise's competitive position, divided into imperative and creative attributes:

- Imperative Attributes: These include marketing and logistics paradigms such as strategic influence, contribution to customer value creation, non-conflicting goals and objectives, a shared mission, and behavior principles prioritizing human values.
- Creative Attributes: These involve harmonizing decisions regarding marketing and logistics distribution channels, information systems, outsourcing and insourcing, as well as standardization, individualization, or adaptation processes.

Such a systematic approach, the ability to anticipate trends, and a willingness to embrace critical perspectives on new approaches in scientific research have been consistently reflected in the conference presentations of Professor Yevhen Krykavskyy at “Marketing and Logistics in the Management System” (Krykavskyy, Y.V., 2016; Krykavskyy, Y.V., 2018; Krykavskyy, Y.V., 2020; Krykavskyy, Y.V., 2022). His reports addressed the most pressing issues, often ahead of the trends that dominate today.

In his 2018 presentation (Krykavskyy, Y.V., 2018), drawing on his extensive experience, the professor outlined key priorities for the integration of marketing and logistics in the context of the digital economy. These priorities, positioned as objective and practical, include:

1. Priority 1 – Practical examples of comprehensive implementation of Marketing 3.0 principles (commonly associated with the current Industry 4.0 era), emphasizing human and social values.

2. Priority 2 – Focused on logistics:

- Development and optimization of logistics infrastructure and sources of its financing;
- Optimization solutions in transportation logistics;
- Issues of military logistics, particularly its organizational and infrastructural support.

3. Priority 3 – Rapidly emerging and revolutionary solutions through the application of digital technologies. This priority serves as a crucial tool for implementing the first two.

At the same time, the report highlighted current challenges in applying these priorities to practice, such as the lack of transportation and warehousing infrastructure, which limits export-import potential, and the negative consequences of humanity's growing dependence on electronic devices and social networks.

The 2020 presentation (Krykavskyy, Y.V., 2020) focused on emerging trends in marketing and logistics integration during the crisis caused by pandemic restrictions. These restrictions disrupted the freedoms of the common market (movement of goods, services, people, and capital), leading to a drop in demand. However, simultaneously, they increased the demand for marketing and logistics services. This atypical trend also stemmed from advancements in the digital economy, which helped mitigate spatial and temporal constraints.

The latest report, delivered in 2022 (Krykavskyy, Y.V., 2022), addressed the urgent need for rapid economic responses during the first year of full-scale aggression, where uncertainty became the norm. The report emphasized that businesses must develop viable survival strategies. The author argued that the optimal combination of marketing and logistics, supported by digital technologies and effective crisis management tools, could radically transform expected outcomes. Adaptation with a focus on flexibility and resilience was identified as a top priority for businesses operating under war conditions.

Content analysis is one of the most widely used research methods in social sciences, allowing for systematic, objective, and quantitative analysis of textual, visual, or audio information. Its primary purpose is to identify hidden structures, content, and trends in communications, which can be useful for evaluating individual and social phenomena (Ivanov, 2010).

The method of content analysis is based on coding principles, which involve classifying the text into separate semantic units. These units may include words, phrases, thematic blocks, or other categories that align with the research objectives. According to the theoretical foundations of this method, key aspects include

systematicity and the representativeness of the sample, ensuring scientific reliability and the ability to generalize the results (Krippendorff, 2004).

In contemporary science, content analysis is used as both a quantitative and qualitative method. The quantitative approach involves counting the frequency of specific textual elements, such as keywords, themes, or categories, to identify trends and patterns (Neuendorf, 2019). Qualitative content analysis, on the other hand, focuses on semantic aspects, including the context and metaphorical meaning of the text, making this method highly flexible for research projects requiring a deep understanding of the text (Mayring, 2000).

Considering the objectives of the study (to identify trends in the thematic shifts of scientific research at the “Marketing and Logistics in Management Systems” conference), a combined content analysis method was applied.

- Stage 1: Grouping of the themes of the conference participants’ abstracts was conducted based on keywords and/or phrases. If the material pertained to the implementation or testing of scientific developments in specific sectors of the national economy, this part of the presentation was not considered. Only general terms and concepts, universally applicable regardless of the type of economic activity or geographic scope, were classified further. As a result, 57 terms were identified through the grouping of direct synonymous concepts.

- Stage 2: The grouped terms were further classified into eight pre-defined categories derived from the general review of the identified 57 terms. These categories included: environmental issues, management, marketing, logistics, global level, regional level, information support (internet marketing), and innovation.

At each stage, a group of experts was involved to verify the consistency of their opinions. For validation, the formulated positioning criteria were independently coded by two raters based on the pre-identified categories. The reliability of the raters was assessed using Cohen’s kappa. This metric indicated a high level of inter-rater reliability:  $0.67 < k < 0.90$ .

The 15th Scientific and Practical Conference “Marketing and Logistics in Management Systems,” held in 2024, aimed to discuss and evaluate the development of theory and practice in enterprise and organizational management. The conference focused on integration processes between marketing and logistics, digitalization, globalization, humanization, and other trends shaping modern society. Its goal was also to establish priorities for the development of socio-economic systems.

The declared topics of the 2024 conference encompassed a wide range of issues:

- Marketing and logistics under martial law and prospective integration processes of such an interdisciplinary approach within Industry 5.0;
- Modern solutions in supply chain management;
- Opportunities and threats posed by the digital transformation of the economy;
- Marketing and logistics education in times of crisis and uncertainty;
- Economic functioning amid globalization and geopolitical challenges;

- Advancement of the conscious promotion concept.

Naturally, the thematic focus of the conference has evolved retrospectively over the years.

Continuing the analysis of the presentations delivered by the conference's founder and organizer, Professor Yevhen Krykavskiy, a trend analysis was conducted to explore the changing priorities and the deepening of participants' research topics since the conference's inception in 1996. As previously mentioned, this analysis was based on the abstracts (keywords from titles) of papers presented at the conferences between 1996 and 2024 (see Fig. 1).

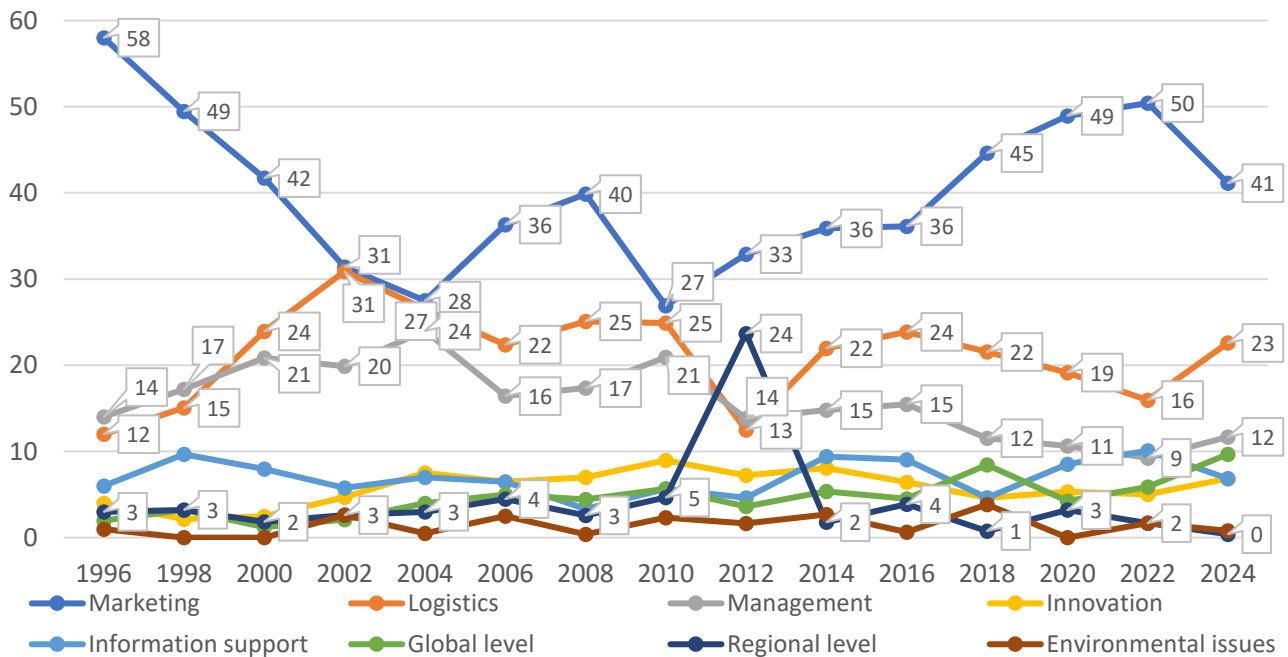


Fig. 1. Changes in Conference Topics According to Identified Generalized Concepts (1996–2024)

For a more detailed analysis, let us utilize the stages outlined earlier when examining Professor Yevhen Krykavskiy's presentations, with a particular emphasis on certain iterations.

In 1996, 58% of the presentations were dedicated to marketing-related topics. A significant factor confirming the relevance of marketing in this period is the establishment of a market economy and, as a result, the need to develop theories and practices for market relations. Predictably, this first analyzed stage also represents the peak of explicitly marketing-focused discussions.

This prevalence highlights the urgency for marketing strategies in a transitioning economic environment, where enterprises needed tools to adapt to competitive market conditions effectively. The dominance of marketing themes reflects the scientific community's response to this demand, aiming to create foundational frameworks for businesses in the nascent market economy.

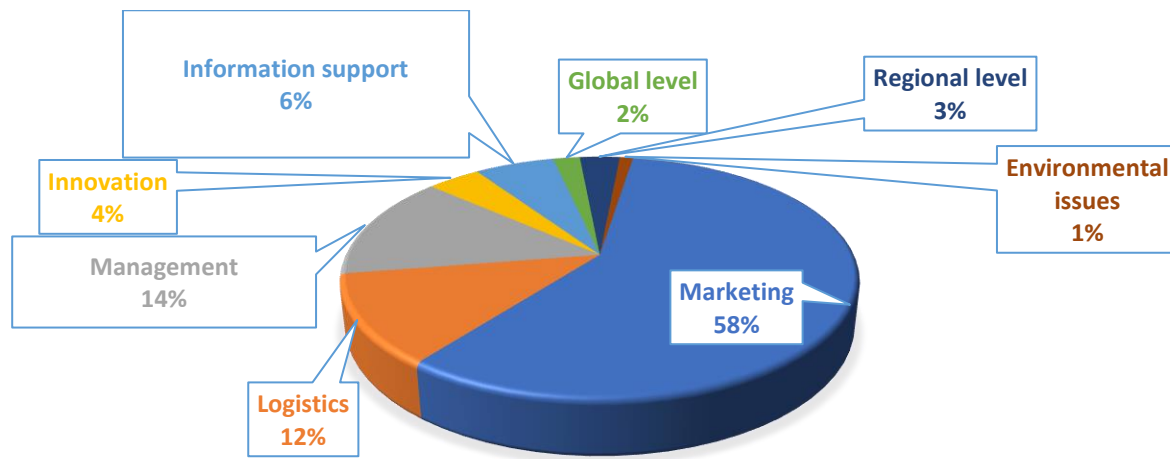


Fig. 2. Distribution of Presentation Topics According to Identified Generalized Concepts (1996)

In the academic context, the mid-1990s marked the introduction of pioneering educational programs in marketing into the curriculum. During this time, marketing captured the dominant share of attention, with 58% of presentations addressing marketing-related issues.

In contrast, logistics and management topics held relatively equal proportions, comprising 12.1% and 14% of the discussions, respectively. This indicates that while marketing dominated the scientific discourse, logistics and management were beginning to emerge as important areas of focus in the evolving market-driven economy.

Issues related to information systems and networks were just starting to gain attention, featuring in 6% of presentations. At this stage, the context of these discussions revolved around internal networks (intranet), customer database management, and conducting marketing research—reflecting the nascent stage of digital transformation in business operations.

By the year 2000, the proportion of presentations on marketing and logistics shifted to 42% and 24%, respectively, indicating the increasing interconnection between these disciplines. This shift could be interpreted as the beginning of integration processes between marketing and logistics, reflecting their growing importance as complementary components in business strategy.

Presentations focused on management also increased significantly, rising from 14% to 21%, highlighting its critical role in shaping corporate and overall strategic development. This trend was likely driven by the initial experiences of mergers and acquisitions, as well as intensified competition in various markets.

2002–2004: This period was characterized by the rapid development of logistics knowledge and practical applications both in Ukraine and internationally. The growing recognition of logistics as a key element in supply chain management contributed to its increased prominence in academic and professional discussions (Figure 3).

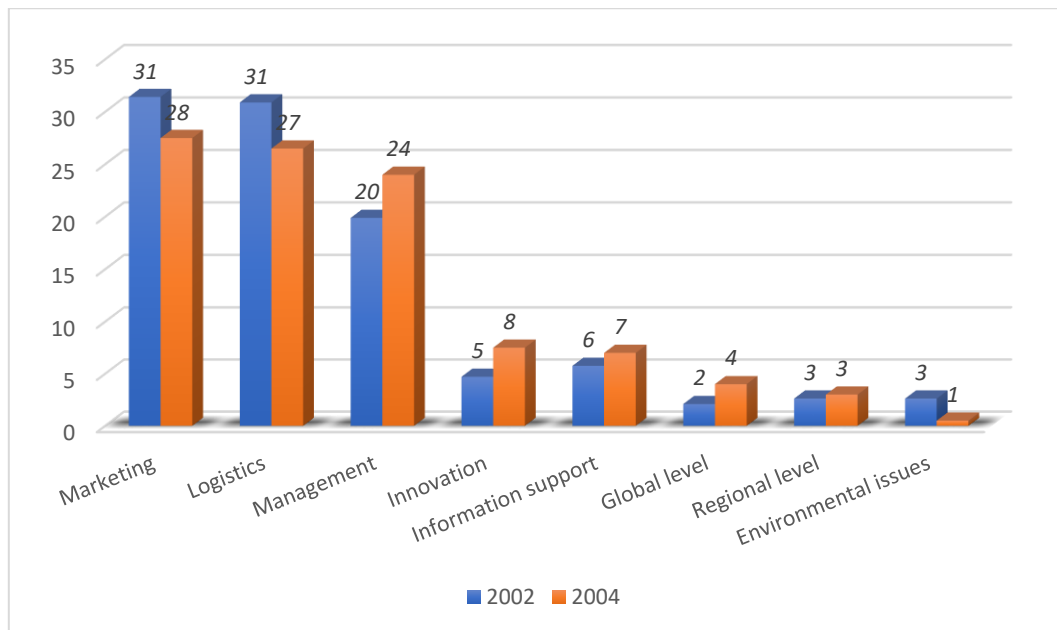


Fig. 3. Distribution of Presentation Topics According to Identified Generalized Concepts (2002-2004)

As shown in the figure, the trend of the development of the logistics services market and the accumulation of scientific research in the field of logistics is confirmed by the topics of scientific studies presented at the conference. The peak of logistics-related topics occurred during this period. At the same time, similar to the previous iterations of the conference, this period coincided with new educational innovations in the domestic higher education market, including the introduction of logistics courses and full educational programs. Notably, it was under the initiative of Yevhen Krykavskyi that Lviv Polytechnic played a key role in initiating these processes.

2008: It became evident that marketing and logistics in the management system attracted significant scientific interest due to the necessity of overcoming the effects of the global economic crisis on Ukraine's economy. The attention to global-level issues grew by 4% during this period.

2012: The ratio of marketing and logistics topics shifted to a 3:1 proportion (for every three presentations on marketing, one presentation focused on logistics), in contrast to the previous two periods, where the ratio was approximately 2:1. The increase in interest in regional-level issues can be explained by the search for solutions to overcome the global economic crisis at the regional level.

2016: The duality in the development of the relationship between marketing and logistics was particularly evident during this period. The "gap" between the percentage of marketing and logistics topics was only 12%, reflecting a more balanced integration of the two disciplines. This could also be attributed to a slight increase in the percentage of presentations dedicated to information systems (we combined the percentage of presentations on information systems and innovation topics), which grew from 10% between 1996 and 2016 to 11% in 2016. It is important to note that one of the creative



aspects of the conference was the harmonization of marketing and logistics information systems.

2020: The year 2020 was marked by shocking events for the global economy, with restrictions on the movement of goods, services, and people. This period was characterized by the large-scale and rapid development of digital platforms, both in the B2C and B2B formats. The percentage of presentations on innovative processes and information systems rose to 15%, compared to the previous analyzed period. Due to restrictions on physical contact and movement, the demand for marketing solutions increased. Notably, the nature of these solutions was often linked to internet communications and e-commerce—areas of scientific research that became especially relevant during these years and helped to form a critical informational foundation for the market practices of businesses.

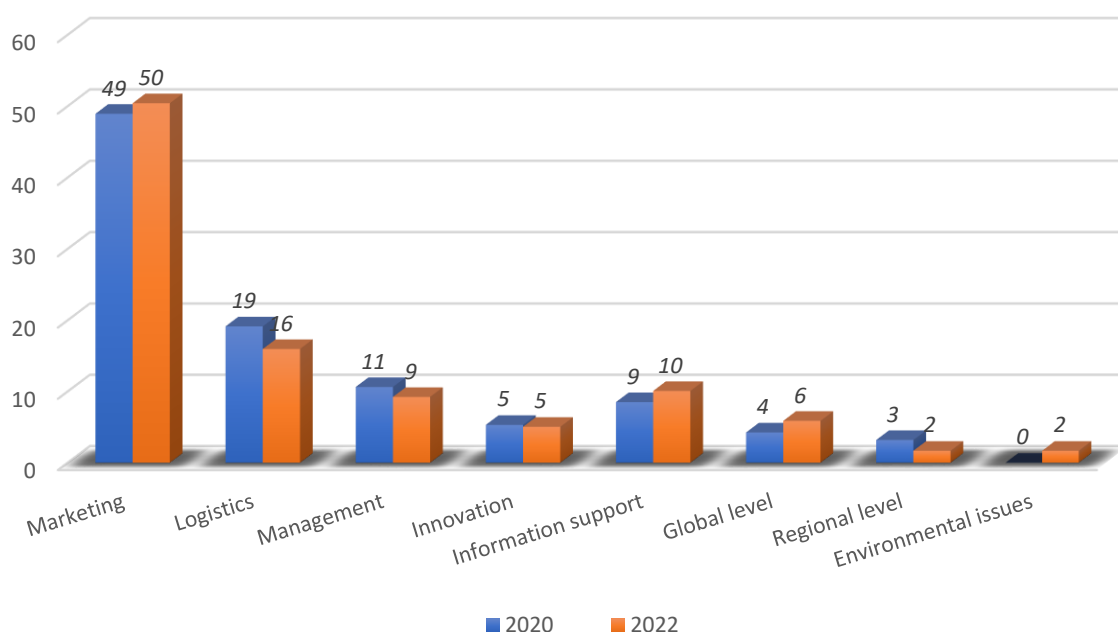


Fig. 3. Distribution of presentation topics according to identified generalizing concepts (2020-2022)

The year 2022 was generally characterized as a period of complete uncertainty, not only in Ukraine but globally. Due to the full-scale military actions in Ukraine and the declaration of martial law, most supply chains were disrupted by the blockade of seaports and the alteration of transport corridors. Logistics issues were expected to become a priority and strategic focus. However, as seen in the data, the percentage of research related to marketing topics significantly decreased to 16% compared to 50% in previous years. The initiator and organizer of the conference specifically noted in his statements the need to adjust the elasticity and individualization of solutions in the integration of marketing and logistics, which should become a trend and rule in logistics activities to enable quick and effective responses to external challenges.

Additionally, in light of these events, there was an increased interest among researchers in global issues, with 6% of the presentations addressing them.

2024 year – More than two years of martial law in Ukraine, turbulent events in the global economy, and political circles have justified the distribution of presentations at the IV International Scientific and Practical Conference “Marketing and Logistics in the Management System” (Figure 4).

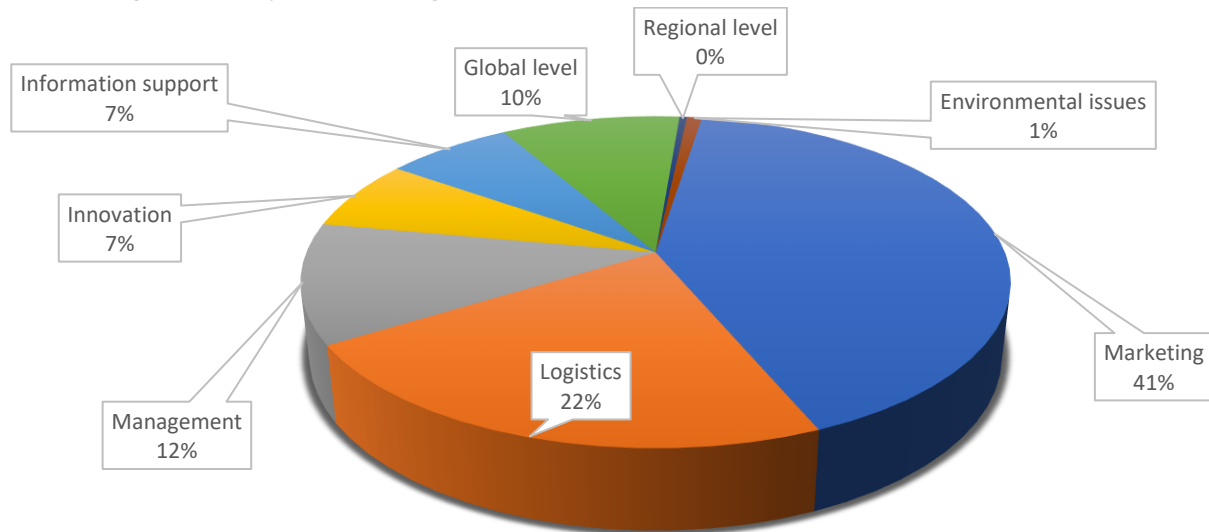


Fig. 4. Distribution of presentation topics by key words (2024)

The percentage of studies on global changes and their impact on the integration processes of marketing and logistics has significantly increased (10% compared to 6% in 2022). Research on possible ways to optimize logistics aspects in conditions of turbulence and unpredictability made up 22% (1:2 ratio compared to marketing topics).

The retrospective content analysis of the abstracts presented at the international scientific and practical conference “Marketing and Logistics in Management Systems” has shown that the transformation of participants’ scientific interests reflects the trends of the external environment and, to a large extent, mirrors them. Moreover, the inaugural speeches of Yevhen Krykavskyi captured these trends and focused attention on the most significant ones, those that had the greatest impact on the entrepreneurial environment. The most notable periods of change in the direction of scientific research, as presented at the conference, are linked to its first iteration, as well as the early 2000s and 2020s. Each of these periods marked significant acceleration in socio-economic processes at the national and international levels in specific areas relevant to the conference’s topics.

The latest iteration of the conference, along with efforts to comprehensively understand the processes and phenomena that define the crisis conditions for market participants during the active phase of war, to some extent reflects the perspectives of

scholars and practitioners towards the future — the phase of active post-war reconstruction of Ukraine.

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# **PROMOTIONAL LEADERSHIP AS A STRATEGY TO COMPETE IN THE DISTRIBUTION SECTOR. FORMS OF COMPETITION BETWEEN THE LARGEST RETAIL CHAINS ON THE FOOD MARKET IN POLAND**

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*In Memory of Professor Evgeny V. Krykavsky*

15th International Scientific Conference "Marketing and Logistics in the management System: challenges of digital globalization" organized by the Department of Marketing and Logistics of Lviv Polytechnic University on October 17-18, 2024. is dedicated to the memory of Professor Evgeny V. Krykavsky.

This article is a form of scientific memory and is an expression of gratitude to Professor E. W. Krykawski for over 25 years of cooperation with the Department of Marketing at the University of Economics in Krakow, for personal contacts, full of respect and friendship. This text serves not only as an expression of appreciation and respect for the Professor but also as a personal acknowledgment of gratitude for the numerous long-term contacts and meetings from which I have gained so much knowledge.

A special area of scientific interest for the Professor, along with his research specialization and unique scientific position in Ukraine and Poland, were the issues of the distribution system and logistics. He placed them in the right perspective of market channel management, marketing strategies and sales systems. Distribution and logistics management in various sectoral and functional configurations, determinants and indicators of the effectiveness of sales channels, marketing, the way it is organized and managed, strategies and instruments were the areas of study, research and analysis that deeply and significantly characterized the activity and scientific achievements of Professor Evgeny V. Krykavsky.

Each of the Professor's works, created during over 50 years of scientific and research activity, creatively contributed to the process of multilateral and multifaceted understanding of the reality that surrounds us – namely, the economy, market, trade and enterprise [1; 2; 3; 4; 5; 6]. These works express an original approach to both general and specific problems in business management, distribution and logistics, research methodology, as well as plan, description, analysis and evaluation of what expresses the nature of a scientific, objectified perspective on the world, the economy, the market and the company.

The aim of the article is to reflect on the strategy of competition in the FMCG sector, on the food retail market in Poland in an interesting and important perspective:

the rivalry between the two largest retail chains in Poland: Biedronka and Lidl in 2024. The analysis is presented from the perspective of the essence of the competitive strategy, namely the pursuit of market leadership. When creating the strategy of competition over 40 years ago, M. Porter focused on identifying 5 forces determining market competition: substitutes, the threat of new entries into the sector, the activities of suppliers, buyers' expectations and competition within the sector. Each of them is the subject of extensive theoretical studies, as well as numerous empirical studies and analyses. Due to the purpose of the article, we focus on the internal factors of the sector. In literature, they are presented in different perspectives and take on different names. A significant contribution in this area is made by, among others, the work of M. Porter [7], G.Yip [8], P. Drucker [9], Ph. Kotler and K.L. Keller [10], K. Ohmae [11] or W. Wrzosek [12] et al. Among the proposals for approaches to compete in the sector, there are strategies such as leader, challenger, follower, alliance strategies, niche market strategies, frontal, aggressive or selective attack, defensive, deterrent, cooperation or cooptation, maximum consumer satisfaction and others. A specific and essentially original approach was proposed by M. Porter, who distinguished three competitive strategies in the sector, namely: cost (price) leadership, focus and differentiation. Without delving into this issue further, we emphasize that the forms of "competitive struggle" in a given market sector can be reduced to creating a sales offer that will ensure the "best" value in terms of the form, timing, location of purchase and usefulness of information for the consumer. All these elements taken together are an expression of value for the consumer, shaped by marketing compositions: 4P, 5P or 4C. At the same time, these instruments cannot be treated as autonomous, but on the contrary – they must form an integrated system that influences the market and consumer behavior. However, with the increasing similarity and relatively similar characteristics of the sales offers of sellers in individual market sectors (width and depth of assortment in the store), competition strategies can be described as "promotional leadership strategies". This is a certain reference to M. Porter's cost (pricing) leadership strategy, but it expresses a contemporary view of marketing strategies of competition and the dominant role of promotion – market communication in marketing activities. It is promotion, including advertising in both communication environments: traditional and virtual (offline and online), that is the key element of the marketing concept that creates the informational components of value for the consumer: it informs about the characteristics of the product – the sales offer, price, place and conditions of purchase. What is more, offline and online marketing communication is of key importance for promoting the identity of the seller, shaping the consumer's market behavior, his needs and preferences in the short and long term, and thus determines the acceptance of the product, its price, place and conditions of purchase. Therefore, it can be assumed with some simplification that marketing communication in this approach brings together all

possible forms of competition between companies in the sector and is a synthetic expression of leadership in the sector which is based on communicating the value of the offer and its advantage over the offers of competitors.

The analysis of the role of promotion in the competition strategy in the market sector is a broad and complex issue. Due to the purpose of the article and its size limitations, we will focus on two important issues. Firstly, the synthetic characteristics of the promotion function, and secondly, the presentation of the relationship between the promotion and the price. These elements are important for the identification and description of the mechanism of competition in the market sector, and at the same time constitute the basis for the description of the title category of "promotional leadership" and its empirical analysis. A review of the literature on this issue can be reduced to such a conclusion.

Although there are differing viewpoints in the literature [10; 13; 14; 15; 16], it can be assumed that the basic functions of promotion are informative, persuasive and competitive. The distinction of these functions is based on a different emphasis in the promotional message. However, it is to some extent of a contractual nature, because these functions interpenetrate and combine with each other, jointly expressing the main objectives of the promotion of the company, the system of communication with the market.

The information function of promotion is the basis of communication between the company and the market. It is a necessary condition for the company's presence on the market, as it provides current and potential buyers with information that is to overcome the barrier of market ignorance, encourage them to make a purchase by showing specific values. This allows us to view the reception of the information function on three levels: 1) educating the buyer (current and potential), 2) shaping awareness of the brand, its importance and value, and 3) showing the advantage over competitors' offers. This aspect reveals the company's efforts – through promotion – to implement the company's leadership strategy in the sector.

The content and importance of the persuasive function are significant [17]. Promotion in its persuasive (activating, stimulating) function aims to trigger the intended actions and market behaviors of buyers, as well as to consolidate them, and thus becomes the dominant function. It is particularly important for the implementation of the company's market goals, for the formation of consumer behavior and market decisions, and for competition in the sphere of information and persuasion with competitors.

Persuasion employs two distinct groups of tools, distinguished by their different distribution of emphasis in the message [18]. The first group consists of rational and emotional arguments, while the second includes positive and negative appeals. This diversity is reflected in advertising messages and the main slogans of promotional



campaigns. Rational arguments and suggestions operate on the force of facts, mutual benefits and the field of convergent interests. On the other hand, positive ones demonstrate the interdependence of the interests of the sender of the promotion and its recipient.

The dynamism of the market and its competitive structure force companies to pursue an active promotion policy, based not only on more or less objective information, but also on selective information, profiled to shape the needs and preferences of consumers. These are important elements for achieving promotional, expressive, and focused leadership, serving as in a lens through which to view different, possible specific strategies for competition in the sector. The competitive function of promotion, which is revealed in this context, is expressed in the creation of informational instruments of competition on the market. Sometimes these arguments take the name of non-price rivalry instruments, although they often refer to a certain price level. With the current state of economic development and visible changes in the mechanism of competition, a product with an attractive – usually lower – price compared to competitors is no longer enough for market competition and customer acquisition, but a set of attractive information and strong stimuli that can shape the buyer's motivational situation and exceed the threshold of his attention and sensitivity is needed. As T. Levitt rightly points out, nowadays... *"Competition takes place not so much between what companies produce [...], but between what they add to their products in the form of packaging, services, advertising..."* [19].

The impact of the competitive promotion function is manifested on two levels. The first is related to the need for the company to ensure the attractiveness and "clout" of promotional instruments and programs. The second level comes down to the possibility of disrupting promotional campaigns carried out by the competition. The intensity of these distortions affects the way of perceiving market information and the possibility of partial or even complete elimination of the company from the set of decision-making premises of potential buyers and taking a place in their consciousness by the offer of a competing company. Taking this into account, a company cannot give up using promotion as an important instrument of competition. The marketing successes of companies and the victory in market competition result not only from having a specific product and image, and in the case of retail – the breadth and depth of the assortment, the location of outlets, but also, and probably to a large extent, from the continuous process of communication with the market, based on "attractive" information, clearly persuasive, showing the advantage over the offers of rivals and encouraging to make a purchase.

The relationship between the promotion and the price is of a special nature. On the one hand, price is an essential tool for competition in many market sectors and is at the core of Porter's cost leadership strategy. On the other hand, this conclusion seems

to be in the right way for potential buyers creating the target market. These relations are also the subject of this discussion. Through stimulating and inducing functions, promotion is to shape the needs and preferences of consumers, "help" buyers to overcome financial barriers of demand and show the company's price offer in the best possible light. The diversity of target markets and possible pricing strategies affect the selection of instruments and content of promotional messages. Different arguments must be addressed to buyers to whom the "strategy of pure quality preference" is addressed, and different to the supporters of the strategy of low prices expressed by the "price-quantity" formula. Buyers of such goods are generally more sensitive to price promotion instruments, such as discounts, price reductions and other material benefits offered by the company.

Promotion provides the market with price information in three dimensions: 1) it informs about the absolute amount of the price, 2) it informs about the direction of price change (already made or announced) and 3) it informs about the values of specific prices. It is done on the basis of a specific "valuation" of the price by informing about its characteristics, attributing to them even the most sophisticated, emotional attributes, fulfilling persuasive functions and often being an expression of social engineering manipulation [20]. The catalogue of terms available to the promotion policy to determine prices is very wide and includes, for example, terms that occur in practice: price – "promotional", "attractive", "best", "most attractive", "lower", "competitive", "orange", "wonderful", "summer", "sensational", "lowest", "lower than competitors", "affordable", "downhill", etc.

All elements of the pricing policy, along with the methods of its determination, are an integral component of the marketing communication process. Companies use them in various forms and to a different extent. At the same time, they do so continuously. Price, as a marketing instrument of the company, does not actually occur on its own, because it is inextricably linked with the product, and in the trade sector - with the breadth and depth of the assortment, and is present on the market in the minds of buyers, in their sets of selection criteria and purchase decisions - through the policy of promotion and communication with the market. It is also the subject of attention of competitors in the sector: changes in the prices of the offer are a clear indication of certain decisions concerning prices and the means of communicating them. This also expresses the essence of promotional leadership in the sector.

We start this point with a presentation of the research methodology. The empirical study is based on a detailed query of source materials and own observations of the promotional situation of the two largest food retail chains in Poland in 2024. In the course of the research, extensive factual material was collected, which included the websites of the surveyed chains, implemented promotional campaigns, press materials published on the web, opinions and analyses of food market experts in Poland, the

positions of the National Bank of Poland, decisions of the Ministry of Agriculture on the "promotional war" of both chains and their consequences, as well as other detailed materials on the analyzed issue. From the extensive research material, this study uses some of the collected data (16 of the collected source texts are presented in netography). These materials can, as expected, form the basis for further research in the future.

The starting point of the analysis is a synthetic presentation of the two largest food retail chains in Poland: Biedronka and Lidl.

Biedronka is a chain of stores selling food products, owned by Jeromino Martins Polska (JMP) [21]. It is owned by the Portuguese company Jerónimo Martins. The Biedronka chain was established in Poznań in 1995, and in 1997, as a result of the acquisition, JMP became the owner of the brand. The development of the Biedronka chain in Poland was dynamic - in 2023, the chain had 3500 stores across the country, in attractive locations. Initially, the chain adopted the formula of a classic discount store, a chain whose main advantage was price minimization: promotional slogan: "Biedronka. Low prices every day" has become an important element of the chain's market success. Since 2014, JMP has changed its development strategy – it was reflected in the departure from the discount store format in favor of the supermarket formula with a clearly expanded and in-depth assortment and price differentiation. Biedronka's share in the grocery sales market in Poland in 2022 was 28% [22]. This means that both in terms of the number of stores and the value of sales, the Biedronka chain is the leader of the retail market in the food sector in Poland. This situation was the result of a number of factors, including JMP's strategy to "invest in prices and quality of the offer". Biedronka's "internal" inflation (increase in the prices of products sold in the chain) in 2022-2023 (it was a period of marked inflation growth in Poland: 14.4% in 2022 and 11.4% - 2023) remained at a level over 2 percentage points lower than consumer inflation in Poland [22]. This allowed the chain to attract customers seeking relatively low prices during times of rising inflation (a pricing strategy creating savings opportunities for customers). The market strategy of Biedronka, according to the CFO of JMP, was based on a 'strong commitment to price competitiveness and was able to implement defensive measures to mitigate the impact of rising prices on consumers' purchasing power (...). Government actions to limit the impact of inflation were also helpful (the anti-inflation shield, which temporarily introduced a 0% VAT on certain food products), combined with an increase in the consumer base due to the refugee crisis [22].

Lidl is a German discount store chain - Lidl Stiftung & Co. KG [23]. It was founded in Germany in the early 30s of the twentieth century as a chain of food wholesalers. In 1973, the first grocery retail store under the Lidl brand was opened. At the end of the 80s. Lidl started its operations on international markets, and in 2017 it

opened its stores in the USA. In 2023, Lidl was present in 31 countries and had a network of about 11,500 discount stores.

In Poland, Lidl has been operating since 2002. Lidl has 11 distribution centers in Poland, over 900 discount stores and employs about 27 thousand employees. Lidl's share in the grocery sales market is 7.2%, which places this chain in second place – after the Biedronka chain – in Poland.

An interesting element of the characteristics of both chains is the analysis of the "consumer market share". It is based on the Listonic ranking, which is an expression of the decisions of consumers of both chains and users of the application with this name [24]. The ranking includes a group of 260,000 consumers who declared making a purchase in a selected chain at least once a month. The expression of the customers' decision is the shopping cart, containing the name of the preferred selected store and the purchases made. In the ranking in 2019-2022, the leader of the consumer ranking (from the Listonic group) was the Lidl chain, while in 2023 – the first place was taken by Biedronka. This means that in 2023 and 2024, the most frequently chosen chain (by users of the Listonic app) was Biedronka (with 37.22% of responses), followed by Lidl with a share of 35.53% [24].

On the basis of a query of empirical materials, it can be concluded that one of the main premises for such a situation on the food trade market in Poland was the promotion system of both chains and the pursuit of market leadership through extensive and often aggressive promotion. The chain's offer – related to the quality, breadth and depth of the assortment, availability conditions (time and place of sale within the meaning of the commercial marketing strategy, including merchandising) – must be communicated to consumers. Tasks of this nature are undertaken by the communication system with the market, a broad framework that includes various promotional tools and utilizes all possible channels of marketing communication. At this point, we would only like to emphasize that both chains – as well as all other chains on the Polish market (including Netto, Kaufland, Dino, Carrefour and others) – carry out promotional activities on a continuous basis. They do this through "promotional leaflets" (in the promotional leaflet, Biedronka presents a basket of 60 products with a reduced price, Lidl – 100, Netto – 85, Kaufland – about 100), special, additional discounts for mobile app owners, one-day (price) promotions, communication in social media, special promotional campaigns. Among the latter, Biedronka proposed campaigns such as "Biedronka's Anti-Inflation Shield", "Gang Mocniaków" or "Shakeomat". In turn, Lidl's campaigns included: "Happy hours" for users with the Lidl Plus app, additional discounts (price discounts) for holders of the Large Family Card, "Schools full of talents" (with the participation of Anna and Robert Lewandowski), "Cheap Saturday at Lidl" and "Free Wednesdays".

The promotional rivalry between the two chains has manifested as a fierce 'promotional war,' but it also includes all other retail chains in the Polish food market, which has been ongoing since their initial presence in Poland. Competition has become particularly intense in 2024 – sector analyses assume 4 February 2024 as its starting date.

The following analysis attempts to present the key elements of the promotional struggle of both surveyed chains and activities aimed at achieving promotional leadership in the sector. It is not a detailed description of specific actions and their elements, but focuses – in accordance with the logic of the scientific approach – on the most important issues and the formulation of conclusions with a relatively high degree of generalization. With such an approach, the following elements of the promotional competition of the surveyed chains deserve to be emphasized.

1. Date: February 4, 2024 – experts from the FMCG industry in Poland consider February 4 to be the beginning of the promotional war between the Biedronka chain and the Lidl chain. On that day, Biedronka sent a promotional text message to its customers, registered in the database, having the chain's application [25]. The text message was as follows: "the next day you can buy selected products cheaper than at Lidl". In a broader sense, the content of text messages and the content of commercial leaflets indicated "better promotions in Biedronka than in Lidl", "errors in the shopping basket in a competitive chain (in Lidl) [26]. 1. It was an element of an aggressive marketing strategy of JMP (the owner of the Biedronka chain), aimed at increasing the customer base, gaining their favor and shaping a loyal clientele who repeats purchases in the Biedronka chain. The assessment of the effectiveness of such a campaign – based on the analysis of receipts and proofs of purchase in the popular PanParagon application – was precise and positive. It is an application for viewing and analyzing commercial and promotional leaflets as well as adding and storing receipts - proofs of purchase by consumers. With the launch of the campaign, the PanParagon application has become the subject of research by food market experts. It shows that in February, the number of receipts added from purchases in the Biedronka chain increased by 1.5% (to 30.7% compared to January 2024), while – in Lidl – this share remained unchanged and amounted to approx. 15% [26].

2. Vodka was included in the promotional rivalry of both chains. At the end of February 2024, Lidl has launched a 0.5-liter bottle of vodka for PLN 9.99, and in response to this promotion, Biedronka offered a price of PLN 8.99. The average price of a 0.5-litre bottle in Poland in this period was PLN 25.30, which means that its price in Lidl stores was 39.5%, and in Biedronka – 35.5% of the average market price. It was believed to be the first such a significant price promotion of vodka in Poland. This comparison clearly shows the power of persuasion contained in this promotion – both in commercial leaflets and the real presence of "promotional" bottles of vodka in the

stores of both chains. This price was clearly lower than the price determined by the costs of production, with sales increased by the obligatory cost components resulting from the state price policy, related to VAT and excise duty. In the retail price of vodka, production and sales costs account for 8.6%, while excise duty (47.2%) and VAT (18.7%) total 2/3 of the price (69.9%). Such a low price of a bottle of vodka in both chains caused a very high interest of customers - it became the cause of large queues in stores during the 5 days of the promotion. It also resulted in restrictions on the number of bottles sold. The decrease in the chain's revenues from the sale of vodka was compensated by an increase in the number of customers in stores and an increase in the value of the shopping basket. The evaluation of this promotional campaign is complex. On the one hand, some experts assessed it highly positively: "it was a shot in 10 from a sales and marketing point of view" [27]. On the other hand, it is also important to emphasize the negative assessments, which were based on the category of dumping (sales at a price below the mandatory cost components and the final price), violation of the Act on Upbringing in Sobriety and Counteracting Alcoholism and the Act on Unfair Competition. This second argument also deserves attention. On the basis of this action, an appropriate application was submitted to the Office of Competition and Consumer Protection [28]. The case has also been referred to the prosecutor's office [29]. An additional argument of the application and complaints was the allegation related to imprecise and unreliable sales rules and the lack of appropriate, necessary information in promotional campaigns. Campaigns of this nature could violate the collective interests of consumers, defined in the European Union's internal market law, in the area of market and consumer protection, concerning the right of customers to precise commercial information [30].

3. Promotional campaigns of a price nature of both chains have become a very clear and significant tool of competition in the food trade sector in Poland. Detailed analyses show that the strategic decisions of the owner of Lidl chains, as well as JMP, the owner of the Biedronka, were aimed at maintaining its customer base and acquiring new ones based on the price-quantity strategy, and maintaining an increase in the prices of products sold below the official index of increase in the prices of goods and services, calculated by the Central Statistical Office in Poland. For example, Biedronka reported that prices in its chain in 2022-2023 increased 2 points below the official inflation rate [31]. However, in nationwide surveys, aggressive promotional campaigns of the surveyed chains did not meet with widespread approval. When asked: "Do you think the price war between Lidl and Biedronka is beneficial for Poles" – 44.2% of respondents answered "yes", while 55.8% answered "no". Experts from the National Bank of Poland referred to the price effects of the promotional campaigns of both chains [32]. The effect of aggressive promotional campaigns, based on a "price war" and the promotion of lower prices than in the competitor's network, was a situation

defined in the law (Polish and European) as an act of unfair competition [30]. An expression of such an act was, among others, the advertising slogan of Biedronka: "Since 2002, Biedronka. Low prices every day, cheaper than Lidl". This slogan was challenged by Lidl, and the court in its judgment issued an order to stop this campaign, which, according to the court, was an act of unfair market competition [33].

4. The government administration - the Ministry of Agriculture has joined the promotional price war of the chains [34]. In the opinion of the deputy minister of this ministry, the price war between Biedronka and Lidl, which has positive consequences for consumers, is taking place at the expense of food suppliers to retail stores: farmers, agricultural producers [35]. In order to have their products on store shelves in retail chains, producers must accept lower purchase prices (and thus sales), which results in decreased profitability for agricultural production and alters the economic calculation of farmers and food producers. Therefore, the Ministry of Agriculture has announced that it will intervene - appropriate legal and financial actions.

5. An important element of the promotional rivalry between Biedronka and Lidl on the Polish market was at the end of the analysis period (summer and early autumn 2024). A noticeable change in the key arguments of the campaign happened. It was a modification of the accent - a departure from promoting the low price of the sales offer (although in part limited only to "selected articles") in favor of emphasizing the "Polishness of the company". The rise of ethnocentrism in campaigns is not a new element in international marketing. Such an argument is intended to attract customers to the network by referring to patriotic attitudes that create preferences for the brand, the chain and the place of purchase [36]. In the analyzed case study, however, it is unreliable and in its own way – provocative. Both chains, as it follows from the summary characteristics of identity presented above, do not have Polish roots, they do not belong to Polish capital. The only element of their "Polishness" is that they operate on the Polish market and have a Polish statistics number, resulting from the REGON system of registering business entities.

In the summary of the presented analysis, it can be stated that the promotional campaigns of the largest retail chains in Poland operating on the food market are very intensive, complex, based on various arguments and forms. They are an expression of building a strategy of promotional leadership in the food retail sector. This strategy - promotional leadership - is reflected in all detailed strategies and forms of competition in the market sector, both those proposed by M. Porter (minimizing costs (prices), focus and diversification, as well as others, presented in the introductory part of the article. They result from the marketing strategies of operation and development adopted by both chains, from the desire to maintain or increase market share by increasing the customer base focused on the price-quantity strategy (low price strategies). Lower offer prices compared to competitors (including selected products, "promotional offer of the



day") have become the core of the promotional campaign and specific communication strategies of both chains with the market (offline and online). During the 8 months of 2024 (the period covered by the analysis), some of the campaigns used elements that expressed acts of unfair competition and violation of the consumer's fundamental rights regarding reliable commercial information.

An important conclusion from the analysis is the observation that the possibilities of price rivalry between the two chains in the FMCG sector in Poland have been exhausted – or more cautiously written – are being exhausted [37]. In the conclusion of the discussion, we emphasize that the analyzed situation is a classic problem of the market oligopoly [38; 39], a situation of fierce price competition in the initial period, which then begins to use other, non-price elements of competition, including information about the seller's country of origin (manufacturer), its positive image for customers and employees, social commitment and CSR, the values offered and the package of benefits for consumers. Such elements are significant in their own right; however, they also necessitate appropriate promotion and a reliable system of communication between the seller and the market. This is required by a properly understood promotion system, its functions, including the competitive function and a special role in shaping consumer market behavior, influencing the market strategies of competitors and other participants in the distribution channel. The promotion function defined in this way is the essence of the promotional leadership strategy, aimed at and conditioning the achievement of an appropriate market position in the sector and the implementation of the company's strategic goals.

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# **THE USE OF STP-MARKETING BY TRANSPORT AND LOGISTICS COMPANIES AS A WAY TO INCREASE COMPETITIVENESS**

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STP marketing is one of the effective approaches to the development of a company's marketing strategy, however, transport and logistics companies often do not use this approach to its full extent, which limits their ability to compete. One of the problems associated with the incomplete use of STP marketing in logistics companies is insufficient market analytics. Many companies do not carry out a detailed analysis of their target audience and do not define a clear strategy for their selection, which can lead to inconsistent direction of marketing efforts, inefficiency of advertising campaigns, inconsistency of the company's positioning in the market with its real advantages and capabilities, etc. In the conditions of the development of digital technologies and changes in consumer attitudes, transport and logistics companies must review their strategies and move to more effective marketing methods.

Theoretical provisions and practical aspects of the use of STP-marketing have been studied and are still being studied by scientists from all over the world (F. Kotler, G. Armstrong, M. Thomas, G. George, S.D. Hunt, D.B. Arnett, M. Lynn) [1-4]; moreover, some scientists (ST. Djoko Santosa, M.A. Camilleri, M. Matviyev, S.V. Tkachuk, S.A. Stahurska, V.O. Stahurskyi, O.F. Myhal, O. Golovan, O. Oliynyk, V.P. Kolesnikov) suggest consideration of a strategy with adaptation to different industries (knowledge market, retail, food industry, sports and health services, tourism, etc.) [5-11]. However, the use of the methods of this approach specifically in the transport industry has not yet been studied in sufficient detail, and therefore further research on the chosen topic makes sense.

The purpose of the presented work is to prove the possibility and outline the features of using STP-marketing in transport and logistics companies. For the most complete disclosure of the set goal in the presented work, it is necessary to investigate the process of segmentation of the market of transport and logistics companies according to various criteria and evaluation of target segments, as well as to determine the peculiarities of establishing the positioning of such a company on the market. It will be appropriate to consider together with this the properties of other elements of

marketing strategies related to this approach, the real experience of using STP-marketing by enterprises in this field, as well as the advantages and disadvantages of using STP-marketing for such organizations.

The research was conducted on the basis of the study of theoretical approaches to STP-marketing, as well as practical aspects of using STP-marketing in transport and logistics companies.

The concept of STP-marketing includes such components as market segmentation, selection of the target audience (targeting) and product positioning. In a more detailed understanding, this approach assumes that each market consists of different segments from which the organization must choose on which it will focus its marketing efforts. At the last stage, the company must determine how exactly it will position its product or service in the selected market segments.

For a logistics company this process will have certain features, which are proposed to be considered in more detail.

Segmentation is the process of dividing the market into several groups with similar characteristics and needs. Market segmentation helps to more deeply study and analyze the characteristics of each of the groups of the target audience, and thanks to this, to choose the right communication channels, develop more relevant offers, etc. For correct implementation, before starting segmentation, it is advisable to conduct a market analysis (study of consumers, their behavior, needs and desires; direct and indirect competitors and their marketing strategies; trends as news in the industry, forecasting changes, etc.).

Segmentation of clientele for a transport or logistics company can be done based on various criteria, for example, such as:

- type of cargo (for example, urgent delivery cargo, bulky cargo, dangerous cargo, etc.);
- volume of transportation (division into customers carrying out transportation in large, medium and small volumes);
- geography (division by regions, countries or continents to which clients carry out transportation);
- frequency of service use (clients can be divided into permanent, temporary or one-time clients);
- sphere of activity (clients can be divided by industries, for example, medical, textile, automobile, etc.);
- service level (classification of customers by the level of required service, for example, express delivery, warehouse storage, customs clearance, etc.);
- type of transport that will be used for transportation (car, sea, air, railway, etc.);
- type of clientele (B2B, B2C or B2G market).

Targeting for a company means defining a specific audience for its services. After identifying different market segments, the company can use criteria such as:

- market size (the company must assess the potential sales volume and possible income that each of the segments can provide, choosing the one where the company can achieve significant sales and profit);
- level of competition (if the segment is already saturated with competitors, it may be difficult for the company to occupy its niche in the market. Instead, choosing a less competitive segment may allow the company to take its position and develop faster);
- the possibility of growth and development in each of the segments (the company must analyze market trends, demand for products and services, as well as potential opportunities for expansion into new markets or the introduction of new products/services);
- specific needs and requirements (the company must be sure that it will be able to satisfy the needs and requests of its customers in this or that selected segment).

Kotler was the first who pointed out that marketing strategies can be divided into three types thanks to targeting, namely [1]:

1) undifferentiated marketing – this approach assumes that the company tries to satisfy the needs of a wide audience without segmentation. In this case, the logistics company can offer universal services that are suitable for different types of customers;

2) differentiated marketing – in this case, the company develops separate marketing strategies for several market segments. For example, may separately offer services for large industrial customers, small businesses, for private individuals who need to move, etc.;

3) focused marketing (or niche marketing). For a transport or logistics company, this may mean specializing in certain industries, such as pharmaceuticals, food or dangerous goods. The company can develop unique services that meet the specifics of the chosen segment, for example, the fulfillment of special conditions of transportation, compliance with safety standards or speed of delivery.

In turn, Wirtz & Lovelock emphasize that customer targeting for service marketing can be divided into the following four strategies [12]:

1. Oriented to the market. The strategy involves targeting a wide range of customers within a certain market, for example, offering standard services for different industries such as industry, trade, agriculture, etc. A company may use general advertising campaigns and materials based on the needs of customers in the delivery of goods, but without in-depth analysis of the specific needs of each industry;

2. Oriented to services. In this case, the company focuses on the specific types of services it offers, such as express delivery, transportation of dangerous goods or logistics planning. It can be interested in the specific needs of clients and customize its services to them;

3. Fully focused. This strategy involves deep segmentation of the market with a focus on a narrow circle of customers or a specific niche;

4. Not focused. In this strategy, the company does not focus on any specific group of customers or services, offering a wide range of services for different markets and not taking into account the specifics of different cargoes or customer needs.

The next step is to build a positioning. Positioning can be seen as the way in which a company influences the perception of the company or product by the target audience in order to differentiate itself from competitors, gain loyalty and attract the attention of consumers. If the positioning is absent or not clear enough, there is a high probability that consumers will simply ignore the product or company. If positioning is not consciously planned, then it can arise independently, spontaneously, which can lead to undesirable consequences.

To create effective positioning, a number of aspects must be considered:

- it is necessary to clearly define for whom the product or service is intended (i.e. the target audience), what needs they satisfy and what value they provide to consumers;
- it is necessary to determine what makes a product or service unique and different from competitors, i.e. what features or advantages can attract the attention of consumers;
- it is necessary to analyze competitors and determine how the product or service differs from their offers, i.e. how positioning can help stand out from the competition;
- positioning should be simple, concise and easy to remember for the target audience. Each element of the marketing mix must support the chosen positioning;
- it is important to competently convey positioning through all communication channels so that consumers can understand and appreciate it.

Positioning for companies in the field under consideration can be based on the following aspects:

a) a reliable partner (position company as a reliable partner that ensures safe and fast delivery of goods – emphasize experience in the market, a guarantee of quick resolution of any problem situations, post positive customer reviews, etc.);

b) efficiency and professionalism (emphasize attention on its technical base (modern equipment and advanced technologies), qualified staff, own transport fleet, etc.);

c) individual approach (emphasizing the fact that the company always takes into account the needs and requirements of each client individually, offering individual solutions);

d) innovative solutions (to position oneself as a leader in implementing the latest technologies and innovative solutions in the field of transport and logistics);

e) global coverage (underline global network, the presence of partners and/or representative offices in different countries, the possibility of delivery to different parts of the world, etc.).

It is important to remember that positioning should be built on the real competitive advantages of the company and meet the needs and expectations of customers. In addition, there is a constant improvement of defined competitive advantages, because the market is constantly changing, and what is successful today may lose its relevance the next day. Therefore, it is important to regularly conduct research to identify new trends and adapt strategy according to changes.

The scheme of building STP-marketing for a transport-logistics company in its general form can be shown in Figure 1.

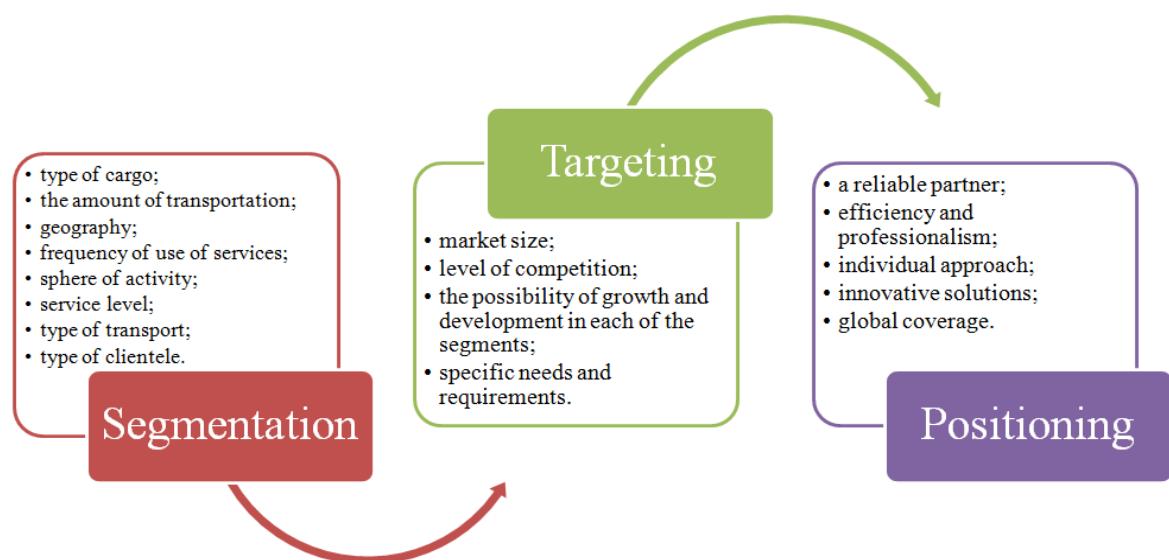


Fig. 1. Scheme of building STP-marketing for a transport and logistics company

*Source: compiled by the authors.*

Considering the fact that customers, partners and employees always compare the organization with competitors – both direct and indirect, it is appropriate to also pay attention to such an important concept as unique selling proposition (USP). It will help to successfully compete in the eyes of the target audience, as well as distance yourself from competitors and win not only, for example, due to prices.

USP can be defined as a motive that is guided by a customer when choosing a company, and also as something that distinguishes a company from other companies in the market and is part of its competitive advantage.

A unique selling proposition must answer two questions:

1. Why should a potential customer buy this particular product or service?
2. Why should a potential client choose this particular organization and not competitors?



A correctly formulated unique selling proposition should meet the following requirements [13]:

- is formulated clearly, precisely, unambiguously and clearly, often contains numerical data;
- must bring benefits to the consumer;
- outlines the differences from other sellers or service providers, which allows the company to protect itself from competitors. In other words, other enterprises cannot claim about themselves what a particular company claims in its USP;
- must meet the client's needs and solve his problems.

At the same time, it is necessary to distinguish between the concepts of positioning and USP. Positioning answers the questions: "Who is this company?", "Who are its products and services for?", "Why do you need its products and what are their properties?", and USP follows from positioning and answers the question "Why should the customer buy this, and why exactly in this organization?"

USP of a transport and logistics company can be based on the following aspects:

- transparent price (the company guarantees clear and understandable pricing without hidden fees. Clients receive a clear bill at the beginning of cooperation, which allows to plan a budget without unforeseen costs);
- competitive prices (for example, a guarantee of the lowest prices for international transportation in a certain region due to direct agreements with carriers);
- round-the-clock support (the support team works 24/7 so that customers can always get the help they need, regardless of the time of day. They can ask any questions and get a prompt response without delay);
- cargo tracking (the company provides an opportunity to track the location of the cargo in real time, for example, through a mobile application using advanced tracking technologies, including GPS chips and video surveillance);
- environmental friendliness (use of environmentally friendly technologies or programs to reduce carbon emissions);
- multi-level insurance (insurance options that provide an additional level of security for valuable cargo);
- specialization in certain types of goods (for example, dangerous or temperature goods);
- speed and reliability (guarantee of delivery of cargo within a clearly defined period of time);
- easy registration (simplified order registration process with a minimum of documents and preparation time), etc.

For example, it will be appropriate to consider the main characteristics of potential target audiences from the point of view of geographic segmentation, which reflect their possible values and wishes and which, in turn, will affect the construction of USP and

positioning of the company. It is proposed to highlight and compare the target audiences of the European region and the Asian region (Table 1).

Table 1

Characteristics of the target audience of the markets of  
the European and Asian regions

Characteristics	European region	Asian region
Geography and transport infrastructure	Europe has a more developed and dense transport network, including a network of road, rail and air routes. Most often, rail and road transport are used for cargo transportation within the region.	Asia is a larger and more diverse region that requires more complex logistics to move goods across various geographic barriers such as mountains, oceans and deserts. Sea and air transport may prevail due to long distances between countries.
Trade flows	In Europe, transport of goods between countries is more developed due to the organization of the European Union. The European clientele can be oriented to the domestic market or trade with other European countries.	International trade is actively conducted in Asia, taking into account different countries and their economic characteristics. The needs of the Asian clientele may be more related to trade within the region or to exports to other parts of the world.
Cultural differences and regulation	In Europe, there is a much greater emphasis on compliance with environmental norms and safety standards. There are stricter regulations and requirements, as well as high standards, which often require faster and more accurate logistics processing.	In Asia, adaptation to a variety of trading partners and cultures plays a major role. At the same time, different cultural and economic conditions can lead to different customer needs.
The most likely needs and interests of potential customers	Greater emphasis can be placed on speed and efficiency. Stricter adherence to schedules and deadlines is typical. Customers prefer transparent tracking systems, fast service and reliable transport.	Preserving long-term partnerships can be a priority. Greater flexibility in planning and an emphasis on interaction, understanding and trust between parties may also be envisaged.
Communications	In Europe, online channels are more commonly used to communicate with business partners.	In Asia, face-to-face contacts may prevail, and phone calls are less common.

*Source: compiled by the authors.*

If, for another example, we consider target audiences by type of business, the following important differences in the characteristics of each of them can be noted here:

1. Large corporations (B2B) are business clients who need regular logistics services to transport large volumes of goods to different parts of the world. Their needs include not only fast delivery, but also warehouse inventory management, optimization of logistics processes, and more. The main requirements of such customers are usually to optimize the supply chain, reduce costs and increase the efficiency of warehouse and

transport operations. In case of successful cooperation, such clients are most likely to become permanent partners of the company.

2. Small businesses (B2B) – small businesses or startups that need effective logistics solutions to optimize their supplies, sales and warehouse management. As a rule, they have a limited budget and small logistics needs. Their requirements are often simpler and their cargo volumes smaller. For such customers, the speed of delivery, reliability and efficiency of logistics services can be critically important.

3. Individual customers (B2C) are natural persons who are looking for reliable services for the delivery of goods. Their needs can range from fast delivery of online orders to the transportation of special cargo, and they often use such services only once. For this category of customers, the availability of prices, the convenience of organizing delivery and the possibility of tracking cargo in real time are important factors.

4. Governmental structures (B2G sector) – clients with high requirements. For them, an individual approach similar to that used for VIP customers is required. Purchases of transport services are carried out through tender procedures and competitions, where it is important to take into account all the requirements and conditions determined by government bodies. Government structures often give preference to suppliers who can guarantee the high quality of their services and compliance with all standards, so it is necessary to prepare documentation confirming the qualifications of the company.

The following aspects can be considered separately, which, taking into account today's trends, will affect the success of USP and the entire STP-marketing complex in general, regardless of the selected segment or target audience [14]:

1) the use of artificial intelligence and data analytics – the company's implementation of advanced artificial intelligence algorithms for demand forecasting, route optimization and inventory management, as well as for order processing, inventory management, accounting, etc.;

2) compliance with the principles of environmental responsibility – the company is expected to apply environmentally friendly technologies, such as the use of electric cars and solar panels in its warehouses to reduce CO<sub>2</sub> emissions and rational energy consumption;

3) the presence of a global multimodal logistics hub – the company must have a comprehensive network of logistics solutions that covers various types of transport, including air, sea and land transport. The enterprise is located in a strategic location, which allows it to become a starting point for international cargoes and ensure their efficient and fast delivery to any point in the world;

4) intermodal solutions for e-commerce, including packaging, cargo consolidation, express delivery and reverse logistics services to meet the needs of today's electronic markets.

In addition, attention should be paid to the relationship between STP-marketing and the 4P complex of the enterprise, since each element of the marketing complex should support the selected segments and positioning of the company, and not go against them. If the elements of the 4P complex do not support the selected segments and the company's positioning strategy, the following negative consequences may occur [15, 16]:

- if the product or service does not meet the needs and preferences of the selected segment, the company may lose potential customers who are looking for something specific;
- a combination of 4P elements that are not consistent with the positioning may lead to the fact that the company will not be able to compete with other players in the market who better communicate with the target audience;
- inconsistency between 4P elements can create confusion among consumers and negatively affect brand perception;
- if the price does not correspond to the perception of the value of the product/service or if the distribution channel does not correspond to the ways in which the target audience usually buys products/services, this may lead to a decrease in sales;
- if customers feel that the company does not take into account their needs, this can lead to a decrease in loyalty and an increase in the chances of switching to competitors.

For example, if a logistics company has chosen the B2B sector as its target segment, then it is appropriate for it to promote its services by conducting advertising events in places such as business centers, exhibitions and conferences, as well as using such tools as email mailings, offering services on transport portals, contextual advertising, search promotion of the site, etc. At the same time, television and print advertising, information placement on billboards are ineffective. In this way the company will lose potential consumers.

In more detail, this relationship between the stages of targeting and positioning with each element can be considered in the table 2.

Table 2

Relationship between the stages of targeting and positioning with each element of the 4P complex

Element	Product	Price	Place	Promotion
Targeting	Determining specific market segments allows the company to develop services that meet the needs and desires of exactly the target	Establishing a pricing policy that corresponds to the solvency and price expectations of the selected	Selection of distribution channels and geography of service. It is important that the services are available exactly in those places where the	Selection of communication channels and methods that best reach the chosen target audience and that will "speak" in the language of their

	consumer segments.	market segment.	target consumers are.	needs and problems.
Positioning	Building a positioning strategy for services that differentiates them from competitors in the minds of consumers.	Choosing a pricing strategy helps determine how the consumer will perceive the brand.	A company can position itself as an expert in certain geographic areas or types of transportation.	Creating messages that emphasize the unique features of the product and benefits specifically for the target audience.

*Source: compiled by the authors using [15, 16].*

If we consider the more modern concept of the marketing mix "7P", in which, in addition to the elements already considered, people, processes and material evidence are added, then their content can be defined as follows:

- people: in the modern business environment the role of people, their qualifications, experience, competences, behavior and attitude becomes decisive in the formation of trust in the company. Above all, staff with a high level of expertise in their field can give customers confidence that their needs will be met at the highest level. In particular, in segments where the availability of expert knowledge is critical, such as, for example, the organization of transportation of dangerous goods, the experience and knowledge of employees are extremely important. The attitude of employees towards customers also plays a key role: politeness, willingness to help and professionalism can significantly increase the overall evaluation of the service;

- processes: they include all stages of service provision, from receiving an order to delivering goods to the final destination. Defining customer service processes (transportation organization, order processing, cargo tracking, etc.) depends on understanding their needs and requirements based on STP;

- physical evidence: infrastructure, equipment, customer reviews, certificates and a website with an intuitive interface and up-to-date information form a general impression of the company and can significantly influence customer perception. It is important that these elements correspond to the chosen segment of the target audience – for example, in industries with high safety standards, certificates confirming compliance with standards can be a critical argument in favor of choosing a particular company. In addition, all materials that support the company's image (brochures, transport design, etc.) must correspond to the general positioning of the enterprise and be consistent with its strategy, which creates a unified visual and communication literacy and increases brand trust.

For better efficiency it is suggested, as in any approach, to receive "feedback" from the established STP system. By regularly reviewing the results of campaigns, an organization will be able to identify which approaches are working and which need correction. It is important to use analytical tools that allow the company to quickly

obtain data on the effectiveness of various campaigns, consumer behavior and general market trends. Thanks to this process, the company can quickly adapt its strategies, responding to changes in demand, customer preferences or new trends in the industry, which will allow it to remain competitive and ensure a high level of customer satisfaction. And by analyzing successful and unsuccessful campaigns, the organization can accumulate knowledge to develop more effective strategies in the future.

Of course, like any approach, STP-marketing has its advantages and disadvantages, which are shown in fig. 2.

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• The ability to accurately define the target audience and direct all marketing efforts to it.</li> <li>• Reduced costs for marketing campaigns, as resources are directed to specific target groups.</li> <li>• Increasing the effectiveness of marketing activities due to a better understanding of consumer needs and requirements.</li> <li>• Differentiation of the product among competitors due to clearly defined positioning.</li> </ul>	<ul style="list-style-type: none"> <li>• The difficulty of defining and dividing target audiences, especially in the conditions of the global market.</li> <li>• The need for additional costs for market research and analysis of consumer behavior for the effective implementation of the strategy.</li> <li>• The risk of losing part of the market due to the possible loss of other segments when focusing on a specific segment.</li> <li>• The market and consumer preferences are constantly changing, which requires regular monitoring and corrections.</li> </ul>

Fig. 2. Advantages and disadvantages of STP marketing

*Source: compiled by the authors.*

Despite the presented drawbacks, the considered approach is very popular in the world. For clarity, it is suggested to analyze the use of STP marketing by global transport and logistics companies in the table 3.

Table 3

Comparison of approaches to STP marketing of some international transport and logistics companies

Company	Segmentation	Target market	Positioning
CEVA Logistics	Large and medium-size national and multinational companies across the globe.	Automotive, Consumer & Retail, Energy, Industrial, Technology.	It stands for Operational Excellence
Kuehne Nagel	Business which requires transportation and logistics services.	Businesses which require sea freight, airfreight logistics, contract logistics, road & rail logistics services	Leading global provider of innovative and fully integrated supply chain solutions

DHL	Global, regional & local customers who need express logistics	Price conscious customers who require a consistent level of service; Customers driven primarily by reliable delivery	Proactive Solutions; Personal Commitment
DB Schenker	Businesses with transportation requirement	Automotive, aeroparts, consumer, high-tech and fashion & retail industries	Global logistics expertise with a strong rail foundation
China Ocean Shipping Company (COSCO)	Business which requires transportation and logistics services	Businesses which requires container shipping, dry bulk shipping, 3 PL, freight logistics services	Most competitive logistics service provider in China

*Source: compiled by the authors using [17-21].*

However, it can be said that the number of companies using STP marketing in this industry is still quite small. Among the most likely reasons for the current situation, the following can be singled out:

- lack of sufficient resources for the implementation of STP-marketing – since this approach requires significant efforts and funds to carry out market analysis, determine the target audience and develop an appropriate marketing strategy, some enterprises, especially small ones with a limited budget, may consider these costs impractical for themselves;

- difficulties with access to relevant data (for example, the lack of detailed information about the specifics of customers can make segmentation difficult or even lead it in the wrong direction);

- some companies do not have sufficient knowledge to implement innovative strategies, so they may prefer traditional marketing methods – the latter, although less effective in the conditions of a rapidly changing market, may seem safer;

- many companies are afraid to experiment, so as not to lose existing customers, and adhere to proven methods, because they already bring some success;

- some companies may not have a clear understanding of their target audience, so they cannot effectively use STP marketing to tailor offers to their customers' needs. This also includes problems with identifying real competitive advantages, which leads to misunderstanding of client expectations.

In order to solve the specified problems, transport and logistics companies are recommended to:

- 1) realize the importance of implementing and developing modern marketing strategies (includes understanding how modern marketing strategies can help the company achieve its goals, studying and analyzing modern trends in the field of marketing, as well as evaluating which technologies and tools can be useful for the company);

2) conduct a market analysis (includes studying audience, competitors (identifying their strengths and weaknesses, studying their marketing approaches, prices, distribution and communication strategies), analyzing trends and changes in the market, determining consumer needs and expectations);

3) allocate sufficient resources for marketing (implies a preliminary assessment of how much money the company is ready to invest in marketing, based on financial indicators, business goals and market research; establishing a budget for marketing and its optimization, as well as constant monitoring and analysis of the effectiveness of spending for marketing);

4) provide internal support for the implementation of new marketing practices (suggests the creation of a team of marketing specialists in the company, the implementation of training and development systems for existing employees so that they can adapt to new technologies and strategies, joint work with other departments (sales, customer service, product development, etc.) to ensure a unified vision and consistency of actions in implementing the strategy, as well as support and accumulation of knowledge and experience in the field of marketing).

**Conclusions.** According to the results of the research, it was determined that the considered approach is an effective way to increase the effectiveness of marketing efforts of transport and logistics organizations and achieve success in the competitive market. This is achieved due to the fact that STP marketing, when done correctly, helps to better analyze and understand target audience, their needs and requirements, and thus develop effective marketing strategies and product and/or service offers. Therefore, the transformation of traditional approaches to marketing through STP, although a complex and expensive process that requires a lot of effort, at the same time it provides transport and logistics companies with the opportunity not only to compete properly, but also to develop successfully in both domestic and international markets. Investing in this tool is an important step in building a long-term development strategy and ensuring sustainable growth.

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## **KEY TOOLS OF MARKETING PROCESSES DIGITALIZATION**

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Digitalization in the context of marketing refers to the integration of digital technologies into marketing processes and strategies. It involves transforming traditional marketing methods to leverage digital channels and tools, enabling businesses to connect with consumers more effectively and efficiently. Key aspects of digitalization in marketing include data-driven decision making, multi-channel engagement, automation of efficiency, personalization, real-time interaction, influencer collaboration, analytics and performance measurement.

Studying the digitalization of marketing processes, particularly in relation to internet sales and influencer marketing, is significant for multiply reasons: understanding market dynamics, consumer engagement, impact of technology, economic implications, strategic decision-making, emergence of influencer marketing, future trends and global perspectives.

The goals of this monograph are to reveal and describe groups of reasons that are fundamental in development of digital processes and implementation of this way into real business processes.

The transformation of marketing processes into the digital realm is an extremely dynamic phenomenon and is not yet well understood. There are several main reasons for this, including the constant improvement of current approaches and the invention of new ones, the use of artificial intelligence, market dynamics and company operations, etc.

Despite all this, the foundation of digitalization is unchanged, and scholars have already described the evolution of marketing, including the practices of transition to digital [1]. Digital strategies have remained unchanged since their inception, as well described in the book by Chaffey and Ellis-Chadwick [2].

A special role should be given to social media, although their meaning and tools have long since changed in the direction of greater influence, the idea of attracting customers through them is the same [3, 4].

Special attention should be paid to branding and multichannel marketing, considering insights as brands will have their own “I”, communities and interactions [5, 6].

This research employs a mixed-methods approach to explore the digitalization of marketing processes in the e-commerce sector, specifically focusing on internet sales and influencer marketing.

The first phase involved a comprehensive review of existing literature to establish a theoretical foundation for digital marketing strategies in e-commerce. This review included an analysis of successful digital marketing practices across various industries to identify best practices applicable to online retail. Data collection consisted of both primary and secondary sources, including marketing plans, digital campaigns, and performance metrics from diverse e-commerce businesses, which provided insights into how digital marketing activities impact sales performance and customer engagement.

To gain practical insights, several case studies of e-commerce companies that have effectively integrated digital marketing strategies were analyzed. These case studies examined the evolution of marketing approaches over time and their outcomes, particularly regarding sales growth and brand loyalty. Statistical methods were employed to evaluate the effectiveness of these digital strategies.

The research also focused on the role of influencer marketing within the digital marketing landscape. This included analyzing how influencer partnerships can enhance brand visibility, drive online sales, and influence consumer behavior, as well as understanding the effectiveness of different types of influencers in reaching target audiences.

Additionally, a survey was conducted to assess the awareness and practices of digital marketing among consumers and businesses in the e-commerce space. The study included participants from various e-commerce platforms, focusing on their engagement with digital marketing tools and influencer content. Data were collected through a structured questionnaire, ensuring consistency in questions and conditions, which facilitated an accurate assessment of digital marketing effectiveness.

By integrating these methodologies, the research aims to provide a comprehensive understanding of how digitalization transforms marketing processes in e-commerce, particularly in the contexts of internet sales and influencer marketing.

Digitalization refers to the integration of digital technologies into all areas of business, society, and everyday life, fundamentally transforming how organizations operate and deliver value to customers, as well as how individuals interact with technology. It involves the use of digital tools, processes, and data to create efficiencies, improve decision-making, and enable innovation.

In a business context, digitalization typically includes adopting digital systems to replace traditional analog processes, such as moving from paper-based recordkeeping to electronic systems, automating manual workflows, and leveraging technologies like cloud computing, artificial intelligence (AI), the Internet of Things (IoT), and data analytics.

Digitalization goes beyond simple digitization (which is the conversion of information into a digital format) by changing business models, improving customer experiences, and enhancing operational agility. It enables the creation of new value propositions, often through the development of new digital products and services or the transformation of existing ones.

Key components of digitalization can include:

1. Automation: Replacing manual tasks with automated systems to improve efficiency and accuracy.
2. Data Integration: Connecting and analyzing data from various sources to gain insights and drive decisions.
3. Cloud Computing: Storing and accessing data and applications over the internet rather than relying on local servers.
4. Digital Communication: Using digital platforms (e.g., social media, email, websites, apps) for interaction with customers, employees, and stakeholders.
5. Connectivity: Leveraging networks like IoT to enable real-time communication and control between devices, machines, and systems.

Overall, digitalization is a broad, ongoing process that is reshaping industries, economies, and societies by leveraging technology to create new efficiencies, improve customer experiences, and drive innovation.

The theses outlined above are supported by research from the International Telecommunication Union, which examines the dynamics of the growing number of users with access to and who use the Internet, as well as the regional breakdown. See figures 1,2 [7].

Approximately 67% of the global population, or 5.4 billion people, are now online, marking a steady increase in Internet use across the world. However, there remains a significant digital divide, with internet penetration rates closely tied to a country's income level. High-income countries are approaching near-universal connectivity, while low-income countries still face major gaps, with only 27% of their populations online. Although Internet use is growing rapidly in these regions, it remains far behind wealthier countries. It means that Internet expansion became wider and wider and will develop current and open new tools for customer interaction.

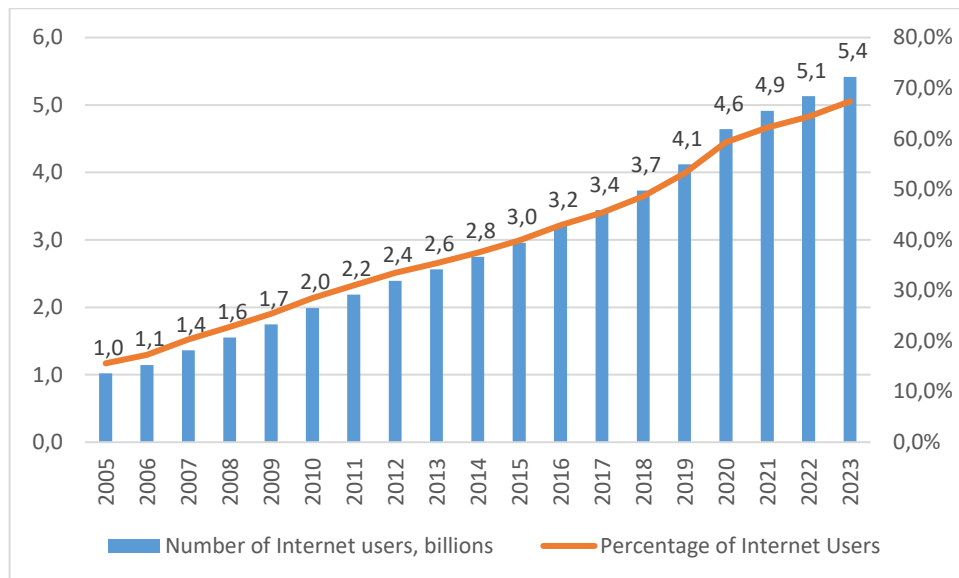


Fig.1. Individuals using the Internet (bln.) [7]

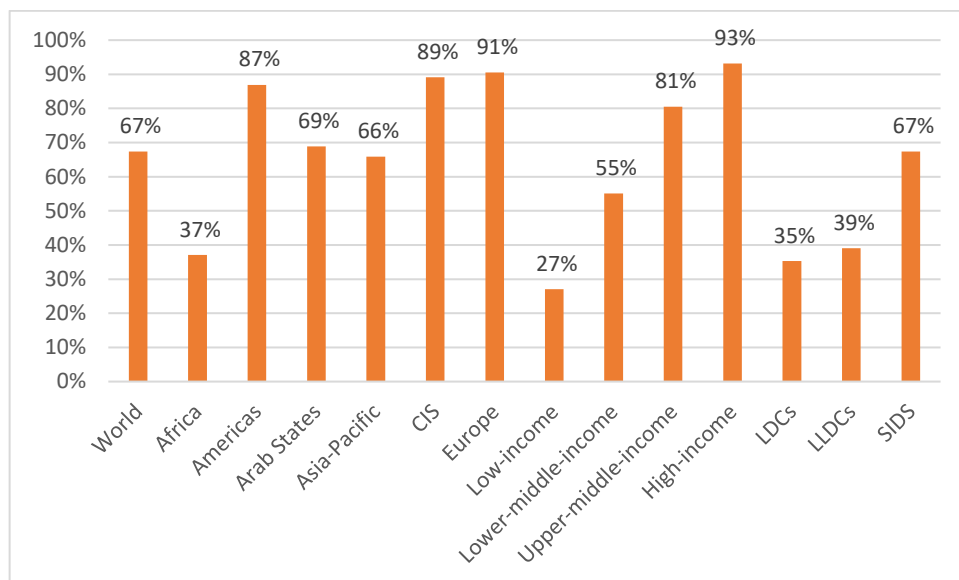


Fig. 2. Percentage of individuals using the Internet by region [7]

If we back to the key components of digitalization it's not hard to guess which of them has a strong relation to marketing. Digital communication is deeply intertwined with marketing, as it enables brands to engage with customers in real-time, deliver targeted messages, and optimize marketing efforts across various channels. It facilitates personalized, interactive, and efficient communication between businesses and their audiences, enhancing brand visibility, customer loyalty, and overall marketing success. To understand how digital communications affect marketing, we can look at 7 main advantages that open up a new level of interaction with consumers:

1. **Data-Driven Decision Making:** Digitalization allows marketers to collect and analyze vast amounts of data about consumer behavior, preferences, and trends.

This data-driven approach helps in tailoring marketing strategies and improving targeting.

2. **Multi-Channel Engagement:** Marketers can reach consumers through various digital channels such as social media, email, websites, and mobile apps. This multi-channel approach enhances customer engagement and brand visibility.
3. **Automation and Efficiency:** Digital tools and software enable the automation of marketing tasks (e.g., email campaigns, social media posting), streamlining processes and saving time and resources.
4. **Personalization:** With access to consumer data, marketers can create personalized experiences, delivering relevant content and offers to specific segments of their audience, thus increasing engagement and conversion rates.
5. **Real-Time Interaction:** Digital marketing allows for immediate communication with consumers, facilitating interactions through chatbots, social media responses, and personalized recommendations based on real-time behavior.
6. **Influencer Collaboration:** The rise of social media has given birth to influencer marketing, where brands collaborate with individuals who have significant online followings to promote products in a more relatable way.
7. **Analytics and Performance Measurement:** Digital marketing provides tools to track and measure the effectiveness of campaigns in real-time, allowing for continuous optimization based on performance data.

Key and most active instrument of nowadays is social media, figure 3. It's a primary tool for digital communication in marketing. Platforms like Facebook, Instagram, Twitter, LinkedIn, and TikTok etc. provide businesses with the ability to connect directly with their target audience, engage in conversations, and promote content. Social media also allows brands to:

1. Build brand awareness.
2. Share promotions and new products.
3. Respond to customer inquiries and feedback in real time.
4. Foster community and create a sense of belonging among customers.

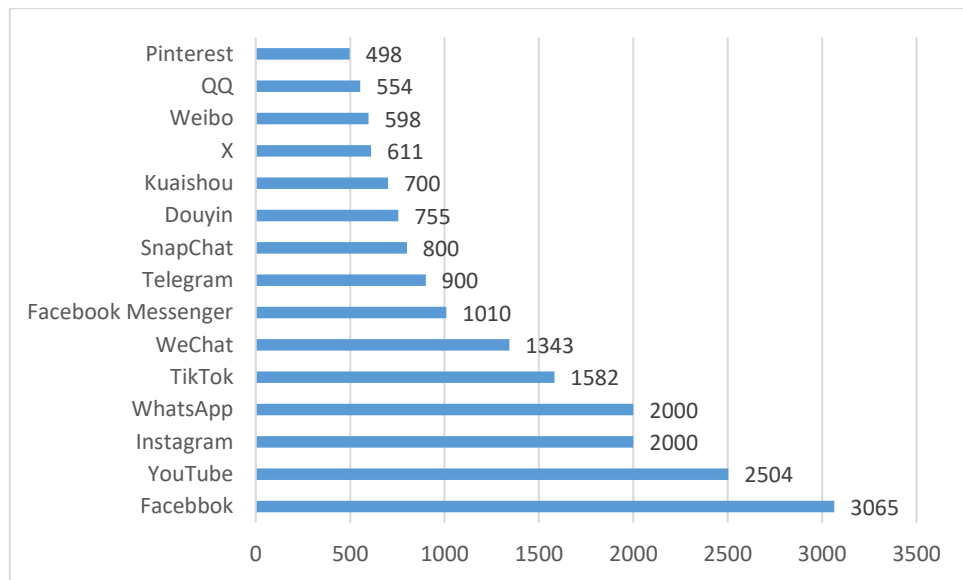


Fig. 3. Most popular social networks worldwide as of April 2024, by number of monthly active users (mln.) [8]

Statistics confirm the active use of social media. If we sum up the total number of active users across all platforms, it exceeds 18 billion, which is more than twice the Earth's population. This trend is only gaining momentum, and with the digitalization of poorer regions, more and more users will be influenced by brands, with the primary competition occurring in the markets of developed countries. According to the research by the GWI portal, *Global Social Media Statistics*, processed and illustrated by the Datareportal portal [9], the main reasons for using social media have been identified. See figure 4 below.

Age 16 to 24	Age 25 to 34	Age 35 to 44	Age 45 to 54	Age 55 to 64	Age 65+*
FRIENDS & FAMILY 48.3%	FRIENDS & FAMILY 48.0%	FRIENDS & FAMILY 52.5%	FRIENDS & FAMILY 55.1%	FRIENDS & FAMILY 56.6%	FRIENDS & FAMILY 58.3%
FILL UP SPARE TIME 43.4%	FILL UP SPARE TIME 39.6%	FILL UP SPARE TIME 38.4%	READ NEWS STORIES 39.1%	READ NEWS STORIES 39.3%	READ NEWS STORIES 26.6%
FIND CONTENT (EG. VIDEOS) 33.4%	READ NEWS STORIES 32.9%	READ NEWS STORIES 37.2%	FILL UP SPARE TIME 38.3%	FILL UP SPARE TIME 34.2%	FILL UP SPARE TIME 25.8%
SEE TRENDING TOPICS 31.5%	FIND CONTENT (EG. VIDEOS) 31.9%	FIND CONTENT (EG. VIDEOS) 31.3%	FIND CONTENT (EG. VIDEOS) 29.2%	FIND PRODUCTS TO BUY 25.9%	FIND LIKE-MINDED PEOPLE 13.8%
READ NEWS STORIES 28.5%	SEE TRENDING TOPICS 31.0%	SEE TRENDING TOPICS 30.5%	FIND PRODUCTS TO BUY 28.6%	FIND CONTENT (EG. VIDEOS) 25.3%	SEE TRENDING TOPICS 13.8%
IDEAS: THINGS TO DO & BUY 27.9%	IDEAS: THINGS TO DO & BUY 28.4%	FIND PRODUCTS TO BUY 29.3%	SEE TRENDING TOPICS 28.3%	IDEAS: THINGS TO DO & BUY 23.4%	FIND PRODUCTS TO BUY 13.5%
FIND PRODUCTS TO BUY 25.1%	FIND PRODUCTS TO BUY 27.0%	IDEAS: THINGS TO DO & BUY 27.8%	IDEAS: THINGS TO DO & BUY 26.0%	SEE TRENDING TOPICS 22.6%	FIND CONTENT (EG. VIDEOS) 13.4%
WATCH OR FOLLOW SPORTS 24.7%	WATCH LIVE STREAMS 25.8%	WATCH LIVE STREAMS 26.5%	ACTIVITIES FOR WORK 23.3%	SHARE & DISCUSS OPINIONS 21.2%	IDEAS: THINGS TO DO & BUY 11.7%
MAKE NEW CONTACTS 24.2%	WATCH OR FOLLOW SPORTS 25.2%	ACTIVITIES FOR WORK 25.7%	WATCH LIVE STREAMS 22.6%	WATCH LIVE STREAMS 19.9%	SHARE & DISCUSS OPINIONS 11.7%
INFLUENCERS & CELEBRITIES 24.1%	ACTIVITIES FOR WORK 24.4%	WATCH OR FOLLOW SPORTS 25.3%	SHARE & DISCUSS OPINIONS 22.5%	WATCH OR FOLLOW SPORTS 19.0%	WATCH OR FOLLOW SPORTS 10.6%

Fig. 4. Main Reason for using social media [9]



As a fact, among the main reasons, we see the most powerful channels of influence on the user: Find content, See trending topics, Ideas: Things to do & Buy, Find products to buy, Influencers & Celebrities.

The second pillar in digitalization of marketing is personalization. It's crucial for engaging consumers and driving business growth. According to a McKinsey study, 71% of consumers expect personalized interactions, and 76% are frustrated when they don't receive them [10]. Personalization involves tailoring marketing messages to individual customers based on their preferences, behaviors, and needs. This approach leads to higher engagement, retention, and conversions.

Key benefits of personalization include:

1. Increased Engagement. Personalized content (e.g., tailored product recommendations, dynamic website content) drives higher click-through rates and conversions.
2. Cost Efficiency. Personalized marketing can reduce acquisition costs, boost revenue by 5-25%, and improve the efficiency of marketing spend by up to 30%.
3. Improved Customer Experience. Using AI and data-driven strategies, brands can deliver more relevant content and offers, leading to greater customer satisfaction.

Examples of Successful Personalization are pretty simple [11]. Netflix uses advanced algorithms to recommend shows based on user behavior, improving engagement and retention. Spotify offers personalized playlists like "Discover Weekly" and a personalized "Wrapped" campaign, enhancing user loyalty and encouraging social sharing. Coca-Cola created the "Share a Coke" campaign, which printed popular names on bottles, created a personal connection with customers and boosted sales.

Successful cases are based on personalization strategies what refer to the methods and techniques businesses use to tailor their marketing efforts to individual customers based on their preferences, behaviors, and past interactions. These strategies involve collecting and analyzing customer data to create personalized experiences, products, services, or content that are relevant to each customer. The goal is to increase engagement, satisfaction, and conversions by making customers feel valued and understood.

Examples as pretty simple as:

1. Email Campaigns - tailor content, discounts, and offers based on customer behavior and preferences.
2. AI & Machine Learning - analyze customer data to predict behaviors and automate personalized recommendations.
3. Behavioral Targeting - deliver targeted ads based on user actions, such as browsing history or abandoned carts.

While personalization can lead to significant benefits, challenges include managing vast amounts of customer data, maintaining privacy compliance (e.g., GDPR), and ensuring brand consistency.

Ultimately, personalization is essential for building deeper customer relationships and achieving higher returns in digital marketing. Technologies like AI are making it easier to scale personalization efforts, allowing brands to provide a tailored experience across channels at scale.

One of the pillars of personalization is collecting user behavioral data and building a data-driven decision making approach. Data-driven decision making has become essential for achieving marketing success, enabling businesses to make informed decisions based on insights derived from data analytics. By leveraging data, marketers can better understand customer behavior, market trends, and campaign performance, which allows them to enhance audience targeting and create hyper-targeted campaigns that increase relevance and conversion rates. Personalization is another key benefit, as data allows businesses to tailor content, offers, and advertisements to individual preferences, fostering customer engagement and loyalty. With current market trends it has direct connect to Big Data because too many factors are needed to be analyzed. Additionally, continuously analyzing marketing metrics such as click-through and conversion rates helps marketers optimize campaigns in real-time, adjusting strategies for better performance. Beyond optimization, data-driven insights also drive innovation by identifying new trends, market opportunities, and consumer behaviors, fueling business growth and keeping companies ahead of the competition. In today's competitive landscape, embracing a data-driven approach empowers businesses to maximize ROI, enhance their marketing strategies, and support sustainable growth. Trend of Big Data market what is the source to all next steps in business as marketing instruments are displayed in figures 5, 6 below [12, 13].

If we analyze the diagrams above, we can state that the Big Data market has been growing year after year with an average growth rate of 9.6%, and as a result, Data-Driven decisions will continue to gain momentum. Figure 6 shows data from a 2016 study. There is no up-to-date information available on specialized marketing research websites for the last 1-2 years, however, based on the trends and statements from experts, the figures in the current interpretation could be up to a third higher

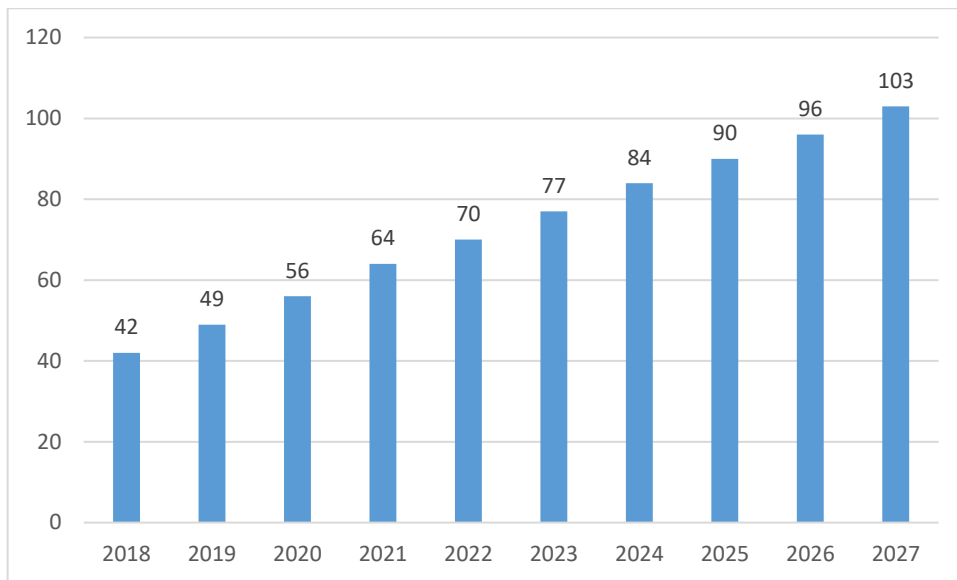


Fig. 5. Big data market size revenue forecast worldwide from 2018 to 2027 (bln.) [12]

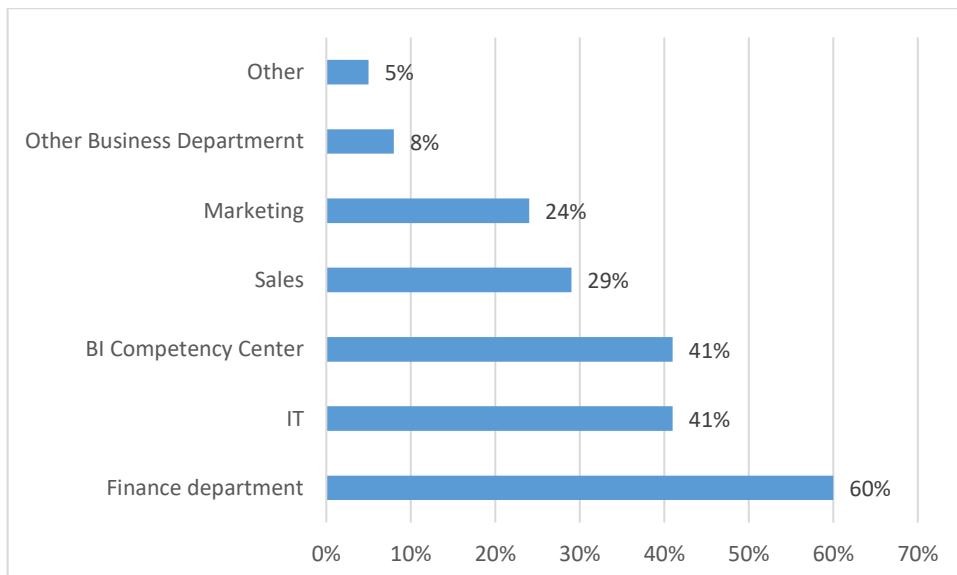


Fig. 6. Data-driven business culture by sphere [13]

Another key aspect is marketing automation. Marketing automation refers to the use of technology to streamline and enhance marketing efforts. It allows businesses to manage every aspect of their campaigns from a single platform, including email, social media, mobile messaging, and ad management.

Through automation, businesses can deliver valuable content that builds trust and credibility with potential customers, educating them about the brand's offerings and helping them assess their level of interest.

As prospects move further down the funnel and narrow down their product preferences, automation can be used to send tailored messages to specific groups who are most likely to engage and benefit from the brand's services.

Finally, when the marketing automation system detects increased interest from a qualified lead, that lead—now well-understood and thoroughly vetted—can be automatically handed over to the sales team for follow-up.

Several statistical facts are shown in figures 7 and 8 [14]:

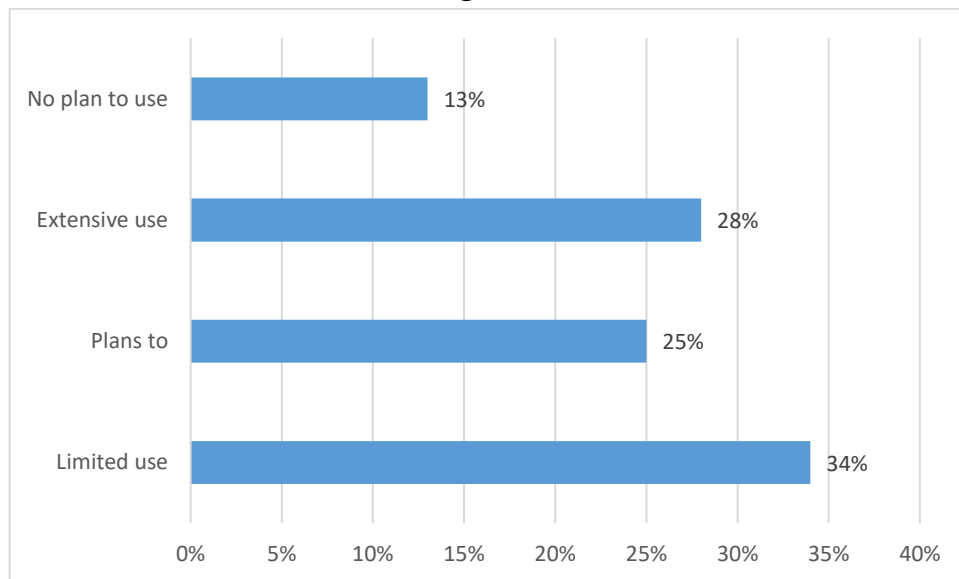


Fig. 7. Use of Marketing automation [14]

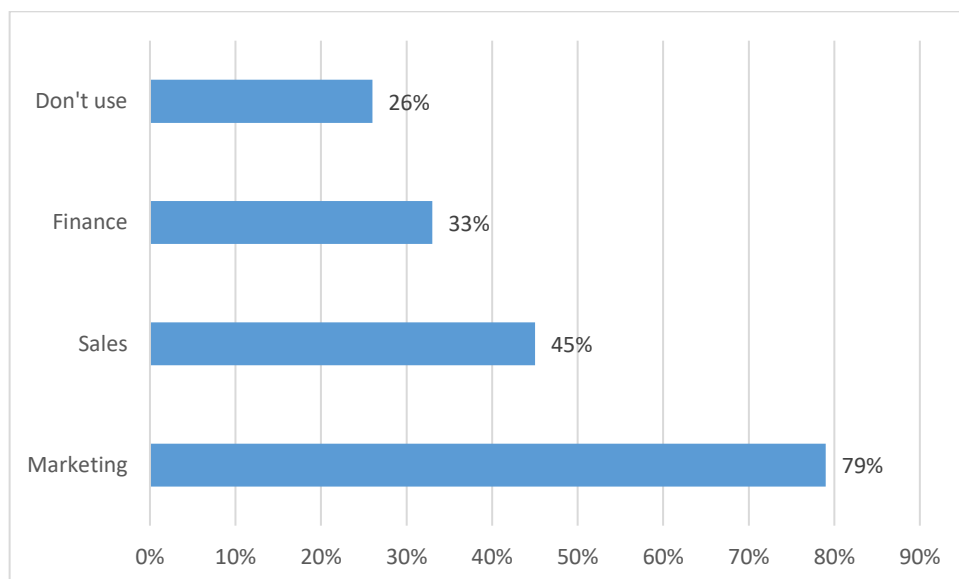


Fig. 8. Business that uses automation [14]

The digitalization of marketing processes has significantly transformed how businesses engage with consumers, improve operational efficiency, and drive innovation. Through the integration of digital technologies, including automation, data analytics, and personalization, marketing efforts have become more effective and targeted. The growing use of digital communication tools, particularly social media, has allowed brands to connect with consumers in real-time, providing personalized experiences and enhancing customer engagement. Data-driven decision making has

empowered marketers to optimize campaigns, predict trends, and make informed choices, ensuring higher conversion rates and better return of investment. Additionally, influencer marketing has emerged as a powerful tool for reaching new audiences and increasing brand visibility. As the Big Data market continues to grow, the use of marketing automation and data analytics will remain central to marketing strategies, helping businesses stay competitive in an increasingly digital world. Overall, the digitalization of marketing is reshaping the way companies interact with consumers, offering new opportunities for growth and innovation.

In summary, digitalization in marketing transforms how businesses engage with consumers, making marketing efforts more targeted, efficient, and adaptable to changing consumer dynamics.

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# **DESIGN THINKING AS A METHOD OF INCREASING THE VALUE PROPOSITION**

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A value proposition is more than just a description of a product or service. It is how a brand or product solves a significant customer issue, improves the lives of the target audience and makes them feel better. The value proposition is a critical component of brand strategy. This statement conveys the unique value that the product or service offers to its customers. A unique value proposition can make a brand stand out from its competitors and give customers a clear reason to choose it over others.

The world has been turbulent in recent years, and is characterized by significant changes and crises. Classic approaches to doing business, including creating value propositions, are ineffective. In such uncertain, rapidly changing conditions, it is advisable to use creative methods of problem solving, such as design thinking. The purpose of this paper is to study the practical use of design thinking tools to increase the effectiveness of the value proposition.

Research on scientific sources has revealed that in the context of the digitalization of the economy, many organizations, or even entire industries, need to rethink the architecture of creating and delivering value propositions and operational models almost simultaneously, i.e., to use the third path of digital transformation. Organizations capable of implementing this approach are in a unique position to achieve industry leadership [16, 17].

T.I. Kravchenko, in her study of the methodology for commercializing innovative ideas, emphasizes the development of value propositions and identifies four stages of their development: 1) identifying target segments (potential consumers and investors), 2) collecting information to determine the needs/wants/fears of the target audience; 3) determining the competitive advantages of innovative products; and 4) formulating the value proposition. The researcher has developed rules for formulating value propositions for different target audiences and emphasizes that they should not only be interested but truly inspired [13].

Scientists note that the level of digitalization of an enterprise affects the identification and understanding of the value of its existing and potential customers. Proper understanding of trends and their significance for the enterprise allows for the

adaptation of business processes, increased business resilience, and financial benefits in the short term [15].

The value proposition of a business can be expanded through software products. In particular, M. Lipchansky and O. Ilyashenko compare the Code First and Design First approaches in the development of application programming interfaces and conclude that the Design First method has an advantage and allows for faster task completion [14].

Researchers usually consider the method of design thinking as a tool for creating innovative products, but many scientists also believe that the scope of its application can be wider. In particular, design thinking can contribute to the organic growth of a company and can be used as a problem-solving approach [1]. What is more, organizations can use this method in their practical activities as a managerial tool for personnel development and improvement of their qualifications.

Scientists claim that design thinking can be described as a constant rethinking of business based on proximity to the customer [2].

The application potential and issues of design thinking have been comprehensively studied in the scientific paper by Xinya [3], where it has been presented how to apply design thinking for business model innovation.

Design thinking can be interpreted as a key success factor for creating an enhanced value proposition, and thus, for improving customer experience while providing business value added [1].

Scientists are investigating the change of value propositions in the tourism ecosystem in crisis conditions [4]. In particular, this study emphasizes that consumers in the context of crisis changes reevaluate their needs, their consumption intentions are influenced by security and risk issues.

Design thinking helps to shape a business strategy and establish a successful user experience [5, 6]. Scientists investigate how the integration of design thinking into the innovation process helps create additional forms of value and helps harmonize the often conflicting interests of stakeholders [7].

Design thinking was used to develop a managerial mental model that helps sustain the creative response of senior managers within the framework of the company's digital transformation [19]. This model provides a more detailed understanding of innovative behavior that can be used by managers to develop competencies to be resilient to change.

Research confirms [20] that design thinking is a successful tool in the activities of modern companies operating under conditions of uncertainty and rapid change. In this context, design thinking offers a clear reference framework, supports the search for new ways to create value propositions in the context of digitalization, and provides



well-tested methods for experimenting with business models before their implementation.

Scientists argue that design thinking supports the development of digital transformation and innovation capabilities. However, to date, the connection between design thinking and the digital transformation of an organization remains imperfect and requires more detailed study [18].

To study the essence of the value proposition and its formation on the basis of design thinking such methods of scientific research as theoretical and logical explanation, systematization and explanation, determinological analysis have been used.

The use of methods of analysis, synthesis and generalization served to substantiate the principles of design thinking and build a customer journey map. A case method was used to illustrate the practical application of the design thinking stages.

In various industries, companies are looking for special ways to create a more sustainable business model, opportunities to increase their competitiveness, growth and renewal. It largely depends on interacting with customers, understanding their needs and offering the optimal solution. A well-formed value proposition meets the criteria presented in Figure 1.

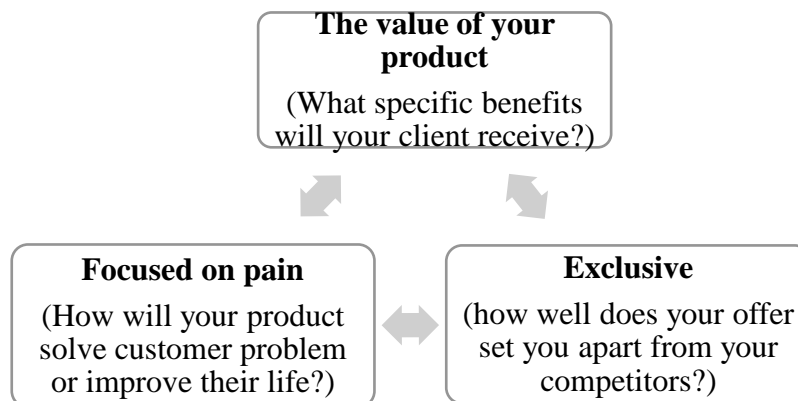


Fig. 1 Criteria for the formation of a value proposition

*Source: formed by the authors based on [6]*

The development of the value proposition (hereinafter, the VP) begins with the creation of a canvas with two sides [8]:

Customer profile (avatar) helps to clarify the understanding of the consumer, in particular, the pains he/she is guided by and priorities when making a decision;

A value map is a description of the values that the company offers to its customers.

The value map includes: a list of all goods and services on the basis of which the VP is created; methods of creating advantages (benefits) for customers, etc. “analgesic”, i.e. the ways in which the goods and services of the business entity soothe the pain of customers, i.e. handle certain problems.

The components of the customer profile are described in Figure 2.

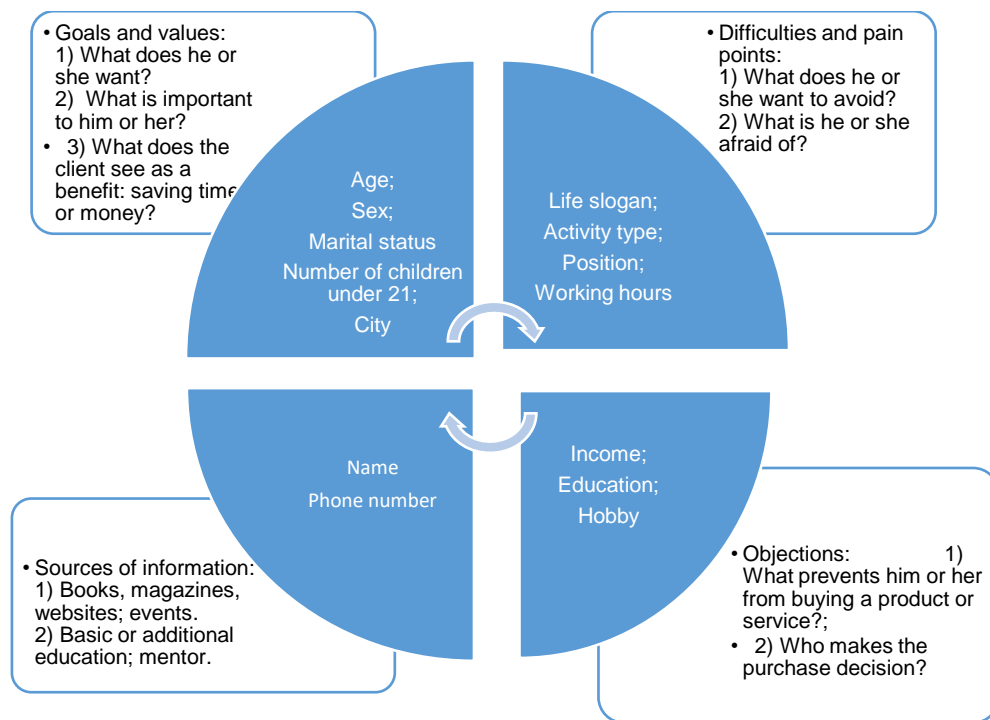


Fig. 2. Customer profile [9]

We suggest using design thinking to create a value proposition that would best meet the consumer's problems and needs. Design thinking is a problem-solving approach that focuses on understanding the deep needs of customers and creating solutions that meet those needs. This is a human-centred approach that emphasizes compassion, creativity, and rationality.

The design thinking process usually includes 5 stages:

- 1) *Empathize*: researching the needs of users and empathizing with their pain;
- 2) *Define (analysis and synthesis)*: formulation of user needs and problems;
- 3) *Ideate*: making assumptions and generating ideas;
- 4) *Prototype*: the beginning of creating real solutions.
- 5) *Test*: testing solutions.

This approach allows realizing the problem, finding creative solutions and testing their effectiveness. The heart of design thinking is the stage of empathy, and its basis is prototyping.

The advantages of using design thinking include:

**Focus on the customer.** Design thinking puts the customer at the centre of the innovation process, enabling the successful development of products, services and experiences that meet their needs and preferences better.

**Cooperation.** Design thinking promotes collaboration in the innovation ecosystem and teamwork within the organization, which can lead to the development of more

innovative and creative solutions. By bringing together people with different experiences, perspectives and competencies, design thinking can generate ideas that would not be possible for a single person or team working in isolation.

**Iterative process.** Design thinking is an iterative process that involves testing and improving ideas several times directly in practical activities (Figure 3). This allows us to better understand the needs and preferences of customers and, as a result, develop more successful products and services.

**Minimization of risks.** By involving customers in the creation process, design thinking helps reduce the risks associated with developing products or services that do not meet customer needs. This can lead to a more successful launch of new products and services and reduce the likelihood of failures that lead to significant waste of time and money. This approach has become key for companies such as Apple, Google, IBM, Airbnb and Zoom.

The principles of design thinking are presented in Table 1

Table 1.

Principles of design thinking

Principle	Description	Application
Focus on the user	Design thinking starts with studying users and their needs	Design thinking is applied to create products that effectively solve user problems
Ideation	Participants in the process generate many ideas to find the best solution to the problem	Design thinking helps to find new innovative solutions and improve existing products
Prototyping	Creating prototypes while working on an innovative solution helps test ideas and get timely feedback	Design thinking is used to create prototypes that allow you to test the product concept and identify potential problems

*Source: compiled by the authors*

The first stage of design thinking is *empathy*. First of all, it is understanding the needs of consumers, experiencing their problems jointly and sympathizing with their failures. Only by putting themselves in the customer's place, the company's employees can really create a useful solution that will have competitive technical and consumer characteristics, which include design as a visually attractive and ergonomic component. A map of empathy for customers, which involves consideration of sensory components, consumer behaviour, and his/her psychological characteristics is suggested in Figure 3.

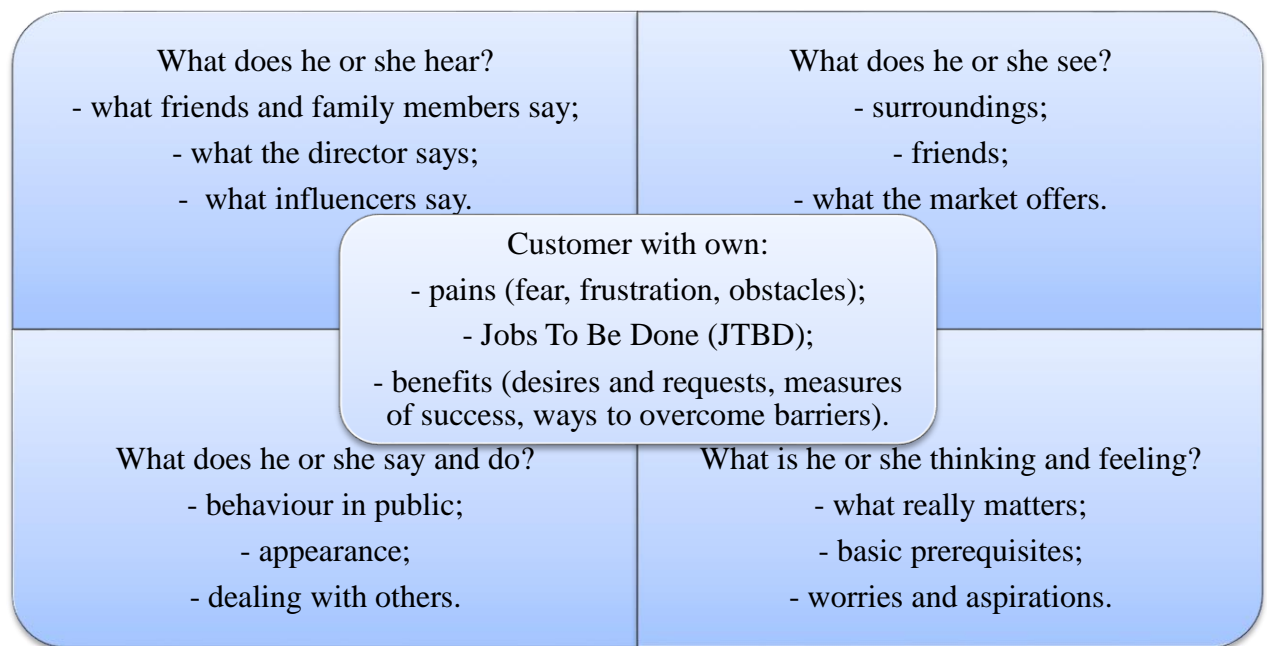


Fig. 3. Map of customer empathy  
Source: based on Ken Wilber's four quadrants [21]

Let us take a closer look at JTBD, which says a lot about potential and real customers of the company. The Jobs To Be Done approach consists of three important components [10]:

**Job.** Just as an employer hires and fires employees to solve tasks and improve the business, consumers “hire and fire” products or solutions. The product “does the work” and the consumer benefits.

**To be.** In the context of the JTBD approach, the “to be” part describes the user as he sees himself in the future when “the job is done” and does not focus on what the consumer is doing today. Obsession with current statistics often leads companies in the wrong direction. The data may say that users like product 1 more than product 2, but the statistics say nothing about the reasons for this choice.

**Done.** When a person uses the product and makes the desired progress, the job is done and the demand for the product decreases. In terms of innovation, this means that the job to be done ends when the consumer makes the desired progress.

The Jobs To Be Done approach provides insight into what purposes/jobs customers have purchased a product for in the past and predicts what customers will want to buy in the future.

JTBD helps you see the motive behind the purchase and create a product that will answer the internal demand of the customer.

In the JTBD approach, what is sold is not the product itself, but the opportunity for users to become a different, better version of themselves. When a company develops a new product, one of the tasks is to separate from “what is” and imagine “what should be.”

Henry Ford used to say that if he had asked what people wanted, he would have heard of faster horses. However, Ford was not thinking about how to improve horses, but “about job” - getting from point A to point B as quickly as possible.

It is easy to just make things better: businesses can use benchmarks and make things “cheaper”, “faster” or “more economical”. If the company's task is to develop a new product, it will have to put aside the improvement of what it has now in order to imagine a different future and a solution that did not exist before.

Apple was quite successful in selling the iPod, so it could continue to improve the player. However, even when sales of iPods were growing every year, Apple began developing a new device: the iPhone included all the functions of the previous product plus many others, and became a desired purchase for millions of users.

To build a successful product, you need to understand why people buy it. What useful or pleasant future does a person see? What goals (jobs) are people trying to solve with the product?

Creating a new self (i.e. having a JTBD) is a process in which consumers and the company participate. To achieve the goals, the customer in any case needs a product that will help design, build and complete the desired job.

For example, LinkedIn, when offering a premium version, does not talk about what a good product they have – all the options describe “progress” – how the user can become better. The service first marks the user's problems by segments, and then offers more specific solutions for each task.

A product is impossible without users, and companies have to remember that manufacturers and customers must work together as a single system to succeed. This is the implementation of design thinking concept. Therefore, one should strive to understand why customers choose a certain way to solve a certain task, and in what other ways the customer can achieve the same goal. In order to understand what kind of solution the user needs, potential customers go through in-depth interviews:

- 1) the moment the problem arises;
- 2) events accompanying from the moment of becoming aware of the problem to choosing a solution;
- 3) what emotions brought the user closer to the solution or pushed him/her away from it;
- 4) competitors and alternative ways to solve the same problem (substitute goods);
- 5) criteria by which the user compared solutions.

Consumers “hire” products to make progress: the product does the work and the consumer receives the benefit (progress). If the product can provide the desired benefits, the customer will continue using it. If this is not possible, the buyer leaves it and considers something new.

An important rule that is often forgotten is that competition can come from anywhere, not necessarily from products in the same category.

If you focus on tasks, project management programs like Basecamp compete with other similar services. In a JTBD approach, Basecamp also competes with email, Slack, meetings, and video conferencing.

It is not enough just to improve an existing product. Eventually someone will come up with a new way to do the same job and users will simply switch to another product. Therefore, when thinking about competitors, you should not limit yourself to product categories. This is confirmed by research [11], which claims that in recent years there has been a change in business logic from product-dominant to service-dominant. For example, companies such as Daimler AG, BMW Group are moving from car production to providing mobility services and are forming their value propositions based on co-creation and co-destruction. That is, it is better to focus on what goal the user seeks to achieve in certain circumstances.

Markets defined through the JTBD approach are much larger than markets defined by product categories. Marketers stuck in the mental trap of equating market size with product categories fail to understand who they are competing against from the customer's perspective.

Completely different people may have the same “job to be done”: take care of the family, be a good father, make the house cosy, have fun, develop professionally.

A distinction should be made between Jobs-As-Activity and Jobs-As-Progress.

There are two different interpretations of the Jobs To Be Done approach, which creates confusion. The main difference between the two models is the idea of why consumers buy products:

#### *Jobs-As-Activity Model.*

“Jobs-As-Activity” assumes that customers buy a product because they want to perform some set of tasks: buy a drill to make a hole in the wall; buy a grill to fry sausages; pay a Netflix subscription to watch a new series. The Jobs-As-Activity model invites businesses to focus on products and technologies that help consumers perform tasks and activities better.

The company should focus on improving how people use the product, not on why they do it. Accordingly, new products and services will win in the market if they help customers “get their job done” faster, more predictably, with better performance and/or cheaper.

#### *Jobs-As-Progress Model.*

“Jobs-As-Progress” assumes that consumers do not want to perform tasks, but are looking for positive changes in their lives, that is, progress. Therefore, the company must understand “why” customers need the product; look at the motives behind the user's actions. In contrast to the Jobs-As-Activity model, innovation in Jobs-As-

Progress is viewed not as the development of tasks and activities, but as their elimination. Humanity creates technology to solve fewer tasks and enjoy life more.

IKEA's innovation was to create furniture that the customers can order and assemble themselves, without having to “cut a straight line” or “drill holes”. Then the company went further, and in 2017 IKEA bought the home help service TaskRabbit, because IKEA understands that people do not want to “assemble furniture”. Rather, they want to be organized, express their individuality and feel comfortable in their own home.

The Jobs-As-Progress model explains how people bridge the gap between reality and the “best version of themselves.” A consumer will search for, buy, and use a new product if there is a discrepancy between how things are today and how they want things to be in the future.

Steps to apply Jobs-To-Be-Done:

1) There is a certain way of life/work today: for example, you are stuck in your position and want to develop in related fields.

2) There is a new, better way to live/work as you wish: new knowledge would give you the opportunity to try your hand at a new role.

3) There are limitations that block the transition from point 1 to point 2: experiences that it will be difficult to independently understand arrays of unstructured information.

The way to overcome the limitations will be the job that needs to be done. For example, you can improve your professional skills with the help of courses with the additional assistance of a mentor. Achieving progress means that a person overcomes a gap and moves from an old path to a new and better one.

The creation of any new product begins with an idea and research: will the new solution enjoy sustainable demand, what user problem the product will solve.

The JTBD approach is used at the very beginning of the job (empathy) and at the ideation stage to understand how well the future application or system meets the user needs.

This concept helps to:

- identify the basic needs of users;
- see competitors from the client's point of view, especially those that are not obvious;
- find innovative products and services to solve problems that have no solution yet.

JTBD research provides insight into not only who potential customers are, but also why they want or do not want to buy a particular product or service.

Moreover, at the empathy stage there will often be a customer journey map. Customer Journey Map is a tool that allows you to visualize all the steps that a customer

takes during interaction with a product or brand, both offline and online. Here are some important aspects of creating a customer journey map:

- information should be collected from staff who work directly with clients.
- familiarize yourself with open marketing research within the industry;
- collect feedback and conduct surveys among customers;
- engage data analysts.

Let us consider difficulties and obstacles as types of barriers that a customer journey map helps to identify. Difficulties are situations when something requires effort from a person, but does not prevent the achievement of the goal. For example, in the banking sector, these can be insufficient number and remoteness of ATMs or terminals, long wait for an operator on the telephone support line. Obstacles are situations when something or someone stands in the way of achieving a goal and makes it difficult to achieve it. These may be factors that block or limit customer opportunities. For example, prolonged lack of electricity, air alarms, lack of competent staff, etc.

The design way of thinking, which was described by Bill Burnett and Dave Evans (teachers at Stanford University), requires compliance with certain mental rules that should be followed in order to create a happy life or business project for each person [12]:

1) Be curious. Curiosity is the reason why some people see new opportunities and not problems, even in times of crisis. Curiosity is manifested in interested observation of the existing state of affairs, research, and what will happen if conditions change;

2) Cultivating a tendency to action. The agent of the process must be physically in the thick of events. If we talk about designers, then they try everything that is directly or indirectly related to the object of research. They create prototype after prototype, often failing until they find a solution to the problem. Sometimes in the process one realizes that perhaps the problem is not what it first seemed;

3) Using reframing as a way to move from a “dead” point.

Reframing (from frame) – means to “insert (an old picture) into a new frame”, or “to insert (a new picture) into an old frame”, that is, to formulate the task in a new way. The term is used to describe the procedures of rethinking and reconfiguring the mechanisms of perception, thinking, and behaviour in order to get rid of unsuccessful mental patterns. When management, marketing and logistics specialists “turn on the designer in themselves”, then the internal motives can be put into the phrase: “Don't start with the problem, start with people and feelings.”

4) Focus on the process, then the result will come. If we talk about design thinking, then an important part of the process is to be able to “let go” of the situation. Perhaps the first idea of the creative team was good, but still, it is usually not perfect. Sometimes, a great solution can be born out of an unpleasant situation. This is how it



came about Teflon, rubber, superglue, Play Doh, saccharin, velcro. Therefore, the ability to focus on the process, to be here and now, but to see the final result - is very valuable;

5) Use radical cooperation. Design is a collaborative process, many good ideas can be suggested by other people, even if their opinion is contrary to the opinion of the leaders or the majority of the team. When there is constructive criticism or a business dispute, in order not to go into personals, it is important to cultivate the feeling in each participant of the creative process – “everyone conspired to help us”.

The second stage in design thinking is *analysis and synthesis*, that is, defining or focusing on previously identified customer needs and their problems. For this, the company conducts in-depth interviews and uses the storytelling method.

An in-depth interview is a technique of collecting qualitative data about the problems, behaviour and feelings of users. The interviewer asks the respondents questions in order to get open-ended answers that will help create a product or improve an existing one.

The in-depth interview should be conducted:

- when we do not know who our target audience is;
- when data from analytics is not enough;
- when it is necessary to confirm or refute the hypothesis.
- to collect data to identify potential problems or inconveniences when using a certain product/service;
- to collect data on pain points or positive experiences;
- for risk management: interviews ensure that decisions are based on real user feedback;
- to plan the budget: allows you to determine the priority functionality in case it is an MVP (minimum viable product).

In-depth interviews work well in the early stages of product development, but can also improve an existing product.

The use of storytelling is also an effective method when interacting with potential consumers.

It is a philosophy where the brand's values and vision are woven into a coherent narrative that captivates and inspires the viewer. Actually, not at the stage of analysis, but later - at the stage of ideation, it should be considered which idea would be at the centre of the story that the company will tell to the potential consumer. After all, it is important to fill every detail of the future product or service with content and make sure that together they tell a unique story. You should also remember about authenticity. The story the company tells must be true and reflect the real values and mission of the brand. Authenticity attracts attention and distinguishes the company from competitors. Storytelling should evoke in users the necessary emotions and sensory associations associated with a product or service.

The purpose of the text is not to provide a simple answer to a complex question, but the following functions:

- broadcasting of values;

- establishing an emotional connection with people;
- building trust in the brand;
- creation of a clear image of a company or a person in the mind of the audience (application of an archetypal component).

Artists and writers claim that people do not think in facts, statistics, and numbers. They think in stories. In management, analytical statistics are indispensable, so infographics can be used.

Entrepreneur Jeff Bezos banned his employees from using presentations in meetings. At the request of the Amazon owner, speakers must write essays to present their ideas and proposals. He believes that this approach is more effective than presentations. Bezos himself built his speech in the U.S. House of Representatives (2020) on the technology of storytelling.

The storytelling technique does not involve a direct call to buy something, does not impose anything. This is its distinguishing feature and advantage. The brand, of course, is present in the story, but it is more of a sidekick than a wizard who solves problems in an amazing way.

The emphasis in storytelling is on details that are very important indirectly. They are the name, appearance, character, clothes for the hero. For the story - weather, season, place, time, other characters. You cannot detail everything in a row, it is better to choose a few important features and supplement the story.

The main tasks of storytelling are establishing emotional connections with the target audience, broadcasting values, increasing brand recognition and customer loyalty, promoting a brand or product, forming a clear image of the company and trust in it.

The source of storytelling is most often the real stories of people, or those who created a business and develop it, or its partners and customers. It is necessary to write a story, focusing on the features of the audience. It is important to maintain a balance of emotions, credibility and logic. It is necessary to clearly define the limits of relevance. The relevance of storytelling will not disappear as long as there are people, because everyone has something to tell.

The next stage is to ideate. There is no way to do without “brainstorming” here for sure. The main rule is not to criticize. The more ideas you put forward at the start, the higher the chances of getting an effective solution at the end. You can filter out ideas using the method of paired comparisons or facilitation.

The fourth stage in design thinking is the prototyping stage. Once the best idea has been chosen, the team begins to create models or prototypes that show what the proposed solution will look like.

Prototyping helps to make the design clearer and more practical. It can be both a physical model (analogue) and a digital sample, depending on what is being worked on. Prototypes help the team and customers better understand how the final solution will work and look.

This stage is very important in design thinking, because it allows you to test hypotheses, evaluate usability and interaction with users. It provides an opportunity to

make additional adjustments and clarifications to the final implementation of the project.

There are two general approaches to prototyping:

*Throw-away*: prototyping is done using simple tools (such as paper and pencil, whiteboard, or software) to identify and refine requirements. A prototype can be updated or developed during discussion and development, but does not become working code and is not saved as a result after the final system or process is implemented. This method is useful for identifying functionality or processes that are not easily obtained using other methods, have conflicting viewpoints, or are difficult to understand. These prototypes can be a low-cost tool for discovering or validating requirements that go beyond the interface, including requirements related to processes, data, and business rules.

*Evolutionary or Functional*: prototypes are created to transform initial requirements into a working solution as the requirements are refined with stakeholders. This approach allows getting the working solution and typically requires a specialized tool or language to create prototypes that can be used in the final solution. If specialized software is used, business processes, rules and data can be modelled to assess the impact of changes and confirm desired outcomes.

There are many forms of prototyping today. Each of the following can be considered a form of prototyping:

*Proof of Principle or Proof of Concept*: a model created to validate a system design without modelling the appearance, materials used to create the work, or processes/workflows that will ultimately be used by stakeholders.

*Form Study Prototype*: used to study the basic dimensions, appearance and feel of the product to be manufactured without creating the actual functionality. It is used to evaluate ergonomic and visual factors using a sculptural representation of a product made of inexpensive materials. This type of prototype can also be used to simulate workflow or high-level navigation to identify gaps or inconsistencies in possible solution of properties (e.g. appearance, configuration).

*Usability Prototype*: a product model created to test how the end user interacts with the system without including any properties (e.g. appearance, configuration).

*Visual Prototype*: a product model created to test the visual aspects of a solution without simulating full functionality.

*Functional Prototype*: a model created to test software functionality, user-friendly system qualities (for example, appearance), and workflow. It is also called a working model and is used both for simulating business processes and business rules, and for evaluating calls to software functions.

Below is a list of the most common prototyping methods:

*Storyboarding*: used to visually and textually detail the sequence of actions by summarizing the various user interactions with a solution or company.

*Paper Prototyping*: uses paper and pencil to create an interface or process design.

*Workflow Modelling*: depicts the sequence of operations that are performed and usually focuses exclusively on the human aspect.

*Simulation*: used to demonstrate solutions or solution components. It can test different processes, scenarios, business rules, data and inputs.

Strengths of prototyping:

- 1) provides a visual representation of the future state;
- 2) allows stakeholders to provide information and feedback in the early stages of the design process;
- 3) a narrow but deep vertical prototype can be used for feasibility study, proof of concept or to identify technological and process gaps.

Restrictions on the use of prototyping:

If the system or process is very complex, the prototyping process can get bogged down in discussing the “how” rather than the “what”, which can result in the process taking a lot of time, effort, and facilitation skills.

Getting started with prototyping may require an understanding or assumption about the technology behind it.

If the prototype is highly developed and detailed, stakeholders may have unrealistic expectations of the final solution. These can range from anticipated completion dates to inflated expectations for performance, reliability, and usability. After all, prototyping is the core of design thinking.

The final stage, which includes the design thinking methodology, is the testing stage. After creating prototypes, the team actively tests the proposed solutions on real users. This stage is very important for getting feedback, evaluating performance and making final adjustments to the project.

Testing includes careful observation of users' reactions to the created prototype and analysis of their interaction with the product or service. In the process of testing, possible problems, non-obvious difficulties or needs that may not have been taken into account at the previous stages are revealed.

User feedback is key at this stage as it can lead to further improvements and optimizations. Testing completes the design thinking cycle, preparing the way for further implementation of the product or service.

Design thinking methods are used in various fields, where the emphasis is on creating innovations, improving the user experience, and solving complex tasks. The application of design thinking in various industries helps to go beyond traditional approaches, stimulating creative thinking and creating innovations.

Companies like Apple, Google, Nike, and many others are integrating design thinking techniques into their products in order to provide a unique user experience and stand out from the competition.

Therefore, design thinking is a powerful tool that promotes creative problem solving and the development of innovative products and services, which will ultimately increase the effectiveness of the value proposition. Its strength lies not only in creating visually appealing design solutions, but also in a deep understanding of user needs, which is the basis for developing products capable of transforming and improving our everyday experience.

**Customer-Centric Innovation**: The JTBD approach emphasizes understanding the underlying reasons why customers “hire” a product. This perspective shifts the focus

from merely improving existing products to creating solutions that fulfill the deeper needs and aspirations of customers.

**Future-Oriented Thinking:** By focusing on the future state of the customer when the job is done, companies can innovate beyond current market demands and statistics. This approach encourages businesses to envision and create products that align with the future goals of their customers.

**Holistic Product Development:** Successful product development involves not just enhancing features but understanding the complete journey of the customer. This includes identifying the moments when problems arise, the emotional drivers, and the criteria for choosing solutions.

**Collaboration and Design Thinking:** The JTBD framework aligns with design thinking principles, where companies and customers collaborate to co-create solutions. This partnership ensures that products are designed to meet real needs and deliver meaningful progress for users.

**Beyond Incremental Improvements:** True innovation often requires moving beyond incremental improvements of existing products. Companies should be willing to imagine and develop entirely new solutions that redefine how customers achieve their goals.

**Storytelling in Business:** Effective communication of a product's value involves storytelling that resonates with the customer's journey and desired outcomes. This narrative approach helps in articulating how a product can transform the user's experience and fulfill their aspirations.

By using design thinking, companies can better understand and anticipate customer needs, leading to the development of products that not only meet current demands but also inspire future value proposition growth.

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# **TRANSFORMATION OF APPROACHES TO MARKETING MANAGEMENT IN IT COMPANIES IN THE CONTEXT OF DIGITALIZATION OF THE ECONOMY**

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In the modern world, the digitization of the economy is becoming a destructive force of transformations in all industries, the marketing of IT companies is taking on new forms and methods. Digital technologies are actively influencing strategies for promoting products and services, changing traditional approaches and introducing innovations that allow companies not only to remain competitive, but also to dominate the market.

Innovative approaches to marketing management in IT companies are due to the rapid development of technologies such as artificial intelligence (AI), machine learning, big data and process automation. These technologies provide new opportunities for creating personalized campaigns, optimizing marketing strategies and improving interaction with customers. In particular, AI and machine learning help in the analysis of a large amount of data, which allows more accurate forecasting of trends and adaptation of marketing strategies to the needs of consumers.

The latest studies show that the use of innovations in marketing not only increases the effectiveness of advertising campaigns, but also transforms the ways of communication with customers, making them more personalized and focused on specific interests. Automation technologies allow you to significantly reduce the time spent on routine tasks and focus on strategic development, while a large volume of data provides the opportunity for a deeper understanding of the market and consumer behavior. In this context, it is especially important to consider key innovative approaches to marketing management in IT companies. Analysis of the impact of these technologies on marketing strategies helps to assess their role in adapting to the conditions of digitalization of the economy, as well as to identify the main trends and prospects for development in this area.

In modern conditions of digitization of the economy, innovations play a key role in the transformation of marketing strategies, especially for companies in the IT sector. Research shows that the integration of the latest digital technologies, such as artificial



intelligence (AI), machine learning (ML), big data (Big Data) and process automation, significantly increases the effectiveness of marketing efforts of IT companies.

Artificial intelligence (AI) is increasingly becoming a key tool for analyzing large amounts of consumer data. Studies indicate that AI helps to uncover hidden patterns in consumer behavior, automate processes, and provide predictive and recommendatory insights [2]. This enables companies to respond flexibly to market changes and create personalized marketing offers. Additionally, the use of tools like Perplexity.ai significantly simplifies marketing research by analyzing large datasets and providing accurate, context-sensitive answers [3]. Other studies emphasize that AI integrates into traditional marketing research methods, enhancing real-time data collection [4]. This helps to reduce the time required for data processing and ensures more accurate and relevant consumer insights. Studies show that the integration of machine learning (ML) into IT companies' marketing strategies significantly boosts their efficiency. With the help of ML, marketers can optimize strategies in real time, which greatly improves customer engagement and conversion rates while ensuring more efficient resource use [5].

The use of analytical tools for data collection on user behavior and the effectiveness of advertising campaigns allows identifying the strengths and weaknesses of marketing efforts and making adjustments to improve their effectiveness [7,8]. Digitalization of the economy changes not only the ways of communication with customers, but also the basis of forming marketing strategies in IT companies. The use of new technologies, personalization, integration of digital marketing, the speed of bringing products to the market and data analytics, which become key components of successful marketing activities in the digital economy, are devoted to the publication of domestic scientists and leading specialists, in particular Selezneva G. and Chumak G. [9], Golub V. [10], Sokol K. [11], Bratko O and Solomon I. [12], Obikhod S., Matveev M., Boyko V. [13], Pogoreliy A. [14], Chaikina A., Kravchenko O., Pohidnya B. [15], Kovshova A. [16].

Thus, existing publications show that the use of AI and other digital technologies in marketing opens up new opportunities for IT companies to optimize strategies, increase the level of personalization of interaction with customers and improve the results of their activities in the market.

The study uses a complex of general scientific and special methods, in particular: analysis and synthesis - to study scientific sources, identify key innovative approaches to marketing management in IT companies; comparison - to compare traditional and innovative marketing methods in the context of digitalization of the economy; generalization - to formulate conclusions about the role of innovation in transforming the marketing strategies of IT companies; systematic approach - to comprehensively consider the impact of digital technologies on various aspects of marketing activities.

The information base of the study was compiled by scientific publications of domestic and foreign authors devoted to the use of innovative technologies in the marketing of IT companies, as well as data from analytical agencies.

The conducted research made it possible to identify the main transformations of approaches to marketing management in IT companies in the conditions of digitalization of the economy:

1. Using artificial intelligence (AI) and machine learning (ML) to analyze large volumes of consumer data, identify hidden patterns in their behavior, and generate personalized marketing offers.
2. Integrating analytics tools to collect data on the effectiveness of advertising campaigns allowing you to optimize your marketing efforts in real time.
3. Application of automation technologies to optimize routine marketing processes, freeing up resources for strategic development.
4. Using big data (Big Data) for a deeper understanding of the market, consumer trends and rapid response to changes.
5. Implementation of integrated digital marketing strategies combining different communication channels to achieve maximum effectiveness.

These innovative approaches not only increase the effectiveness of marketing campaigns for IT companies, but also transform the way they interact with customers, making them more personalized and better suited to the specific consumer needs.

Digitalization of the economy significantly affects the formation of marketing strategies of IT companies, requiring the implementation of innovative approaches based on the use of the latest technologies. Key innovations in marketing management are the use of artificial intelligence, machine learning, data analytics and process automation. These approaches allow IT companies to increase the effectiveness of marketing efforts, better understand consumers and quickly adapt to changes in the market environment. The further development of innovative technologies opens up new opportunities for the transformation of marketing activities of IT companies in the conditions of digitalization of the economy.

A comparison of the effectiveness of traditional and innovative marketing methods shows that the introduction of AI, ML and Big Data technologies can significantly increase key performance indicators:

- site traffic increases by 10-15% thanks to personalized recommendations and targeting based on big data analysis [17].
- sales conversions increase by 20-30% due to accurate forecasting of customer preferences and adaptation of offers for each user [17].

- The ROI of marketing campaigns increases, as innovative technologies allow you to optimize costs and direct budgets to the most effective channels.

An assessment of the impact of individual technologies shows that the greatest effect is provided by the integrated application of AI, ML and Big Data. For example, the use of AI-based chatbots for customer service can reduce costs by 20-30% and reduce response time by 5 times [17]. Analysis of big data about user behavior in combination with machine learning algorithms increases the accuracy of advertising targeting. At the same time, the use of innovations in the marketing of IT companies has certain weaknesses:

- high initial investments in AI and ML technologies, the payback of which is not always obvious [18].
- the difficulty of integrating innovative solutions with existing marketing systems [18].
- the need to retrain staff to work with new technologies [18].
- risks of data leakage and confidentiality when processing large amounts of personal information [19].

Thus, the implementation of innovative technologies in the marketing of IT companies demonstrates high efficiency, allowing to significantly improve key indicators. However, in order to achieve the maximum effect, it is necessary to approach the introduction of AI, ML and Big Data comprehensively, taking into account possible risks and barriers. Correct management of innovations in marketing is becoming a critically important success factor in the conditions of digitalization of the economy. In addition, it becomes important for IT companies not only to implement technologies, but also to ensure their transparent communication with customers. Consumers appreciate understanding how their data is being used and how technology is enhancing their experience. This approach not only increases trust, but also builds brand loyalty, which is an important advantage in conditions of high competition on the market.

Based on the identified innovative approaches to marketing management in IT companies, it is advisable to consider specific examples of their implementation. Successful cases of leading IT companies confirm the effectiveness of the use of artificial intelligence technologies, machine learning and automation of marketing processes.

Salesforce has achieved significant results thanks to the the implementation of artificial intelligence. Using AI to analyze customer data has made it possible not only to better adapt marketing campaigns to customer needs, but also to significantly reduce marketing costs. This resulted in a 15% increase in return on investment (ROI). Personalized campaigns have helped better match product offerings to customer

expectations and requirements, which became the basis for increased sales and user satisfaction.

HubSpot is actively implementing automation of marketing processes, which has allowed the company to reduce the time it takes to perform routine tasks. Thanks to this, employees could focus on strategic development and improving interaction with customers. Accurate targeting, based on customer behavior data, increased audience engagement, and effectiveness of communications allowed to increase the number of leads and improve conversion.

Spotify focused on machine learning to create personalized content that helped improve the user experience. Personalization of playlists and recommendations increased the time spent by users on the platform, which positively affected the company's overall revenues. Thanks to this, the service became more attractive to the audience, increasing both the retention of users and their loyalty.

Examining these cases, it is possible to identify the key success factors that allowed the companies to achieve such results. The integration of advanced technologies, including artificial intelligence and machine learning, plays an important role in improving personalization and automating processes. This not only increases the effectiveness of campaigns, but also enables companies to respond faster to changes in the market environment. Personalization of offers based on data about customer behavior becomes a critical factor in increasing engagement and loyalty, while automation frees up time to focus on strategic development.

IT companies that actively implement the latest technologies face obstacles and risks that can affect the success of their innovative projects. In particular, it is important to consider specific challenges that may arise in the process of integrating new solutions and technologies.

An increase in the volume of data processed by IT companies increases the risk of confidential information leaks. This includes not only customer data, but also important business information. In the event of a data breach, serious consequences are possible, such as fines, legal sanctions and loss of reputation. This is especially critical for IT companies, because the trust of customers and partners is the basis of business. It is important to ensure data protection through modern security systems, regular audits and employee training. Since IT companies often use complex algorithms to analyze data and automate processes, the presence of logical or syntactic errors in these algorithms can lead to inaccurate results and wrong decisions. This, in turn, negatively affects the effectiveness of marketing campaigns, business intelligence results and overall performance. Careful testing of algorithms at various stages of their development and implementation is recommended.

High costs for the introduction of new technologies do not always lead to the expected results. A low return on investment can become a serious obstacle to further

development. It is important for IT companies to regularly analyze the return on investment and evaluate the effectiveness of new solutions. This will help to avoid inefficient costs and ensure optimal use of resources. It should be noted that the integration of new technologies with existing systems is a complex and costly process. IT companies may face technical difficulties, the need to update old systems and the need to adapt business processes. The development of a comprehensive integration plan, consisting of assessments of resources and timing, will aid in mitigating the possibility of delays and ensuring a more effective implementation.

In the context of the introduction of new technologies in IT companies, the issue of resisting changes on the part of employees is critical and closely related to the human factor industry. The human factor plays a key role in ensuring successful adaptation to new technologies and changes in work processes. Rejection of new technologies or methods of work can significantly affect the productivity of the team and the overall atmosphere in the company. The human factor includes the attitude of employees to changes, their ability to adapt and the level of motivation, which directly affects the success of innovation implementation. Employees may experience fear of the unknown, doubts about their own abilities, or fear of losing their jobs. These psychological barriers can lead to resistance to change, which in turn can slow down the process of integrating new technologies. To reduce resistance and ensure successful adaptation, it is important to create an environment of open dialogue between management and employees. Management should clearly explain the reasons for the introduction of new technologies, their benefits and impact on work processes. Transparency and regular communication help reduce misunderstandings and fears, contributing to a positive perception of change. An important aspect is the organization of educational programs and trainings that will help employees to master new technologies faster. Professional trainings, support from mentors and the opportunity to get answers to questions reduce uncertainty and stress. Involving employees in the learning process can also increase their motivation and commitment to change. The human factors industry focuses on understanding and managing the human aspects of an organization. It includes techniques for managing resistance, developing an adaptation strategy, improving communications and supporting staff. Effective change management involves taking into account the needs and expectations of employees, implementing measures to increase their involvement and ensure their readiness for new working conditions. With these aspects, the successful implementation of new technologies in IT companies requires a strategic approach to human factor management. Involvement of employees in the process of change, providing their support and training are critical for achieving positive results and maintaining the efficiency of the company's work in conditions of constant technological innovation.

Summarizing the above, several potential negative consequences of implementing innovative technologies in IT companies can be identified, along with corresponding recommendations for their minimization (table 1).

Table 1

Possible negative consequences from the introduction of innovative technologies in IT companies

A negative consequence	Description	Recommendations for minimizing risks
Data breach	It can lead to financial losses, fines and a decrease in the company's reputation. For example, a leak of confidential customer information can cause massive customer churn and reduced brand trust.	1. Implement reliable data protection systems. 2. Conduct regular security audits. 3. Train employees in safe information management.
Algorithm errors	Incorrect analysis results can reduce the effectiveness of marketing campaigns, leading to a decrease in ROI and financial losses.	1. Test new algorithms on small samples of data before implementation. 2. Regularly check the accuracy and efficiency of algorithms.
Low return on investment	The high costs of implementing new technologies are not always justified by the results obtained, which may lead to a reduction in the budget for innovation in the future.	1. Regularly analyze the ROI of new technologies. 2. Evaluate the results and adjust strategies according to the received data.
Complexity of integration	Integrating new technologies with existing systems can be difficult and costly, which can delay the implementation of projects.	1. Develop detailed integration plans with stages, timelines and resources. 2. Pay attention to testing and setting up new systems.
Resistance to change	Failure to adopt new technologies or work methods can reduce productivity and affect the atmosphere in the company.	1. Create an open dialogue between management and employees. 2. Organize educational programs for adaptation to new conditions. 3. Implement changes gradually.

*Source: generated by the author*

However, for a successful transition to new technologies, it is important not only to take into account the possible risks, but also to focus on the promising directions of development that these technologies open.

In the near future, the marketing of IT companies will undergo significant changes under the influence of new technologies, which can significantly transform approaches to interaction with customers and business process management. Artificial intelligence

(AI) and machine learning (ML) technologies will continue to influence marketing strategies, enabling companies to more effectively analyze large volumes of data to uncover patterns in consumer behavior. This creates opportunities for the development of personalized campaigns that increase the effectiveness of communication with customers and reduce advertising costs [20, 21].

Virtual reality (VR) and augmented reality (AR) open new horizons for creating interactive experiences. IT companies can use these technologies for virtual demonstrations of products, allowing customers to "try on" them before buying. This not only increases the level of engagement, but also increases the level of customer satisfaction [20].

The Internet of Things (IoT) enables real-time data collection about product usage. This provides an opportunity to better understand the needs of customers and optimize marketing campaigns in accordance with the received data, which ensures more accurate and effective targeting of offers [21].

The introduction of 5G technology will provide faster access to data and reduce delays, which will allow for more complex and interactive marketing campaigns, including high-quality video and AR/VR content. This opens up new opportunities for content creation and provides a faster and more efficient response to customer needs [20].

Automation of marketing processes will also become an important direction of development. Automating routine tasks such as managing campaigns and analyzing results can reduce costs and improve efficiency. This allows you to focus on strategic development and innovation that can significantly increase the competitiveness of companies [21].

To successfully work with new technologies, marketers must possess the following competencies:

- analytical skills: ability to analyze data and use analytical tools.
- technical knowledge: understanding of core technologies such as AI, ML, IoT, VR and AR.
- creativity: the ability to generate new ideas and approaches to marketing.
- flexibility and adaptability: the ability to quickly respond to changes in technology and market conditions.

In addition to the mentioned competencies, successful marketers of the future will also possess well-developed emotional intelligence skills. Understanding consumers on a deeper level will help leverage technology more effectively to create a personalized experience. While technologies are powerful, they cannot fully replace the human touch and a marketer's ability to sense what the audience truly needs. This ability to connect analytics with intuition will be essential for building long-term and meaningful relationships with customers.

Thus, the introduction of new technologies such as AI, VR, IoT and 5G creates significant opportunities for the development of innovative marketing strategies. The integration of these technologies will allow IT companies to increase the effectiveness of their campaigns, create new interactive experiences for customers and better adapt to changes in the market environment. It is important not only to take into account the possible risks, but also to focus on the promising directions of development that these technologies open up, in order to achieve success in the conditions of digitalization of the economy.

The digitalization of the economy and the introduction of the latest technologies, such as artificial intelligence (AI), machine learning (ML), big data, virtual reality (VR) and augmented reality (AR), are fundamentally changing the approaches to marketing management in IT companies. These innovative technologies open up new opportunities for creating personalized marketing campaigns, which significantly improves interaction with customers and allows for optimization of strategies. Thanks to such technologies, companies can analyze data more effectively, better understand consumer needs and adapt their offers in real time.

The efficiency of using innovative technologies in marketing is confirmed by the growth of traffic, conversions and ROI. This allows IT companies not only to maintain their competitiveness, but also to dominate the market. Innovative approaches allow you to achieve significant results and maintain a high level of customer engagement.

At the same time, rapid changes in technology are accompanied by certain challenges and risks. For example, data leaks or algorithm errors can lead to financial losses and a decline in the company's reputation. A low return on investment in new technologies can reduce the budget for innovation and reduce investments in the future. Thus, it is important not only to implement the latest technologies, but also to carefully analyze and minimize the risks associated with them.

Case analysis of successful IT companies shows that the proper use of technologies, effective personalization, automation of processes and competent integration of new solutions are key success factors. Successful companies demonstrate how innovative approaches can significantly improve the effectiveness of marketing campaigns and ensure success in the digital age.

The prospects for the development of marketing in IT companies will be determined by new technologies such as 5G, IoT and AR/VR. These innovations open up new opportunities for interaction with customers and optimization of business processes. To successfully implement and execute innovative strategies, marketers must adapt to rapidly changing conditions, developing relevant skills and competencies such as flexibility, creativity and analytical abilities.

Thus, the transformation of marketing strategies under the influence of rapid technological changes is key to ensuring the competitiveness of IT companies.



Adapting to new conditions will require flexibility, creativity and analytical skills from marketers, as well as constant monitoring and assessment of the impact of new technologies on business processes.

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# **THE IMPACT OF INDUSTRY 5.0 ON THE TRANSFORMATION OF MARKETING**

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The next stage in the evolution of modern technology is Industry 5.0, which emerges from transformations brought about by previous industrial revolutions. While Industry 4.0 focused on digitalization, automation, and the integration of innovative solutions such as the Internet of Things (IoT) and Artificial Intelligence (AI), Industry 5.0 centers on human needs and values. This paradigm shift demands businesses adapt to new conditions, revising their strategies and focusing on ecological, ethical aspects and social responsibility.

The study of Industry 5.0 is becoming increasingly relevant for modern business and society due to the rapid development of technology, which not only opens up new possibilities but also generates numerous challenges. Technological advances, especially in automation and innovative solutions, significantly improve productivity, reduce production costs, and ensure better quality of goods and services. However, alongside these benefits, new challenges arise.

One of the main challenges is the threat of mass automation, which could lead to significant job losses. Additionally, while technological development brings economic benefits, it may exacerbate social inequality. Those who have access to and can use new technologies gain a substantial advantage, while others may be left on the periphery of technological progress.

Attention should also be given to the environmental impact of technological development. Although many new technologies can reduce resource consumption and improve energy efficiency, the production and disposal of electronic devices and automated systems often lead to environmental pollution. As such, companies need to assume responsibility for the environmental consequences of their activities.

These challenges require businesses to rethink their strategies, especially in marketing. In the current economy, traditional marketing approaches focused solely on

sales and profits are no longer effective. Instead, ethics and social responsibility have come to the forefront. Companies should emphasize the implementation of socially responsible practices in their marketing strategies, considering ethical standards, sustainable development, and addressing social issues.

Thus, the impact of Industry 5.0 on marketing encourages the use of innovative product promotion methods, helping to establish a sustainable corporate image capable of addressing modern social and environmental challenges. For this reason, it is advisable for today's companies to ensure an optimal balance between technological innovations and their impact on society, thereby ensuring sustainable development and social justice.

The impact of Industry 5.0 on marketing transformation represents a significant evolution in how companies understand and interact with their customers. Unlike Industry 4.0, which emphasized automation and efficiency [9], Industry 5.0 introduces a human-centered approach [5], integrating technology with human creativity and ethical considerations to enhance customer relationships and product personalization. This shift is highlighted by new approaches in manufacturing, as noted by Smith, J. [4] and Klochkov, V. [1]. Tarasenko, I. [2] underscores the need to apply sustainable development principles not only to general business practices but also to marketing.

The circular economy also plays a vital role in marketing transformation [10], as it promotes zero-waste production and marketing programs for recycled goods [11]. Industry 5.0 aligns with the ethical use of technology, which in marketing means prioritizing transparency in data processing, respecting user privacy, and strengthening consumer trust. For instance, blockchain technology can increase transparency by allowing customers to track a product's journey from source to shelf [12]. Similar approaches are discussed in studies by Petrov, O. [3]. Ethical AI also ensures that personalized recommendations are not intrusive and respect consumer boundaries [6].

Industry 5.0 aligns with sustainable development goals [2], which are increasingly important for modern consumers. Marketers can leverage digital tools to promote eco-friendly products and more effectively spread sustainability initiatives. For example, virtual reality (VR) can provide immersive experiences that showcase sustainable practices in supply chains, and AI can optimize ad targeting to reduce unnecessary consumption.

The implementation of Industry 4.0 and 5.0 technologies significantly transforms marketing strategies. Through automation, robotics, and the use of artificial intelligence, companies can greatly enhance the personalization of customer interactions. For example, the studies by **Smith [4]** and **Grigore & Muresan D [5]** emphasize the importance of integrating the human factor into production processes, which also shifts the marketing approach: the focus moves towards emotional connection and addressing individual customer needs in real time.

It is also important to highlight the necessity of applying blockchain technology. As noted by **Petrov O [3]** and **Saberi et al. [12]**, this can become a revolutionary tool for building transparency and trust between the brand and the consumer. Thanks to decentralized data storage, companies can provide customers with access to reliable information about product origins, ethical production practices, and environmental impact. This fosters customer loyalty and creates more sustainable marketing practices.

The works of **Geissdoerfer et al. [10]** and **Stahel [11]** underline that the transition to a circular economy opens new opportunities for green marketing. Brands actively implementing the concept of resource reuse and waste reduction gain competitive advantages due to enhanced environmental responsibility. This drives the creation of new marketing campaigns aimed at raising consumer awareness about sustainable development and ecological innovations.

All these studies encourage a shift in marketing approaches.

In examining the impact of Industry 5.0 on marketing transformation, we have revealed and generalized key connections and patterns between Industry 5.0 and marketing, facilitating the application of innovative product promotion methods and the formation of a sustainable company image. The study employs scientific methods, including analysis and synthesis, to explore the historical origins of Industry 5.0 and systematize its main characteristics. Deductive and inductive methods help clarify the causal relationships between fundamental marketing components and modern approaches that address social and environmental challenges, reshaping marketing. This approach ensures the integrity and scientific validity of the theoretical conclusions regarding Industry 5.0's impact on marketing transformation, forming the basis for further experimental and practical research.

The essence of Industry 5.0 lies in integrating high-tech solutions with human values and needs, focusing more on the personalization of production processes and enhancing the human role in interaction with technology. This contrasts with Industry 4.0, which aimed at maximum automation and replacement of human labor with machines. In Industry 5.0, humans are not seen as replaceable elements but as integral parts of a system working synergistically with robotics and other advanced technologies.

The historical context of industrial revolutions is presented in Table 1.

The transition to Industry 5.0 is driven by new challenges faced by society and businesses in the context of globalization, environmental changes, and the growing need for ethical business practices. Industry 5.0 emphasizes sustainable development and heightened social responsibility. A key aspect of this phase is the increasing role of socially responsible marketing, which not only aims to promote products and services but also responds to challenges related to environmental issues, ethics, and social justice.

Marketing transformation within the Industry 5.0 framework involves adopting approaches that consider the interests of all stakeholders, including consumers, employees, communities, and the environment. This means companies should base their strategies on sustainable development principles, enhancing transparency in their actions and actively involving consumers in addressing global issues.

Thus, the development of Industry 5.0 and its impact on marketing transformation requires companies not only to implement new technologies but also to actively engage in social responsibility processes. Successfully combining technological innovations with ethical standards and societal interests can be key to the sustainable development of both business and society in this new industrial era.

Table 1

Historical Aspect of the Origin of Industry 5.0

Title	Period	Main approaches	Results
Industry 1.0	At the end of XVIII century	The use of steam engines and mechanical devices	Mechanization of production
Industry 2.0	The middle of XIX century	Mass production and electification	Increase in production capacity, expansion of scalability
Industry 3.0	The middle of XX century	The use of computers and automation of production	Reduction of the need for manual labor and improvement of the accuracy of production processes
Industry 4.0	The beginning of XXI century	Implementation of modern digital technologies: Artificial Intelligence, Big Data, Internet of Things and cloud computing	Active implementation of innovations, production optimization, supply chain management and improvement of customer interaction
Industry 5.0.		Solving social problems	Application of the components of sustainable development concept

*\*Systematized by the authors*

Industry 5.0 represents a new phase in industrial development, focused on integrating technology with human values. This phenomenon responds to the challenges posed by Industry 4.0, which primarily emphasized the automation and digitalization of production processes. The main characteristics of Industry 5.0 include:

1. Human-Centricity is one of the core attributes of Industry 5.0. This means that technologies are designed and implemented with a focus on human needs and well-being. The interaction between humans and machines reaches a new level, where humans become active participants in the production process rather than mere observers. This creates conditions for improving workflows, reducing risks, and enhancing product quality [1]. A human-centric approach leverages advanced

technologies to analyze customer needs and behaviors, allowing companies to create products that meet individual demands. For instance, companies use artificial intelligence to predict customers' future needs and make real-time recommendations based on their behavioral patterns.

2. Harmony between Technology and Human Values. Industry 5.0 aims to balance emerging technologies with traditional human values. It includes using artificial intelligence and automation combined with ethical principles, enabling businesses not only to improve productivity but also to enhance consumer trust, as customers increasingly value social responsibility in brands [2].

3. Creating Socially-Oriented Solutions. An essential aspect of Industry 5.0 is developing solutions that account for both consumer needs and the broader social needs of society. This means companies should not only focus on profit but also consider the impact of their actions on society and the environment. Such approaches help form new business models that emphasize social responsibility [3].

The relationship between Industry 5.0 and modern marketing is highlighted in Figure 1. The main key technologies that define Industry 5.0 and have a close connection with marketing include:

- Integration of Robotics and Artificial Intelligence (AI) with Human Activity creates new production opportunities. Cobots (collaborative robots) work alongside humans, handling routine and hazardous tasks, allowing people to focus on more complex and creative aspects of work [4].

- Use of Biomimetics. Biomimetics, or learning from nature, has become an important tool for developing innovative solutions in Industry 5.0. It allows companies to draw inspiration from natural processes to create more efficient and sustainable technologies [5].

- Personalization is another key aspect of Industry 5.0. With the help of modern technologies, companies can create products tailored to specific consumer needs. This may include custom product adjustments, enhancing customer satisfaction and brand loyalty [1].

- Blockchain Technology provides transparency and ethics in production processes. It enables tracking of raw material origins and compliance monitoring, which boosts consumer trust in products and services [3].



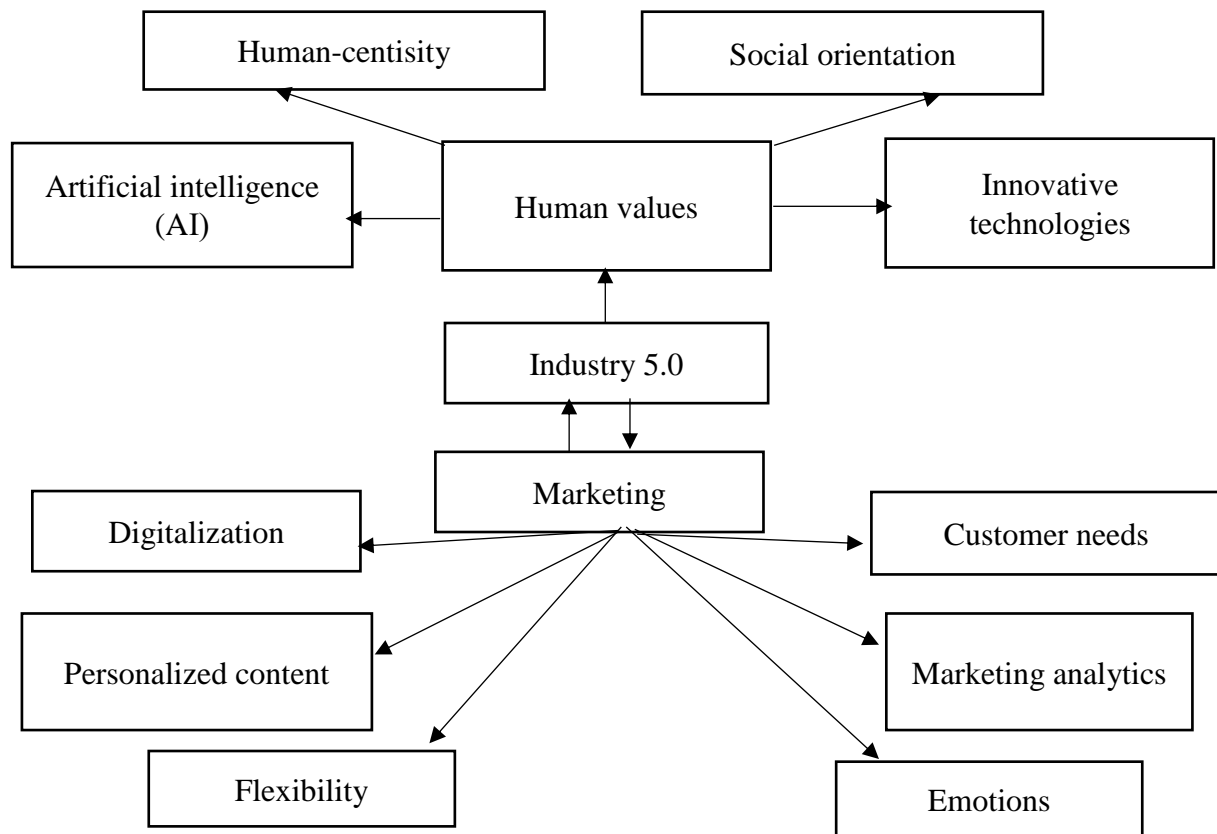


Fig. 1. The Relationship between Industry 5.0 and Modern Marketing

Sustainable Development is becoming a central element of Industry 5.0, emphasizing the need to balance economic benefits with environmental stability and socially responsible marketing. In today's world, businesses face the need to optimize their processes considering environmental and social factors. This involves not only reducing emissions and conserving resources but also actively participating in social initiatives. For instance, companies may invest in environmental projects or participate in educational programs in their communities [2].

Undoubtedly, Industry 5.0 supports sustainable production practices\*\* that use resources more efficiently and reduce waste. This includes implementing circular economic models, where waste from one process becomes raw material for another. In this way, companies can reduce their carbon footprint and enhance their social responsibility [4].

Artificial Intelligence opens up new possibilities for improving marketing due to its ability to analyze large data volumes, make decisions quickly, and offer innovative solutions across various activities. In marketing, AI helps automate routine tasks and process extensive amounts of market research data, allowing employees to focus on creative and strategic tasks [6].

In marketing, AI allows not only for automation but also for making processes more adaptive and intuitive. For instance, AI can manage the launch of advertising

campaigns. Such AI integration reduces marketers' workload, creating more comfortable working conditions [7].

Industry 5.0 also includes the development of cooperation between humans and robots, particularly through the use of cobots—collaborative robots that can work alongside people, complementing their labor and reducing physical strain. Cobots create new opportunities for flexible interaction between humans and robots in production. They can perform heavy, repetitive, or health-hazardous tasks while humans focus on controlling and managing the process. For instance, in the automotive industry, cobots assist in assembling cars, alleviating physical strain on workers while maintaining human oversight at every stage.

One of the main advantages of cobots is the reduction of physical exertion for workers. They help minimize the risk of injury in production and enhance overall productivity. Additionally, cobots allow for the optimization of time and resource use, as they can operate continuously and in challenging conditions. This enables companies to achieve better results at lower costs.

Industry 5.0 undoubtedly emphasizes the importance of sustainable development and minimizing negative environmental impacts. This is achieved through innovative technologies that optimize resource use and promote energy efficiency.

Sustainable development is becoming a priority for many manufacturing sectors as attention to environmental standards grows. The use of new materials and innovative technologies helps reduce carbon emissions and production waste.

Moreover, energy efficiency and the use of renewable energy sources are key factors in sustainable development within Industry 5.0. Solar and wind energy, as well as the implementation of a circular economy that emphasizes the reuse of materials and waste, help minimize environmental impact and ensure the long-term viability of production systems. This contributes to the creation of new economic models based on resource conservation and ecological responsibility.

Industry 5.0 also focuses on creating an ethical and transparent economy, where technologies allow for tracking the origin of products and ensuring compliance with ethical production standards.

For example, blockchain technologies play a significant role in establishing transparent production processes. They enable tracking of every stage of product manufacturing—from raw materials to the final consumer. This ensures that products meet ethical standards and allows consumers to be confident in the quality and safety of the goods they purchase.

By implementing new technologies, companies can not only enhance their productivity but also make their processes more transparent and adhere to ethical standards. This entails a responsible attitude toward employees, compliance with social standards, and ensuring safe working conditions. Such an approach fosters trust

between consumers and producers and ensures the sustainability of economic development

Thus, Industry 5.0 has become a new milestone in the evolution of the economy and technology, combining the latest advancements in artificial intelligence, automation, and human-machine interaction. However, unlike Industry 4.0, which focused on automation and digitization, Industry 5.0 emphasizes human-centricity and sustainable development. These changes radically transform socially responsible marketing, requiring businesses to adopt new approaches to consumer interaction, enhancing transparency, personalization, and ethical marketing strategies.

Industry 5.0 entails closer interaction between technologies and people, where the key factor for success is a business's ability to meet individual consumer needs. Traditional mass production and marketing models, based on the standardization of goods, are gradually being sidelined. In the new environment, the focus shifts to creating personalized solutions that align with specific consumer expectations.

In today's world, responsible marketing has ceased to be merely a nominal activity and has become an important factor in competitiveness. Consumers increasingly prefer companies that actively implement environmental, social, and ethical practices. According to Deloitte research, 55% of consumers are willing to pay more for products from companies that adhere to sustainable development principles.

Responsible marketing is also a vital tool for attracting new customers and retaining the loyalty of existing ones. Companies that employ socially responsible practices demonstrate their concern for the environment and society, which strengthens their brand and increases consumer trust.

Another key trend in the marketing world is the concept of sustainable development, impacting consumer expectations. Customers increasingly favor products and services that do not harm the environment, support social justice, and contribute to economic stability. According to Nielsen research, 73% of consumers are willing to change their habits to reduce their negative impact on nature.

Sustainable development is not only an ethical obligation but also a new standard for business. Companies that can respond to these demands gain a competitive advantage, while those who ignore these trends risk losing customer trust.

It is worth noting that artificial intelligence technologies have opened new opportunities for personalizing marketing campaigns. By utilizing large datasets about customers, businesses can create tailored offers that best meet consumer needs. This includes personalizing advertising messages, adapting product offerings to customer interests, and implementing individualized loyalty programs.

Such approaches significantly enhance the effectiveness of marketing campaigns, as consumers receive offers that are relevant to them. For example, Amazon actively

uses machine learning algorithms to analyze customer purchase history and generate personalized recommendations, which increases sales levels.

In light of the above, it is important to say that personalized content is a crucial component of a successful marketing strategy in the context of Industry 5.0.

Through data analysis, companies can create content that aligns with the interests of each customer, which enhances their level of engagement. Research shows that personalized advertising campaigns have a 20% higher effectiveness compared to standard approaches.

It is worth noting that one of the key technologies that contribute to increasing trust in marketing processes is blockchain. This technology ensures transparency and reliability of information regarding the origins of goods and services. Consumers can verify supply chains, which increases their trust in brands, especially when it comes to environmental or ethical aspects of production. In this sense, transparency has become a vital component of successful customer interaction. Technologies such as artificial intelligence and blockchain enable businesses to track and provide consumers with clear information about all stages of production, delivery, and disposal of goods. Companies that openly communicate their processes gain greater trust from consumers, which in turn fosters long-term customer loyalty.

We should also not forget that ethical marketing, aimed at meeting customer needs without violating the rights of other market participants or the environment, has become an important tool for building long-term relationships with consumers. Companies that adhere to ethical principles often enjoy greater customer loyalty and a better reputation in the market. Marketing strategies must consider the principles of ethics, especially in the context of Industry 5.0. This includes transparency, responsible resource use, consumer rights protection, and promoting sustainable development. Ethical marketing not only shapes a positive brand image but also creates competitive advantages in the market.

However, Industry 5.0 also faces challenges in implementing new technologies. This includes the need for training personnel to work with new technologies. One of the key challenges in the implementation of Industry 5.0 is the shortage of qualified personnel capable of working with cutting-edge technologies such as artificial intelligence (AI) and robotics. Businesses face the necessity of training employees so they can effectively utilize modern technological solutions in marketing. According to research by McKinsey, about 60% of companies believe that skill gaps among workers are a major barrier to the adoption of digital technologies.

There are also issues of data security and privacy, as the development of Industry 5.0 leads to an increase in the volume of data used in marketing campaigns for personalizing offers. This exacerbates the issue of protecting personal data and ensuring privacy. Although technologies like blockchain can help enhance data

security, many companies still face problems with information leaks and unauthorized access to consumers' personal data.

Another challenge is the psychological impact and ethical issues related to the use of artificial intelligence and robotics in marketing. The use of AI to analyze consumer behavior and predict their actions can raise concerns about manipulation or intrusion into privacy. Some consumers express worry that companies use their personal data without proper notification, which can lead to distrust in brands. This raises questions about the ethics of using new technologies in marketing.

Industry 5.0 opens up opportunities for creating new models of collaboration between businesses and consumers. By utilizing personalized solutions and integrating AI, companies can better understand the needs of their customers and offer individualized solutions. For example, brands are increasingly using interactive platforms and virtual reality technologies to engage customers in the product or service creation process. This fosters greater consumer engagement and strengthens their loyalty to the brand.

It is also worth mentioning that one of the key prospects of Industry 5.0 is the support of sustainable development and the implementation of ecological innovations. Modern technologies allow businesses to optimize their processes, reducing carbon emissions, resource consumption, and negative environmental impact. The adoption of "green" technologies, such as renewable energy sources or waste recycling, contributes to enhancing the social responsibility of businesses and improving their reputation in the market. This, in turn, sets the tone for global trends such as the growing attention to environmental issues, social responsibility, and ethical consumption, significantly impacting the development of socially responsible marketing.

Companies are compelled to adapt their marketing strategies to meet the new demands of consumers, who are increasingly interested in how products or services affect the environment and society. Consumers demand transparency, ethics, and responsible resource management from businesses and place a higher value on companies that operate with consideration for social interests.

The transformation of marketing under the influence of Industry 5.0 is changing traditional models of interaction between businesses and consumers. Industry 5.0 represents the next step in technological development, where humans and technology coexist harmoniously. Human-centricity, artificial intelligence, cobots, and sustainable development technologies create new opportunities for enhancing marketing efforts, increasing production efficiency, and minimizing negative environmental impact. Through transparent and ethical production standards, Industry 5.0 fosters the creation of new economic models based on responsibility and sustainability.

Industry 5.0 also represents a new era of technological development that focuses on integrating humans and artificial intelligence. This is not merely an evolution from

Industry 4.0, which was oriented toward automation and digitization of production processes, but also a new approach that prioritizes personalization, human-centricity, and social responsibility in business. The main components of Industry 5.0 include the application of artificial intelligence for personalizing products and services, robotics for automating routine processes, and interactive technologies that allow businesses to gain a deeper understanding of their customers' needs.

A crucial element of Industry 5.0 is the use of big data, which provides businesses with the ability to analyze customer behavior and create individual solutions to meet the needs of each consumer. Another key element is the development of blockchain, which enhances transparency and trust between businesses and consumers. Moreover, Industry 5.0 emphasizes sustainable development, meaning the active use of ecological innovations and ethical principles in production and marketing processes.

The transformation of marketing under the influence of Industry 5.0 is significant. Personalization has become one of the most important strategies in modern marketing, as it allows businesses to better meet customer needs and build long-term relationships. With new technologies such as artificial intelligence and machine learning, companies can analyze customer preferences in detail and develop individualized marketing offers. This increases consumer satisfaction while also fostering their loyalty to the brand.

It is also important to note that standards of transparency have changed under the influence of new technologies. The use of blockchain and other technologies enables companies to be more open about the origins of their products and the ethical nature of their production processes, which enhances consumer trust. The growing attention to social and environmental issues also drives companies to adapt their strategies in line with consumer demands for sustainability and social responsibility.

Industry 5.0 stimulates the emergence of new approaches to customer collaboration, creating opportunities for more interactive and ethical marketing. Technologies such as virtual reality and augmented reality allow brands to create innovative ways to engage consumers in the production process or product selection.

As Industry 5.0 continues to evolve, marketing strategies will increasingly transform toward greater personalization and deeper understanding of customer needs. The use of AI and big data will enable companies to more accurately predict customer needs, offer individualized solutions, and enhance the effectiveness of communication campaigns. This will lead to even greater growth in personalized marketing, allowing businesses not only to attract new customers but also to retain existing ones more effectively.

Given the importance of sustainable development and environmental responsibility, marketing strategies will increasingly focus on business ethics. Companies that prioritize transparency in their processes, the use of ecological

innovations, and responsible resource consumption will have a competitive advantage. Consumers are becoming more demanding regarding the environmental and social responsibility of companies, and brands that meet these demands will be able to strengthen their reputation in the market.

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## **MARKETING FEATURES OF INNOVATIVE COMPANIES INTERNAL STARTUPS**

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In today's dynamic business environment, companies are increasingly confronted with the necessity to adapt to changes and seek new sources of growth rapidly. One effective tool for achieving these goals is the creation of internal startups. Internal startups are increasingly significant as key drivers of innovation and contributors to corporate agility. They enable large organizations to introduce new products and services by leveraging the benefits of startup culture—speed, adaptability, and customer-centricity. On one hand, internal startups benefit from the resources, infrastructure, and reputation of the parent company, expediting their market entry. On the other, they maintain flexibility and the ability to quickly respond to market demands, which is essential for effective innovation. The study of internal startups offers valuable insights into how large companies can balance corporate stability with the flexibility and innovation needed for sustainable growth.

The concept of intrapreneurship, which involves encouraging innovative ideas within a company and providing resources for their implementation, is gaining widespread popularity. Major companies, such as Google, Apple, and Amazon, actively employ this approach to develop new products and services.

Internal startups can play a significant role in fostering innovation and enhancing a company's competitiveness. At the same time, Ukrainian companies, such as Uklon and Monobank, illustrate that intrapreneurship can be successfully implemented domestically. This study aims to define the concept of “internal startups,” analyze their creation, identify distinctions from external startups, uncover key success factors, and investigate their marketing. It also seeks to develop recommendations for effectively managing internal startups within companies.

A considerable number of foreign scholars have explored the concept of “internal startups.” This concept encompasses a broad range of approaches and methods designed to bring innovations to market. Among the scholars who have examined or developed concepts of marketing strategies for startups, notable contributors include Slater, S. F. [1], Jaworski, B. J. [2], Birkinshaw, J., and Gibson, C. B. [3], among others. These scholars have played a pivotal role in shaping and advancing modern marketing approaches for the establishment and growth of new enterprises.

Henry Chesbrough explained open innovation as an approach where companies leverage both internal and external ideas to develop new products and services [4]. Robert Wolmuth, focusing his research on innovation and entrepreneurial spirit within large corporations, emphasized the role of marketing in promoting internal startups [5]. Paul Trott described various theoretical approaches and practical models that can be applied to internal startups [6]. These scholars have made significant contributions to the understanding of internal startups and their marketing strategies, offering ideas and frameworks that are particularly valuable for building business in today’s world.

However, the concept of internal startups has received insufficient attention in domestic scientific literature. Most studies do not emphasize the specific aspects of marketing development for internal startups. Our objective is to explore the theoretical foundations underlying internal startups, to examine the application of key marketing tools, and to analyze the concept of internal startups, distinguishing them from external startups, as well as to identify the characteristics of marketing strategies applied in this context.

We selected Amazon Web Services as one of the most successful examples of internal startups and its approach to implementing marketing strategies. Large corporations, burdened by bureaucratic internal processes and a desire to minimize risk, often become inflexible and lose the capacity for innovation. As a result, they face a real threat of being outpaced by younger, more innovative companies that start to set technological trends in the field. Consequently, these corporations experience a strong need to intensify innovation by establishing a continuous process of idea generation and implementation.

To understand this approach, it is important first to clarify what an internal startup is and why such initiatives are created. Many examples exist of innovative startups formed within companies, which later achieved significant success, sometimes even surpassing their parent companies.

An internal startup is an innovative project developed within a large company but operates with a degree of autonomy, similar to an independent startup. Its purpose is to introduce new products, technologies, or business models that can quickly adapt to market changes and customer needs. Leveraging the parent company’s resources, internal startups can accelerate their market entry while maintaining flexibility and

agility in decision-making, thus promoting innovation and enhancing the company's competitive edge.

In essence, a startup within a company mirrors the independent startup spirit: a group of entrepreneurs aiming to improve the world with new ideas and inventions [7]. In our view, an internal startup is an initiative within a large company aimed at developing and launching innovative products or services. It differs from external startups in that it has access to the parent company's resources while still maintaining a degree of autonomy.

Key features of internal startups:

- Affiliation with a large company: internal startups are part of an established organization.
- Access to resources: internal startups have access to the financial, human, and material resources of the parent company.
- Innovation focus: the primary goal of internal startups is the development of new products or services.
- Market orientation: internal startups aim to meet customer needs and generate profit.

The main reasons why large companies establish internal startups are illustrated in Figure 1.

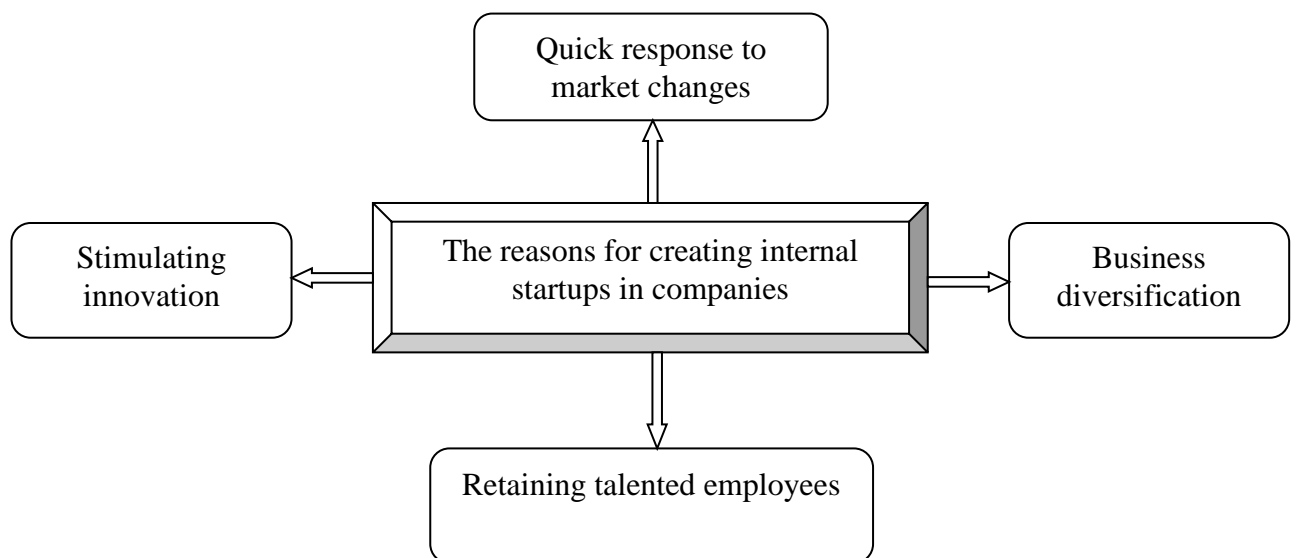


Fig. 1. The main reasons for creating internal startups in companies

There are several pathways to creating internal startups within a company:

1. Development of a new product by the R&D and innovation department: this approach involves the formalized creation of innovative products within a company's established structures.

2. Idea generation by initiative employees: here, individuals within the company generate a startup idea and possess the potential to realize it.

3. Acquisition of existing startups: companies may acquire startups on the market to integrate their innovations and talent.

In the process of innovation development, companies employ various models for implementing innovations, some of which are especially important in understanding how internal startups can be integrated into business processes:

1. Open innovation model.

The concept of open innovation, proposed by Henry Chesbrough, suggests that companies should utilize both internal and external ideas to develop their innovative products and processes. This approach enables companies to discover new opportunities by engaging external resources and partners. Internal startups with access to external knowledge and markets can substantially enhance the company's innovation potential [4].

2. Corporate venture funds.

Some companies establish their own venture funds to finance both internal and external startups. Corporate venture funds support the creation of new products or technologies that can be incorporated into the company's operations. These investments also mitigate the risks associated with innovation, as companies can invest in multiple projects simultaneously, diversifying their risks.

3. Incubators and accelerators.

Large companies often establish innovation incubators or accelerators to support internal startups. These are specialized programs that offer teams access to resources, expertise, and funding for developing innovative ideas. Internal startups within such programs can operate independently from the core business, allowing them to adapt more rapidly to market conditions and focus on their specific strategies.

Corporate Entrepreneurship, or Intrapreneurship, refers to the process of creating new business units or startups within an existing company. This allows large corporations to act with the flexibility and speed of independent startups while benefiting from the resources and capabilities of a larger organization. The main targets of corporate entrepreneurship strategies include:

1. Autonomous startups: independent internal divisions that operate as separate companies with their own management teams and processes, yet still leverage the resources of the parent company.

2. Project teams: teams established to develop individual innovative products or solutions, which may later become part of the core business.

3. Innovation labs: specialized company divisions focused exclusively on research and development of innovative products or processes.

In essence, internal startups represent a vision of the future, where entrepreneurship underpins innovation at the level of both companies and entire

nations. Central to this development is the retention of employees within the company who are capable of bringing innovations to market.

The implementation model of an internal startup is shown in Figure 2.

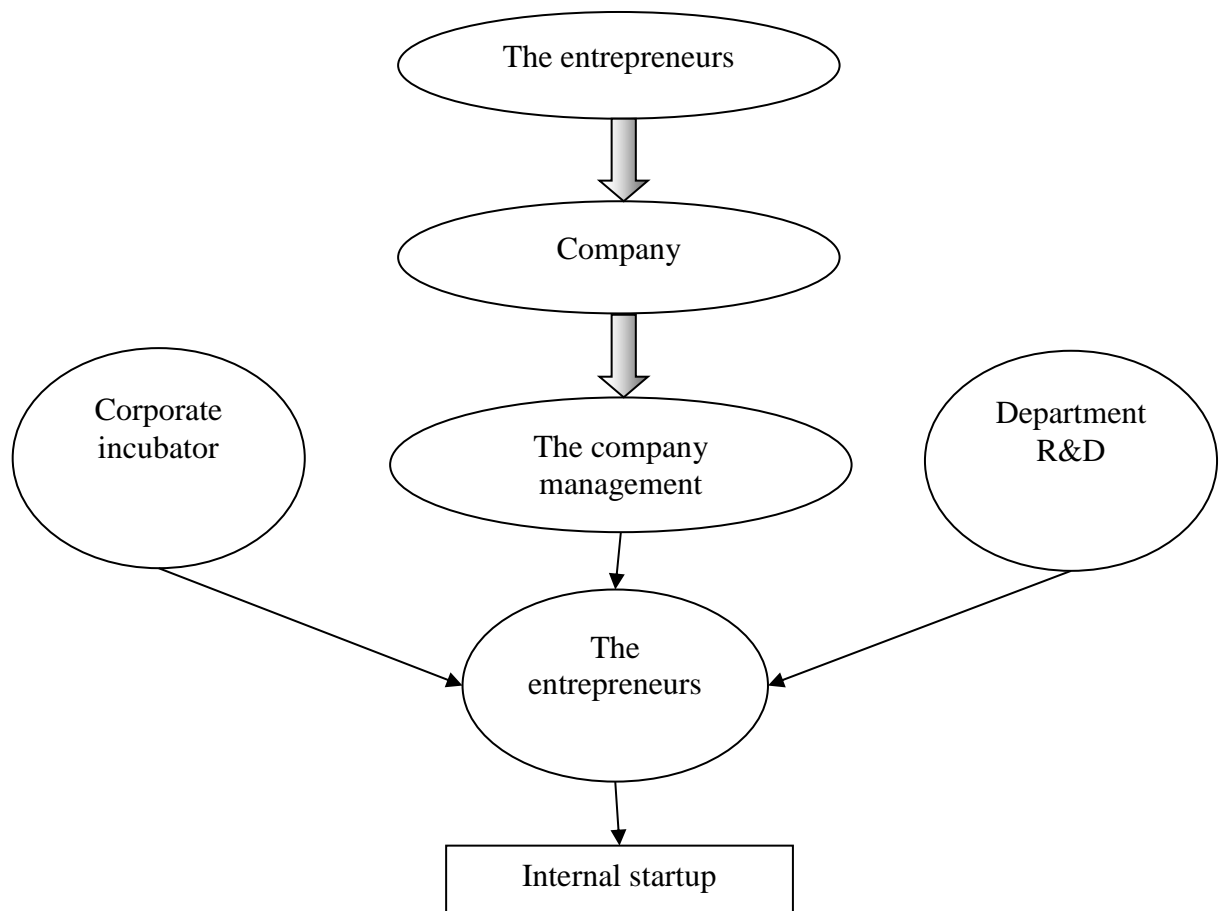


Fig. 2. Scheme of realization of the company's internal startup

Figure 2 illustrates one possible approach to launching an internal startup, highlighting that entrepreneurs play a central role in this process, as their leadership is foundational to the success of these ventures. We can already observe this emerging trend in major companies, such as Google, which has introduced a new corporate initiative allowing any employee to work on their own startup, collaboratively with colleagues, without leaving their current position.

According to Business Insider, this move addresses the high number of employees leaving Google to pursue their own projects externally [5].

The new initiative effectively “kills two birds with one stone”—allowing employees to continue their careers at Google while working on personal projects alongside their colleagues.

This program differs from the well-known "20% Project", which gives each employee the right to dedicate 20% of their time to individual development projects. Teams of around five employees can submit a proposal to their management, and if

approved, they are allocated a separate office space to work exclusively on their new startup.

Google also maintains a program that invests in promising employee-led startups, similar to how the Google Wave project was launched by a dedicated Google team in Australia [8]. The unique advantage of internal startups is their access to a wide array of corporate resources while operating under the auspices of a larger company. This arrangement allows them to focus on core marketing tasks with existing support in other areas.

Marketing for internal startups is a set of strategies and tactics focused on promoting innovative projects developed within large companies. Its aim is to support the growth of the internal startup by attracting customers and strengthening the connection to the parent brand. Through marketing support, internal startups can quickly capture market share, stand out among competitors, and enhance the parent company's reputation as an innovation leader. This enables large corporations to introduce new products and adapt to market changes without compromising their core business.

Internal startup marketing has distinct features, as its objectives and goals often diverge significantly from traditional marketing. Operating within a large company that provides resources and infrastructure, internal startups also face certain corporate constraints.

Key characteristics of internal startup marketing include:

1. Dependence on corporate strategy and resources:

- Internal startups rely heavily on the parent company's resources, including funding, infrastructure, distribution channels, and brand reputation. This access enables them to enter the market faster and gain initial competitive advantages.
- the marketing strategy of an internal startup often must align with the company's overarching strategy, which can limit its innovative flexibility.

2. Experimental approach and idea testing:

- internal startups can test new products or services at low risk, leveraging company resources for market experiments and surveys.
- their marketing strategies are often centered around pilot programs and experimental launches, allowing rapid adjustments to products or marketing campaigns based on consumer feedback.

3. Flexibility and responsiveness to the market:

- due to smaller scale and reduced bureaucracy compared to the parent company, internal startups have greater flexibility in executing marketing campaigns and adapting to market conditions.
- they can quickly alter marketing strategies in response to market dynamics and customer feedback.

#### 4. Leveraging corporate resources to build trust:

- internal startups can utilize the reputation and resources of the parent company to build consumer trust. Products launched by internal startups often benefit from perceived reliability due to their connection with an established company. Additionally, internal startups can engage the company's existing customers for new product or service testing.

5. Synergy between innovation and risk: while the parent company typically absorbs the main risks associated with innovation, the internal startup can adopt riskier and unconventional marketing strategies, often forming the foundation of a unique value proposition. The success of these marketing strategies depends on effective synergy with corporate departments, such as finance, HR, and IT.

Internal startups often encounter internal barriers, such as corporate bureaucracy, budget constraints, or resistance from other departments.

Internal startups within companies can encounter several barriers that hinder their development:

1. Corporate culture: established norms and traditions may limit the flexibility, experimentation, and decisiveness essential for startups.

2. Communication complexity: bureaucracy and multi-layered management can slow decision-making.

3. Limited resources: internal startups often receive insufficient financial or human resources.

4. Resistance to change: some employees may perceive innovation as a threat or unnecessary.

5. Conflict of interests: startup goals may not align with the company's overall strategy, causing internal conflicts.

Table 1 highlights the similarities and differences between the marketing strategies of internal and external startups.

Key advantages of leveraging the parent company's brand:

- Customer trust: the established positive image of the parent company is transferred to the startup, enhancing potential customers' trust.

- Brand recognition: the parent company's brand provides high recognition for the new product, reducing costs associated with establishing a brand from scratch.

- Resource access: the startup gains access to an extensive distribution network, marketing tools, and other resources of the parent company.

- Accelerated market entry: with established contacts and communication channels, the startup can enter the market more rapidly and achieve its objectives.

- Brand synergy: effective integration of the startup brand with the parent company brand can generate synergy, amplifying the overall positive image.

Table 1.

## Comparison of marketing of internal startups and external startups

Feature	Internal startups	External startups
Resources	Access to parent company resources	Limited resources
Risks	Lower risks because they are supported by the company	Higher risks as they depend on investors
Brand	They can use the company's brand	Create your own brand
Focus	Often focused on innovation and development of new markets	Initially, they focus on attracting investment and rapid growth

However, utilizing the parent company's brand also comes with certain considerations:

- Reputation risk: failure of the startup could negatively impact the reputation of the entire brand.

- Brand conflict: if the brands of the startup and the parent company are incompatible, it may lead to confusion and reduce the effectiveness of marketing communications.

- Loss of individuality: excessive integration can result in the startup losing its relevance and ability to stand out in the market.

Key strategies for leveraging the parent company's brand:

- Co-Branding: creating a joint brand that combines elements of both the startup and parent company brands.

- Licensing: granting the startup a license to use the parent company's trademark.

- Endorsement: utilizing well-known figures or thought leaders associated with the parent company to promote the startup.

- Joint marketing campaigns: conducting joint advertising campaigns, events, and promotions.

Amazon Web Services (AWS) is one of the most prominent examples of a successful internal startup that evolved into a global leader in cloud computing.

AWS's success as an internal startup is attributed to key marketing strategies:

- Early recognition of demand: amazon identified the potential of cloud computing as early as the early 2000s, realizing the need for a flexible and scalable infrastructure to meet its own operational requirements. Consequently, the company developed a platform to fulfill these needs.



- Customer-Centric focus: from the outset, AWS was dedicated to addressing customer needs, actively gathering feedback and adjusting its offerings based on these insights.

- Gradual service expansion: AWS began by providing basic computing resources and gradually expanded its service portfolio to include data storage, databases, analytics, and artificial intelligence.

- Flexible pricing model: AWS introduced a flexible pricing model, allowing customers to pay only for the resources they actually use.

- Strong engineering culture: AWS fostered a culture of innovation and experimentation, enabling it to rapidly grow and adapt to market changes.

AWS also benefited from several key advantages due to its parent company:

- Amazon's scale: as part of Amazon, AWS had access to significant financial resources and an extensive customer base.

- Early market entry: AWS was one of the pioneers in cloud computing, securing an early lead in the market.

- Broad service offering: AWS provides the most extensive range of cloud services among providers, making it a versatile solution for numerous applications.

- Ongoing innovation: AWS consistently develops new products and enhances existing ones, maintaining a competitive edge.

Internal startups are projects initiated within large companies to introduce innovations and experiment with new business directions. Here are some examples of well-known companies that use this model:

#### 1. Google – Google X:

Google is known for its innovative approach to development, and one of the most famous examples of an internal startup is Google X (now X, The Moonshot Factory). This specialized division works on developing radically new technologies, such as self-driving cars (Waymo), Google Glass, and projects in biotechnology and energy. The internal startup allows experimenting with risky ideas that could change the future of technology.

#### 2. Facebook – Facebook Labs:

Facebook supports several internal startups through its Facebook Labs program. This division allows engineers and entrepreneurs to test new products, features, and ideas within the social network before they are scaled. For example, Facebook supported projects like Facebook Messenger and Instagram, which were initially independent startups before being acquired by the company.

#### 3. 3M – 3M Innovation Labs:

3M, known for its innovative products (such as Post-it Notes), actively supports internal startups through its innovation labs. Employees can dedicate up to 15% of their

working time to developing their own ideas and projects, which leads to the creation of new products and technologies that the company can use or commercialize.

#### 4. Microsoft – Garage:

The Microsoft Garage department allows employees to create startups and innovative products that could either become new Microsoft products or spin off into independent companies. For example, projects like Microsoft Teams and Microsoft HoloLens started as innovative initiatives within Garage.

These examples show how large companies use internal startups to create new business directions, allowing them to maintain innovation and flexibility even at the peak of their development.

Insights from AWS and other companies and internal startup success:

- Internal startups as growth engines: AWS has shown that internal startups can become new revenue sources and assist the parent company in diversifying its business.
- Customer focus as a priority: meeting customer needs is essential for any business, particularly startups, to ensure sustained growth.
- Innovation as a key to success: companies that continuously seek novel solutions and technologies have a greater likelihood of success.
- Scale as a competitive advantage: large companies benefit from access to resources that allow them to quickly develop new products and enter new markets.
- Non-Traditional marketing for internal startups: effective marketing strategies for internal startups require a blend of innovation, flexibility, and corporate resources. Success in this domain depends largely on harmonizing these strengths with market demands, while also navigating constraints associated with operating within a larger organization.

In summary, we have reviewed various approaches to the formation and implementation of innovations through the creation of internal startups. The main emphasis has been placed on how companies can use internal resources to create innovative products and services, as well as on the importance of market orientation and adaptability in today's business environment.

Internal startups need an environment that encourages experimentation, supports creativity, and facilitates the free exchange of ideas. It is important that the company's leadership fosters a culture that encourages the generation of new ideas and their rapid testing in the marketplace.

Marketing is a key element in ensuring the success of internal startups. Market orientation and understanding of the needs of the target audience allow you to create products that meet consumer expectations and are able to compete with analogs in the market. Speed and flexibility in responding to changes in the market environment are also important.

For the successful development of internal startups, companies should focus on the following criteria

- Developing a clear strategy to support innovation;
- developing special programs for internal entrepreneurship;
- establishing mechanisms for integrating the results of internal startups into the main business.

Despite significant progress in the study of marketing strategies for domestic startups, many open questions remain. These include determining the optimal structure for domestic startups, studying the most effective marketing tools, and examining the impact of corporate culture in detail. Further research could focus on expanding the empirical evidence base and better understanding the long-term impact of domestic startups on a company's market position.

The development of internal startups in large companies is an important tool for ensuring innovation and adaptation to the changing market environment. Internal startups enable companies to effectively leverage existing resources, knowledge, and the experience of their employees, while also fostering a culture of innovation through experimentation and risky ideas. Unlike external startups, which often face challenges in accessing funding and the necessary infrastructure, internal startups can quickly receive support from the parent company, allowing them to implement projects with lower risks and greater chances of success.

Furthermore, internal startups help maintain flexibility and adaptability even at large scales, enabling companies to respond to new technological challenges and business opportunities. They also have the potential to create new business directions that can significantly enhance the company's competitiveness in the global market. As such, internal startups are a crucial tool for the strategic development of companies, ensuring stable growth and long-term sustainability in a rapidly changing world.

Overall, the development of internal startups is a necessary element of innovation strategy in large companies, as it not only helps maintain market leadership but also stimulates creativity and entrepreneurial spirit within the organization.

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## **FULFILLMENT: MODERN LOGISTICS TREND**

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Today's consumers have access to multiple channels to make purchases, such as online stores, mobile apps, social media, and brick-and-mortar stores. Research shows that 73% of consumers express satisfaction with these features. This creates favorable conditions for companies in the field of e-commerce, as multi-channel fulfillment contributes to the expansion of the audience and the growth of sales volumes.

By 2022 fulfillment services were quite popular and were consistently provided to numerous clients of logistics companies. So, in particular, the e-commerce market gradually grew in 2021 as well. amounted to more than 3,506.58 million dollars. After the full-scale invasion, fulfillment in Ukraine was "dying". The first to refuse it were customers who found it difficult to control the circulation of their goods. In the digital format, it fell to \$295.85 million. Fulfillment resumed in mid-2023. Currently, this business continues to grow, its volumes are increasing, and it has a chance to reach the pre-war level. According to static data, its value is 2,671.05 million dollars [ 1,2 ].

There are more clients of contract logistics, but not all logistics are contract. Now there is an increase in the number of companies that sell goods on the Internet. They are the ones most actively interested in fulfillment . Buyers tend to visit stores less, so the demand for this format of logistics is growing.

After the campaigns to block the western borders, everyone wants to have a certain supply of products in warehouses. Otherwise, the goods may simply not have time to arrive within the specified time. Moreover, customers now store goods where it is more convenient for them and from where the "shoulder" of delivery will be smaller. Therefore, there is a need to deploy warehouses not only in the center of Ukraine, but also in the south, east and west of the country [1].

Under these conditions, the problem of adapting the logistics infrastructure to today's conditions, namely the development of warehouses, vehicle fleet capacities and fulfillment centers, is being updated.

The essence and tasks of warehousing logistics, activities of logistics operators, features of fulfillment as a logistics service are reflected in many works of foreign scientists, including Bowersox D., Christopher M., Laysons K., Waters D. [ 3,4,5,6 ]. The researched issues are considered in detail by domestic scientists, in particular, Vakhovska M., Krykavskyi E., Chukhrai N., Shaleva O. [ 7,8,9 ]. At the same time, despite the sufficient development of issues related to warehouse activities, the functioning of various levels of logistics operators, the issue of fulfillment remains

insufficiently researched, because most of the information presented in relation to the researched issues is of the nature of commercial offers on websites in accordance with the activities of logistics operators. In view of this, the problem of research and presentation of theoretical aspects of fulfillment, i.e. its very essence, main components, characteristic features, positive and negative elements of its functioning, is being formed. There is also a need to disclose applied aspects, namely its implementation from the macro level to the level of microfulfillments ( dark stores ) at various business entities.

The research was carried out using the method of secondary data analysis. Literary sources on logistics and supply chain management, the results of modern research covering the issue of fulfillment, reports and analytical reviews of the logistics market of Ukraine, in particular data on the activities of its leading operators, were studied. The following methods were used to process and analyze the collected information:

- critical analysis to study various fulfillment models (in-house, 3PL, dropshipping, cross- docking) and their application in the Ukrainian market.
- a comparative analysis to identify the strengths and weaknesses of various fulfillment models, the possibilities of their adaptation and potential threats.
- analysis of trends to assess the impact of macroeconomic factors, such as war and pandemic, on the development of fulfillment centers in Ukraine.

To confirm the accuracy of the obtained results, a comparison was made with data from foreign sources, which made it possible to assess the level of compliance of Ukrainian fulfillment practices with world standards and identify possible directions for improving logistics services.

Within the framework of the study, the main attention was paid to the conceptual aspects of fulfillment and the analysis of available secondary information. Due to limited access to primary data related to the commercial secrets of logistics operators, the research results may not fully cover all applied aspects and features of internal business processes of fulfillment centers.

The war affected the development of the e-commerce market. As you can see, this segment of the market began to decline at first, and today there is again a clear demonstration that more and more consumers have begun to order goods online. Undoubtedly, some of them came to the site for the so-called window shopping. That is, the visitor comes to the site not for the purchase itself, but to study the product, compare prices, find gift ideas, etc. So, people began to use the online shopping cart as a kind of wish list. Visitors consider the main reasons for their abandoned baskets in the online store [10]:

- *high cost*: buyers "abandon" the online cart due to delivery rates, taxes and fees;

- *long delivery time*: in the new realities, consumers expect that their orders will be delivered in 1-2 days. The speed of delivery becomes a decisive factor when choosing an online store;

- *return policy*: it is important to organize a convenient return process if the product did not suit the buyer. In some online stores, the percentage of returns can reach more than half of the total number of orders.

An abandoned cart is a logistics problem. It can be solved by fulfillment. The logistics provider covers the issue of product storage, order processing and delivery to the final consumer. Thus, the level of customer service increases, loyalty to the retailer increases and, as a result, sales increase. With the help of fulfillment, the online store gets an important competitive advantage, and therefore this option for solving logistics issues is optimal for online retail.

"Fulfillment" is a new word in the logistics of Ukraine, which has no analogues in both the Ukrainian and Russian languages. However, in the global practice of e-commerce, fulfillment as a logistics service has been working for more than two decades, helping to develop trade and increase sales of small stores, as well as large virtual trading platforms [11].

The founder of fulfillment was *Amazon*, a well-known online store in the United States. Over time, the company began to deal with the logistics of other stores. Fulfillment is usually used by companies that send more than 100 orders per month and plan to successfully expand their business in the coming years. It may also be needed by online stores if the turnover is not too high and the level of sales increases during the seasonal period.

Fulfillment (from the English order fulfillment "fulfilment of an order") - a complex of operations with goods from the moment the order is placed by the consumer until it is received. That is, fulfillment is a set of operations for processing orders, which includes storage, assembly, packaging of goods, organization of delivery and work with returns. The terms of shipment and delivery of goods take less time, and the cost of completing an order is lower. Thus, the consequence of working with the operator is an increase in store sales. Fulfillment offers not only logistics services, but also interaction with the buyer, namely order acceptance, consultation (if the operator also provides a call center service) and returns in the event that the consumer refused the purchase. All issues related to receiving goods and shipments are resolved by the warehouse manager. Material responsibility for the loss of goods is borne by the contractor, not the store [12].

If we consider fulfillment as a business process, six stages can be tentatively identified (Table 1).

The target audience of fulfillment is [11]:

Table 1

## Characterization of the main business processes in the application of fulfillment

<b>Business process</b>	<b>Characteristic features</b>
<i>Acceptance of products</i>	The speed and efficiency of the entire chain depends on this stage. For some goods, acceptance is carried out using barcodes. But if there is no such identifier, it is necessary to recognize the product in order to control the availability of the product in the warehouse, while each unit is marked with a unique number. With the help of the WMS system, the weight and dimensions of the product are quickly read. This data speeds up packaging, allows you to immediately calculate the cost of delivery on the website
<i>Features of product storage</i>	The goods are placed in different storage areas of the fulfillment center depending on the type of size and circulation. The long-term storage area can have space for pallets, racks for small goods, etc. When entering in the IT system, the unique number of the product and the address of the cell are entered, which allows you to automatically build a route for assembly
<i>Completing the order</i>	Order data is received from the call center of the online store. WMS binds a specific product to the order a configuration card is formed for the warehouse worker who collects the order. If the product is not available, a letter is generated and sent to the purchasing department. The formed order is sent to the packing area.
<i>Packaging of goods</i>	It is necessary to analyze the assortment sold by the online store and choose the optimal number of standard packaging sizes
<i>Return management</i>	It is necessary to ensure timely processing of returned orders so as not to reduce the pace of warehouse work. It is also possible to collect statistics on the reasons for returns, conduct an examination, organize prompt acceptance of goods into the warehouse for resale

Source: own development based on [12 ]

- *online stores* of any specialization. Exception: medicines, perishable products or packaged by grams, some jewelry and other goods that require special conditions of storage and sale;

- *manufacturers and wholesale suppliers* who work offline and sell their products through a network of online retail stores and real retailers;

- *large exporters and importers* who want to speed up, simplify and reduce the cost of logistics.

The peculiarity of this new logistics service is the comprehensive coverage of all commodity logistics. For manufacturers and wholesale suppliers, this is an alternative to their own warehouse of finished products or a wholesale base, from where the goods are shipped in portions to retailers [11]:



- *the supplier (manufacturer)* is released from the need to maintain a warehouse, warehouse equipment and personnel. He does not need to keep records of a large number of shipments and solve a number of logistical tasks;

- *the retailer (online store)* is confident in the availability of goods in stock and in the speed of delivery. The seller saves on his own warehouse and transportation of goods. He is freed from contact with the buyer on questions about delivery and returns, concentrating all his efforts on marketing and promotion of the product.

That is, the manufacturer concentrates on production and improvement of product quality, the seller improves the marketing strategy, and the fulfillment center perfects the art of logistics.

According to the sales volumes in Table 2, we will consider the necessity of using fulfillment. According to the given figures, it can be argued that with an order volume of more than 100 during the day, it is necessary to use fulfillment, because this leads to significant savings with a significant flow of orders, namely, the rental of warehouse spaces, personnel, and special software. In addition to the above-mentioned costs, there are indirect costs associated with depreciation of warehouse and computer equipment, the cost of storage and return, costs of packaging materials, work with personnel (staff turnover, formation of the necessary number of warehouse workers during peak loads).

Table 2

The expediency of using fulfillment depends on the order quantity

Number of orders, pcs. / day	The need to use fulfillment
less than 50	unprofitable
from 100	expedient
more than 100	necessarily

*Source: own development based on [ 11 ]*

The advantages and disadvantages of fulfillment in Table 3.

Modern buyers have access to numerous product sales channels. However, the presence of multiple sales channels also leads to certain challenges. Sellers must be present where their customers are and provide a high level of service in each of the channels. Given the growing needs of modern consumers, a single presence of a seller on several platforms is not enough today.

Companies should strive to integrate all channels of interaction, giving consumers choice about where, how to buy and the return process. This approach, known as omnichannel, is gaining popularity among retailers who are actively implementing it into their business processes. That is, we will reveal the essence of multi-channel and omni-channel in more detail fulfillment.

Omnichannel fulfillment is a strategy whereby a company provides customers with the opportunity to make purchases through various sales channels, such as online

stores, physical points of sale, mobile applications, social networks, and others. At the same time, each channel processes orders separately, using its own inventory management and customer service system. A key feature of the omnichannel approach is the ability of each channel to provide a unique consumer experience. For example, in physical stores, customers can view the product in person, while online stores offer a wide range and the convenience of paying online. At the same time, managing a multi-channel system causes certain difficulties, in particular, in the aspects of inventory coordination and harmonization of systems between channels. These challenges can lead to an inconsistent customer experience due to misalignment of service processes across channels.

Table 3

Advantages and disadvantages of using fulfillment

Advantages	Disadvantages
<ol style="list-style-type: none"> <li>1. <i>Savings on overhead costs</i> (warehouse rent, personnel payments, equipment, software).</li> <li>2. <i>Simplification and acceleration of order processing</i> when sales volume increases.</li> <li>3. <i>The warehouse stock</i> is sufficient and constant.</li> <li>4. <i>Saving time</i> - instant shipment directly from the warehouse, minimal participation of the owner of the online store in all processes.</li> <li>5. <i>Call-center</i> – customer consultations regarding delivery and product characteristics.</li> <li>6. <i>Access to new markets</i> - fulfillment operators have access to warehouses and distribution networks in different countries</li> <li>7. <i>Risk reduction</i> - insurance services</li> <li>8. <i>Accepting payment and returning money</i> - saving on bank commission.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Lack of free access</i> to the warehouse for the owner of the online store.</li> <li>2. <i>Errors during product assembly</i> due to the staff's ignorance of the specifics of the product composition.</li> <li>3. <i>Difficulties related to document circulation</i> - invoices and other documents are issued once in a certain period (month, quarter).</li> <li>4. <i>Guaranteed payment</i> even with a minimum number of goods in stock (at a fixed rate).</li> <li>5. <i>Depends on the volume of sales</i> - not suitable for small orders and those who need full control over logistics</li> <li>6. <i>Access to information</i> - the need to provide information about orders and customers</li> </ol>

Source: own development based on [ 2,11,13,14 ]

Omnichannel fulfillment is a type of multi-channel strategy aimed at providing a unified and consistent customer experience, regardless of the chosen purchase channel. Unlike the traditional multi-channel approach, in which each channel processes orders autonomously, the omni-channel model combines all channels into a single integrated system. Advantages of omnichannel fulfillment include providing a consistent customer experience, improved inventory management, and increased flexibility in responding to market changes. This strategy allows consumers to start a purchase in one channel and finish it in another, with all data automatically synchronized.

Both multi-channel and omni-channel fulfillment involves the use of several sales channels, which allows companies to expand their customer base and increase the

volume of product sales. However, despite the common goal, there are significant differences between these approaches. Omnichannel fulfillment is mostly product-centric, while omnichannel is customer-centric. The main characteristic of an omnichannel strategy is the centralized management of all channels, which provides an integrated customer experience. In contrast, in the multi-channel model, each channel functions independently, with separate order management and customer service. In addition, omnichannel fulfillment ensures a more active interaction between the client and the brand thanks to a consistent experience across all channels. In the case of a multi-channel strategy, the customer experience on each channel remains different and not always coordinated with others. Thus, the transition to an omnichannel fulfillment model is a complex process that requires significant investments in new technologies and changes in the company's internal processes and corporate culture [ 15 ].

Among the main models of fulfillment, it is advisable to single out the following.

*In-house fulfilment.* In this model, all fulfillment processes are implemented within the company, which ensures the use of own employees and resources to perform tasks such as storage, packaging and shipping of goods. Preferably in-house fulfillment has a sense of complete control over the brand, orders and inventory, which is especially relevant for local customers, as it allows you to effectively manage perishable goods (for example, flowers). Such a model is appropriate for startups, but over time there may be a need for a larger team and additional working resources, which makes in-house fulfillment is economically unprofitable or leads to a decrease in the quality of service.

*Party Fulfillment ( 3PL )* . In this model, the company delegates fulfillment tasks to a third-party organization that receives and stores goods in its warehouses, as well as processes and ships orders. This model allows the business to focus on other areas of development. The advantages of a 3PL include access to the expertise of a fulfillment operator who is able to perform all logistics operations more efficiently than a company using its own resources. 3PL is suitable for enterprises that do not have their own warehouse or cannot provide sales volume due to internal capabilities.

*Dropshipping.* This model also involves a third party in fulfillment , but differs significantly in that the business does not own the product it is selling. The goods are stored at the manufacturer or supplier, who sends them directly to the final consumer. The dropshipper processes the order and transfers it to the supplier. The advantages of dropshipping are the absence of upfront costs, which makes this model attractive for new e- commerce companies, although dropshipping does not allow you to control the fulfillment process.

*Cross- docking.* This model eliminates the stage of storage in the warehouse due to the coordination of the time of shipment of the product with its shipment to the final

consumer. Goods in the warehouse may be re-sorted and repackaged, but their storage should not exceed a few days. The benefits of cross-docking include speeding up the delivery of goods from suppliers to consumers, reducing warehousing costs, simplifying inventory management and reducing order processing time. This model is suitable for both small companies and those who process large volumes of goods, especially for perishable goods. However, it requires a significant initial investment and careful control of the process, since the high speed of sending limits the possibilities for error correction [ 16 ]

In our country, such logistics services are not as developed as in America or Europe. There are only a few transport companies in Ukraine that provide a comprehensive fulfilment + warehouse service on the Ukrainian market: "*Nova Poshta, Zammler, Denka Logistics* and *Raben*. Their clients include the largest online platforms such as *ROZETKA, ALLO*, etc. Smaller companies, such as *Maybox Logistics, Cherdak* and many others, also compete with large logistics centres in the Ukrainian fulfilment market [11]. Let's take a closer look at the characteristics of some of them.

*Zammler GROUP* is an international group of logistics companies that provides services in the areas of road, sea, air and rail transport, customs brokerage, and warehousing. The group includes 5 companies and 17 offices. It has representative offices in Ukraine, Poland, China and Kazakhstan [17]. The *Zammler* Group companies provide a full range of logistics services for all types of transportation, cargo storage, customs clearance, export and import operations, and fulfilment.

Fulfilment by *Zammler* offers a comprehensive solution for online stores with the following *range of services*: receiving goods from the supplier; storage; order picking and packaging; door-to-door delivery by the best courier service; reporting; returns; payment service (accepting payment from the recipient); photo services. *The advantages of Zammler* fulfilment are as follows: comprehensive service; customised solutions; personal manager; attractive commercial terms; low error rate (0.02%); high degree of involvement and responsibility for the project; reduced costs for warehouses, communications, and personnel; optimisation of operating costs: reduced IT costs and capital expenditures for warehouse rent; ability to track warehouse performance indicators; provision of the most optimal type of delivery and payment; only services received are paid for. The company's fulfilment centre in Ukraine is located in the Kyiv region and has the following characteristics: class A warehouse; anti-dust flooring; temperature conditions from +15 to +24 °C; sprinkler fire extinguishing system; round-the-clock security system with video surveillance; WMS system; modern loading and unloading equipment [18,19].

Consider the activities of *the Epicentr* group of companies, which over 21 years has become a powerful business empire consisting of *the Epicentrk* shopping centre chain, the Nova Liniya shopping centre chain, an online store with its own order

fulfilment centres, logistics centres, several manufacturing plants, an agricultural holding and franchised sports chains. A good indication of this is that in August 2020, traffic to the -epicentrk.ua online store -increased by 75% compared to the same month last year, and the number of cheques increased by 95%. According to Similar Web, the number of unique users of the online store -in August was 8.2 million. The site offers 1 million products. The main sources of traffic are search engines, social media, and messengers. The retailer has upgraded its order fulfilment centres, equipping them with children's rooms and coffee shops. The mobile app for online ordering-, launched in May, also increased traffic [20].

*Epicentr K* Group's operations are supported by an extensive logistics system. The Kalynivka logistics centre, with an area of 100,000 sq m<sup>2</sup>, centrally supplies 75% of the goods to the chain's shopping centres. The logistics centre has a customs terminal that provides a full range of services for customs clearance of goods and vehicles. In 2019, the company opened a powerful fulfilment centre, Viscosa, with a total area of 30 thousand sq m<sup>2</sup>, which processes online customer orders with high accuracy and speed, thereby increasing its own capacity [21].

It is worth noting that there is only one fulfilment centre in Ukraine that handles a wide range of goods (more than 250,000 items), including oversized ones. In addition, a unique feature of fulfilment is that it is fully integrated into the omnichannel sales model. The fulfilment centre can receive goods both from suppliers (including the assortment that is not available on the shelves of the shopping centre) and from the shopping centre network. The fulfilment centre is equipped with a modern automated management system (WMS), as well as a conveyor system (more than 1.5 km long), spiral and cantilever lifts, and two sections of the sorting system. A similar technology is used in Amazon's warehouses. This system makes it possible to fulfil orders with high accuracy and speed - processing and shipment of one transport route takes less than 30 minutes. As a result, in half an hour, the buyer can receive his order from the order pick-up centre at the Viscose Financial Centre [22].

Along with large companies, there are a number of smaller ones operating on the Ukrainian market, which also provide a wide range of fulfillment services. Let's consider the activities of some of them. Fulfillment from *CloudCommerce* is a service for processing orders and returns, sales support through an automated contact center, delivery to marketplace distribution centers, retail outlets or the final recipient. This company works with the following group of products: outerwear, underwear, haberdashery, electronics, cosmetics, costume jewelry, jewelry, stationery, household appliances, equipment, tools, souvenirs, books, etc.

Fulfillment clients from *CloudCommerce* can be:

*online stores*. Fulfill multi-channel orders on websites, in marketplaces, telestores, by phone, through catalogs;

*retailers and wholesalers.* Completing, marking goods with tags and stickers for networks and individual trade and service points (stores, beauty salons);

*MLM company.* They ensure the completion of orders for agents and end buyers, organize delivery to service points;

*sellers in social networks.* Orders from classifieds sites, social networks, messengers (OLX, Facebook, Instagram, Telegram) are executed without presence;

*banks, companies with branches.* They collect orders and deliver stationery, consumables and packaging materials, tea, coffee, and water to divisions and branches.

To cooperate with this company, it is necessary to: 1) create a plan for receiving goods in your personal account, using API, or in Excel and transfer the goods for actual acceptance by quantity and, if necessary, by quality of packaging; 2) create an order for completeness with the addition of the necessary options: packaging, warranty card, advertising materials, accompanying documentation, delivery method; 3) monitor the order online [ 23 ] .

The strength is the tariff grid developed by them, which includes a number of tariffs depending on the number of orders. Special types of services are selected for each of the tariffs, taking into account the characteristic features of the tariff and presenting a system of discounts depending on the increase in order volumes (Table 4).

Table 4

Tariff grid for fulfillment services CloudCommerce

	START	ZLIT	ROCKET	MKS	PRO
Minimal amount of services, UAH / month	430	1 940	6 595	15 100	50 000
The price of the configuration of the first unit / Cross-docking , the weight of the order to 1 kg, UAH	17	15	13	12	The list and cost of services are formed individually All are considered business features processes
Each one the next unit in the order, hryvnias	3.40	3.30	3.00	2.60	
Everyone following kg in the order, UAH.	1.75	1.75	1.75	1.75	
Storage, by each one m <sup>3</sup> /month, UAH	300	280	260	240	
Processing of returns for orders, UAH.	17	15	13	12	
Included in cost	Mechanized unloading, receiving, shipping, access to personal office and API ( Application Programming Interface ), integration with CRM and API outsiders informative systems				

Source: [ 23 ]

Let's also outline a couple of aspects of *FTF activity fulfillment center*, which is located in the Vinnytsia region. It is also a warehouse complex, the partner of which is Nova Poshta. This company performs the entire range of fulfillment services, instantly sending goods to customers. In the initial stage of *FTF fulfillment* receives the goods from the client, scanning the bar code, and places it in the warehouse. The next stage is your sale of the corresponding product. Thanks to the processes of digitization and integration of information systems of supply chain participants, *FTF managers fulfillment* through the CRM system or Salesdrive have relevant information about your sale of this or that unit of the product. Next, the managers select the product from the warehouse by scanning the bar code, pack it, create an invoice, which is automatically displayed in the CRM system or in the New Post office. The same as with the fulfillment service provider analyzed above, *FTF fulfillment* has a developed tariff system. We present a detailed overview of it in Table 5. A positive aspect of the activity of this company is the location of the New Post office on its territory, which significantly optimizes the time of dispatch of orders according to all parameters of logistics costs.

Table 5

Tariff grid for FTF services fulfillment

Tariffs	The cost of the service
STANDARD	<p><b>UAH 27.99</b> for 1 shipment  + 1 hryvnia for each product unit in the order</p> <p><b>The price includes:</b>  selection from the shelf, checking the goods, scanning, printing, attaching an invoice, packing with bubble wrap, packing paper and tape, placing it in a box or bag, issuing a TTN at the branch</p> <p><b>Additional costs:</b>  1. Reception. The goods are automatically transferred from the NP department to the receiving area, which includes counting, checking for defects, photographing all the goods for which there are questions, placing them on the rack in the cell. It costs UAH 98 per 1 m<sup>3</sup> + UAH 1 unit of the product in reception  2. Storage: UAH 390 per 1m<sup>3</sup> per month  3. Subscription fee UAH 1,999 per month</p>
OPT	<p><b>UAH 32.99</b> for 9 products in the package</p> <p><b>The price includes:</b>  up to nine products in the order (+ UAH 1 for the 10th and the next)  selection from the shelf, checking the goods, scanning, printing, attaching an invoice, packing with bubble wrap, packing paper and tape, placing it in a box or bag, issuing a TTN at the branch</p> <p><b>Additional costs:</b>  1. Reception. The goods are automatically transferred from the NP department to the receiving area, which includes counting, checking for defects, photographing all the goods on which there are questions, placing them on the shelves in the cells. It</p>

Tariffs	The cost of the service
	costs UAH 98 per 1 m <sup>3</sup> + UAH 1 unit of the product in reception 2. Storage: UAH 390 per 1m <sup>3</sup> per month 3. Subscription fee UAH 1,999 per month
REPACKING	<b>12,000 hryvnias / truck</b> for processing 1 truck repacking and sending to the customer, or sorting, labeling and distribution in a network of stores without storage Receipt of goods, fast repacking, sorting by directions for same day dispatch. <b>The price includes:</b> selection from the shelf, checking the goods, scanning, printing, attaching the invoice, packing with bubble wrap, packing paper and tape, forming into a box or a bag, issuing a TTN at the branch
1000 little things	<b>5 hryvnias</b> for 1 shipment, if the value of the parcel is less than UAH 150. + UAH 0.5 for each product unit in the order. <b>The price includes:</b> selection from the shelf, checking the goods, scanning, printing, attaching an invoice, packing with bubble wrap, packing paper and tape, placing in a box or bag, issuing a TTN at the branch <b>Additional costs:</b> 1. Reception. The goods are automatically transferred from the NP department to the reception area, which includes counting, checking for defects, photographing all goods for which there are questions, placing them on a rack in a cell. It costs UAH 98 per 1 m <sup>3</sup> + UAH 1 unit of the product in reception 2. Storage: UAH 390 per 1m <sup>3</sup> per month 3. Subscription fee UAH 1,999 per month

Source: own development based on [ 24 ]

Along with the development of fulfilment, *micro fulfilment*, or in other words, *dark stores*, has recently begun to operate in the market. One of the representatives of micro-fulfilment is the Glovo delivery service, which operates in more than 20 countries and was launched in 2015. The company appeared on the Ukrainian market in 2018. Customers can order any small item weighing up to 9 kg through the mobile app. Mostly it is food delivery, but the company has an extended range of products. After placing an order, the user can track the courier's movements along the route in real time. Micro-fulfilment centres, or Dark stores, are stores that sell goods of a certain product range. They are closed to consumers and work exclusively for picking orders by pickers and delivering them to couriers. In fulfilment centres, Glovo uses the latest digital technologies and special resources to ensure the fastest delivery times and the ability for customers to receive their orders in about 30 minutes. Today, the process of collecting goods at Glovo Express takes up to 1.5-2 minutes due to the company's own and specially equipped premises. This reduces the delivery time to 20 minutes from the moment the user places an order in the Glovo app.



Such centres operate in a number of large cities. In particular, the opening of such a centre in Lviv demonstrated that the city's needs are covered by only 30%, so in the future, the company plans to open 2 more such micro-fulfilment centres so that all users can take advantage of such an offer as Glovo Express. The company also started building a technology hub - an engineering centre that will work on improving the platforms for the Glovo service. In 2021, the company bought the Ukrainian service Zakaz.ua for up to USD 50 million. The Zakaz.ua service delivers groceries from supermarkets in Ukraine, Uzbekistan, and Moldova. The use of Zakaz.ua technological developments will allow the company to grow faster in the delivery market not only from restaurants but also from stores [25].

*Conclusions.* Improving service, increasing the speed of delivery, and professionalising logistics services are becoming essential factors that will help overcome business stagnation. Only those companies that will be able to build a policy of reducing fixed and variable costs with the least losses for the business will be able to overcome the downturn in the logistics services market and remain competitive. Based on the study, which is based on both theoretical and applied aspects, the development of fulfilment is an element that can save the client free time for business development and increase sales, while eliminating such negative factors as: renting an empty warehouse in the event of a seasonal downturn; shortages, re-sorting and errors in order picking due to poorly organised accounting; and increased delivery times during the seasonal peak due to insufficient resources and staff. Thus, the above-mentioned trends in the context of the pandemic will allow most market players to adapt to changing environmental conditions, while maintaining a high competitive position in the market, reducing logistics costs and improving the quality of customer service by providing a wide range of necessary services.

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# **TRANSFORMATION OF LOGISTICS ACTIVITIES OF INDUSTRIAL ENTERPRISES IN THE TRANSITION TO INDUSTRY 5.0.**

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Despite the ongoing military conflict in Ukraine, scientific and public communities have initiated discussions about forming a national framework for post-war economic recovery and ensuring sustainable economic growth. Many domestic and international experts believe that the primary principles for such recovery should include energy efficiency, carbon neutrality, reducing energy losses, and the consumption of fossil fuels, as well as the development of high value-added sectors and new industries. In our view, the practical application of these principles implies that the key concept for the restoration of the national economy could be smart manufacturing. The implementation of smart technologies in industrial processes will contribute to the creation of a modern, efficient, and sustainable economy that aligns with the requirements of Industry 5.0.

The interaction between the industrial sector and Logistics 4.0 in Ukraine should play a key role in the post-war reconstruction of the national economy, acting as a catalyst for:

1. **Stimulating Innovation:** Industrial enterprises can drive innovation in logistics by introducing advanced technologies in their production and logistics processes. This may include automating warehouse operations, using IoT for monitoring and managing supply chains, and implementing data analytics to optimize processes.

2. **Developing Logistics as an Industry:** The industrial sector's demand for logistics services can stimulate the development of new technologies and solutions in the field of Logistics 4.0. For instance, increased demands for speed and delivery accuracy may encourage the use of automated systems for managing logistics processes and transportation infrastructure.

3. **Collaboration and Partnership in Supply Chains:** Industrial enterprises can actively collaborate with suppliers and logistics partners to implement innovations in supply chains. This can involve joint initiatives for the adoption of digital technologies, data and resource sharing, as well as collaborative testing and deployment of new solutions.

4. **Creating Open Ecosystems:** Industrial enterprises can be active participants in open innovation ecosystems, fostering the joint development and implementation of

advanced technologies in Logistics 4.0. This may include cooperation with startups, universities, and research institutions to exchange knowledge and resources.

Overall, the industrial sector in Ukraine has the potential to become a key catalyst for the development of Logistics 4.0, promoting the introduction of new technologies and innovations in the field, and accelerating the transition to Logistics 5.0."

The analysis of the origins and manifestations of the Fifth Industrial Revolution, its main trends, and tools indicates that a profound transformation is taking place in the strategic vision of industrial enterprise development, grounded in the principles of intellectualization, socialization, and ecological sustainability. As the number of studies in this field continues to grow, a systematic review of scientific publications will help deepen our understanding of how the transition to the new technological paradigm is influencing the transformation of logistics activities in industrial enterprises.

The concept of Industry 5.0 emerged after the successful implementation of many technologies and technological solutions from Industry 4.0, with researchers highlighting the significance of socio-economic factors in industrial development, long-term human progress, and the importance of continuous interaction between people and technology [1]. Some scholars believe that both industries should coexist, as the first focuses on technological management, while the second emphasizes values and societal needs [2]. Authors [3] argue that the digital transition to Industry 5.0 occurred after the introduction of Industry 4.0 ten years ago, which aimed to address the shortcomings in the manufacturing sector. Similarly, researchers [4] have referred to this new stage as neo-industrialization and defined its key objective as restoring industry's leadership in economic development through the integration of technologies with new strategies and organizational models.

According to the European Commission's findings, Industry 5.0 has three main characteristics: human orientation, resilience, and sustainability [5]. Human-centeredness means that machines will be used to perform heavy, repetitive, or monotonous tasks, while humans will focus on more stimulating and creative work. Resilience refers to the ability of companies to cope with turbulences and unforeseen situations, recovering from unexpected events or challenges. Sustainability emphasizes sustainable development and reducing the harmful environmental impact of economic activities [6].

The synthesis of key characteristics of Industry 5.0 allows for a deeper exploration of its impact on the logistics activities of industrial enterprises. A detailed bibliometric analysis of scientific publications to establish the connection and differences between industries 4.0 and 5.0 and their impact on logistics activities is presented in the work [7]. The authors concluded that, in the studies of intellectual logistics within Industry

5.0, more attention is given to the interaction between humans and technology during the digital transition, the implementation of collaborative technologies, such as "human-machine" systems, and the resilience and sustainability of logistics systems. In this context, human-centeredness implies that manufacturing and logistics systems should be enhanced by focusing on the benefits and needs of individuals, thereby transforming the human from a "cost" to an "investment." While Logistics 4.0 focuses on networks and machine-to-machine communication, Logistics 5.0 shifts the focus back to people. This concerns the development of methods through which humans and machines can work together optimally. The goal is symbiotic cooperation, leveraging the strengths of both parties. Machines automate repetitive processes, calculate, and analyze large volumes of data, while humans interpret the results and develop creative solutions [8 ].

Recent studies, particularly [9-11 ], have linked Industry 5.0 with supply chain management. One of the most influential researchers in the field of supply chain management is Martin Christopher, who argued that traditional supply chains, focused solely on efficiency and cost minimization, are no longer sufficient to meet modern demands [12 ]. In their research on the development strategies of intelligent logistics systems, Ma Q. et al. highlighted that e-commerce has become a key driver of increased interest in these systems [13]. The article [14 ] examines the possibilities of using big data analytics in sustainable supply chains and transforming them to be technologically advanced, socially responsible, and environmentally friendly. Authors [15-17] have demonstrated that artificial intelligence technologies are gaining particular importance in the digital age due to their wide range of applications in logistics and supply chain management. New opportunities for the use of the Internet of Things technology are revealed in the publications of [18, 19]. Authors [20] connected the digitalization of supply chain management with economic, environmental, and social criteria, as well as the implementation of innovations.

The need for digital skills was accelerated by the global COVID-19 pandemic, as many companies had to adopt remote work models and adjust their supply chain strategies to make them more flexible, resilient, and transparent. Various studies assert that these competencies are crucial for Industries 4.0 and 5.0 [21]. Notably, the authors in [22] emphasize the importance of retraining and upskilling logistics personnel in the context of the Fourth Industrial Revolution, while the article [23] highlights the necessity of analytical skills and the ability to manage large volumes of data. The issue of developing and enhancing logistics professionals' competencies also draws the attention of domestic researchers. Recent publications are noteworthy, including the emphasis on the relevance of information and communication skills for future managers as justified in [24, 25], and the proposed "T9 Model" of logistics managers'

competencies, which combines general management, problem-solving, interpersonal, and functional logistics competencies, as presented in [26].

Thus, the bibliographic analysis indicates the existence of various approaches to defining the current stages of industrial development and their impact on logistics activities and supply chain management. Despite the relatively high level of study on Industry 4.0 and 5.0 and their influence on the optimization of logistics processes, the significant relevance of these issues calls for further interdisciplinary research, taking into account industry development trends and the priorities of neo-industrial development.

The aim of this study is to summarize the current trends in the development of the logistics industry, identify the opportunities and threats posed by modern digital technologies for optimizing logistics processes and supply chain management, employ a systems approach to organizing partnership interactions between industrial enterprises and logistics companies with other stakeholders, including educational and research institutions. Additionally, the study aims to develop a new model for training professional logistics managers in the context of the transition from Industry 4.0 to 5.0.

To study the transformation of logistics managers' competencies in Industry 5.0 conditions, a combination of quantitative and qualitative methods will be used, allowing for a comprehensive understanding of the topic. The first stage is a comprehensive analysis of existing scientific sources, literature, and reports on Industry 5.0 and its impact on logistics managers' competencies. This allows identifying main trends, modern theoretical approaches, and practical solutions. To illustrate real examples of competency transformation in various companies, a detailed analysis of specific cases is conducted. This includes studying companies that have successfully adapted their competency models to the new conditions of Industry 5.0, and evaluating their strategies and approaches. The research results are interpreted considering the theoretical context of Industry 5.0 and identified changes in logistics managers' competencies.

Summarizing the trends in the development of global and regional supply chains in recent years, it can be stated that tectonic changes are currently underway, initially triggered by the global coronavirus pandemic and now linked to the growing geopolitical and geoeconomic risks, the increasing confrontation between Western and Southern countries, and ongoing military conflicts.

#### 1. Summarizing the Trends in the Development of the Logistics Industry in the Context of New Geopolitical and Geoeconomic Conditions

First, let us consider the changes that have occurred in the global logistics industry over recent years. According to the United Nations Conference on Trade and Development (UNCTAD) report on global trade, international trade has undergone unprecedented changes in the past decade, ranging from health pandemics to

geopolitical tensions, shifts in economic power, and the development of innovative technologies. For example, recent attacks on vessels transiting through the Suez Canal have reduced shipments via this route by approximately 42% compared to the peak, according to UNCTAD estimates. The search for alternative routes, prompted by these factors, results in increased transportation distances, higher trade costs, and rising insurance premiums. Thus, geopolitical tensions, the sharp rise in delivery costs, and significant debt levels complicate global commodity movements and, consequently, require new approaches to managing international supply chains.

The logistics sector is continually evolving: on the one hand, global supply chains are vulnerable to a variety of challenges, while on the other hand, technological changes are revealing new opportunities for the development of the logistics services market. According to forecasts by the International Economic Forum, the logistics industry is expected to exceed \$18 trillion by 2030. For comparison, this figure stood at \$8.6 trillion in 2023 [27]. The primary driver of this growth is the development of e-commerce, which demands faster and more efficient logistics solutions utilizing artificial intelligence. Through complex algorithms and machine learning methods, AI allows e-commerce platforms to analyze vast amounts of data, optimize pricing strategies, and enhance customer satisfaction and loyalty. Given this transformative impact, AI is expected to reach \$12.87 billion in the logistics market by 2026, according to the [28].

According to the World Bank's Logistics Performance Index, leading countries in the rankings, such as Singapore, Germany, and the Netherlands, are actively using advanced technologies like blockchain, the Internet of Things, and AI to optimize supply chain operations and enhance efficiency [29]. Moreover, the governments of these countries are establishing partnerships with private sector stakeholders to promote innovation and address urgent issues such as sustainability and digitalization.

The trend towards increasing the digitalization of logistics activities and the emergence of new digital solutions in logistics is also reflected in the latest publication "Logistics Trend Radar 7.0," as shown in fig.1.

Thus, the DHL Logistics Trend Radar 7.0 report highlights several extremely important trends that are expected to revolutionize processes in logistics. One of the most significant applications of generative AI in logistics is the optimization of freight transportation routes. By analyzing real-time factors such as traffic intensity, weather conditions, and delivery priorities, AI-based systems can suggest the most efficient routes. Moreover, they can also explain the reasons for selecting particular routes, which enhances the trust of logistics personnel in these suggestions. The ability of generative AI to create text, images, or code can be used to generate product descriptions, warehouse reports, or customer service responses, as well as create visualizations, such as warehouse layouts, or generate scripts for data analysis. AI-



powered chatbots can significantly improve communication within the supply chain between a company and its customers, as they can quickly provide responses to customer inquiries. By leveraging generative AI, the logistics industry will be able to more effectively respond to the operational challenges posed by the growing global demand. Computer vision, by identifying unique markers such as QR codes, can track goods during their movement through warehouses, providing more accurate performance metrics. It is expected that in the next five years, computer vision will be widely utilized in logistics operations, with many new applications emerging.

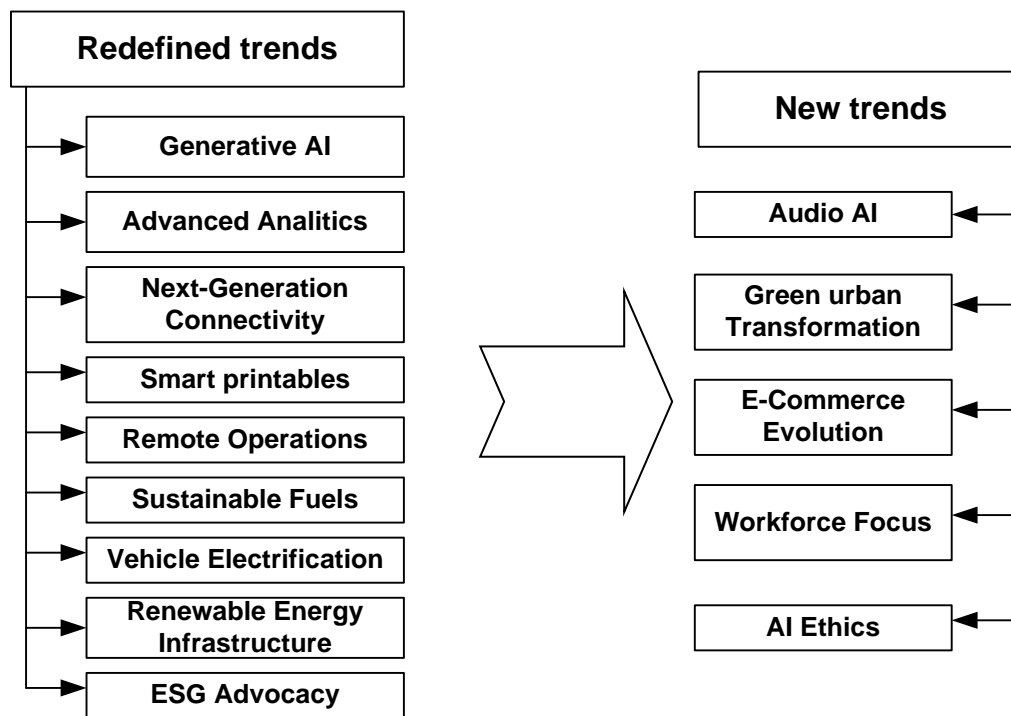


Fig. 1. Overview of changes of Logistics trend radar 7.0 vs 6.0

Source: [30]

The logistics industry is undergoing a true revolution due to advanced data analytics. Companies are increasingly adopting modern tools that enable them to analyze vast amounts of information. This helps them better forecast future demand, optimize delivery routes, and manage inventory. Artificial intelligence and machine learning play a crucial role in this process, allowing for the automation of many procedures and more precise decision-making. As a result, freight transportation is becoming not only more efficient but also more flexible and resilient to unexpected events. The emergence of regulations on AI ethics highlights the focus on ensuring that AI systems are transparent, fair, and accountable in their decision-making processes.

A separate trend that should be highlighted is the focus on sustainability, carbon emission reduction, and improving energy efficiency within supply chains. The issue of sustainable development is becoming increasingly important in the logistics industry. In this context, it is important to emphasize the need for the creation of

effective infrastructure that will enable the transition from fossil fuel-based energy production and consumption to renewable energy sources, such as wind, solar radiation, and biomass, among others. On the other hand, the trend toward the electrification of freight transportation will continue. It is expected that the number of electric vehicles worldwide will grow exponentially, from less than 45 million in 2023 to 250 million in 2030, and 525 million in 2035/

Thus, it can be unequivocally stated that technologies are truly revolutionizing logistics and supply chain management by automating processes, improving visibility and transparency at all stages of goods movement, and enabling real-time data analysis and tracking.

Similar changes are occurring in Ukraine's logistics industry; however, they have their own characteristics related to military actions. As indicated by the results of the industry survey 'Infrastructure Index 2023', conducted by the European Business Association in collaboration with the law firms Arzinger and Sayenko Kharenko, 79% of the logistics companies surveyed in 2023 did not halt their operations and continue to function, 13% temporarily suspended their operations but have partially resumed, and 6% ceased operations but have fully resumed them [31]. Operations of 2% of companies are currently suspended. According to official statistics, 9 out of 10 of the largest logistics companies specializing in transportation organization and cargo handling have significantly increased their activity volumes (according to YouControl data).

According to the State Statistics Service, from March to December 2023, a total of 282.4 million tons of cargo were transported by all modes of transport, which is 22% more than in the corresponding period of 2022 [32]. The positive 'freight' trend is expected to continue in 2024. This is clearly demonstrated by the performance of the key freight transportation segment - the railway sector, which traditionally accounts for about half of all freight transport in Ukraine. In the first half of this year, Ukrzaliznytsia increased its volume by 90 million tons, 28% more than in the same period of 2023. At the same time, export transportation grew by nearly 59% [33].

Table 1 summarizes the global factors influencing the transformation of the global logistics services market, as well as the specifics of how these factors affect Ukraine's logistics industry.

It should be noted that some experts believe that Industry 5.0 is not timely for Ukraine, as most sectors of the economy are at the stage of industrial development 3.0. However, we believe that in the logistics sphere, there are real prerequisites for implementing the basic principles and technologies of the new technological order. The post-war reconstruction of the country's economy, primarily infrastructure, will require saving both natural and financial resources, adhering to the UN sustainable

development goals and sustainable practices of the European Union, integrating Ukrainian enterprises into international supply chains, and so on.

Table 1

The impact of global factors on the transformation of the logistics industry in Ukraine

Factors of Influence	Global Context of Changes	Ukrainian Context, Impact on Ukraine
Changes in supply geography and logistic flows reorientation	Closure or restriction of traditional transport flows due to military actions in certain regions of the world (Middle East, Ukraine, Red Sea crisis, etc.). Economic sanctions, trade restrictions, customs procedures, and tariff barriers affect the accessibility of raw material markets and supplier selection.	<ol style="list-style-type: none"> <li>1. Due to the war, many traditional global logistic routes became inaccessible for Ukrainian importers and exporters, forcing companies to reorient to new markets, particularly European countries, and seek alternative routes for export and import of goods (using Danube river ports, opening new railway and road crossings to the EU, and road routes through Poland, Romania, and other neighboring countries).</li> <li>2. Business relocation – moving production capacities from Eastern and Southern Ukraine to the west, as well as to neighboring European countries, which changed the geography of both internal and international cargo flows.</li> <li>3. Increasing role of domestic carriers in the Ukrainian market, growth of their market share, as foreign carriers are not interested in traveling to frontline areas like Kharkiv or Zaporizhzhia under war conditions.</li> <li>4. Active use of combined cargo transportation schemes involving rail and river transport with access to EU ports and subsequent delivery of goods directly via European road and rail routes.</li> </ol>
Growth of online trade	E-commerce is the new norm in the global logistics market. To synchronize the shopping ecosystem, the supply chain needs to provide a seamless omnichannel sales experience. Customers want fast and flexible transportation of goods combined with full control over the process chain.	<p>Ukrainian logistics companies also strive to integrate various logistics services – warehousing, transportation, and customs – into a single platform, allowing operators more efficient supply chain management.</p> <p>The last-mile delivery segment is actively developing. The number of courier companies and express delivery enterprises is growing.</p> <p>Construction of fulfillment centers is resuming, and the volume of fulfillment services by logistics companies is increasing.</p> <p>Most large retail chains have transitioned to combining online and offline sales channels, stimulating demand for multichannel logistics.</p>
Changes in consumer preferences	Individualization and personalization of customer service necessitate flexible and adapted logistics solutions. Requirements for speed and accuracy of order fulfillment are increasing, along with growing demand for express delivery.	Emergence of new types of logistics services, new market segments, diversification of logistics service providers' activities. Active expansion of Ukrainian postal and courier companies into markets of other countries ("Nova Poshta" currently has offices in 18 countries worldwide and delivers goods to 213 countries).

Digitalization and innovation	Automation of logistics processes, use of GPS systems for monitoring vehicle and cargo movement, Internet of Things technologies, artificial intelligence, blockchain, which increases transparency and efficiency of supply chain management.	<p>Leading logistics companies are actively implementing automated warehouse management systems (WMS), transport management systems (TMS), and supply chain management systems (SCM).</p> <p>The relevance of logistics process automation in Ukraine is intensified by the shortage of personnel in the industry and becomes key to the survival of logistics companies.</p> <p>In Ukraine, there is growing demand for digital solutions such as online platforms for cargo transportation management, drones for monitoring and delivery, IoT technologies, and blockchain for ensuring supply chain transparency. This contributes to the development of the IT sector and the implementation of innovative solutions in logistics.</p> <p>Logistics operators have emerged in Ukraine that implement the "data-driven organization" business model, where the IT department prepares models that allow individual departments in the company to analyze information and make decisions based on it (Rohlig SUUS Logistics company).</p>
Risks and resilience of supply chains	Global crises have highlighted the importance of risk management and resilience, which involves diversifying suppliers, changing sources of goods supply, developing alternative routes and various scenarios for goods delivery.	In Ukraine, these factors have led to a rethinking of approaches to risk management, including creating backup stocks, diversifying suppliers, and developing new resilience strategies. At the same time, this has necessitated the activation of humanitarian logistics, as well as increased volumes of consolidated cargo transportation. This applies both to the segment of truck transportation (LTL – Less Truck Load) and container transportation (LCL – Less Than Container Load).
Impact on human resources	Changes in the global labor market caused by the pandemic and conflicts have led to changes in employee competency requirements.	<p>Migration, mobilization, and changes in the economic situation have led to a redistribution of human resources and an increase in labor shortages.</p> <p>Due to the lack of professional staff, one of the key tasks today is to increase the involvement of women in so-called "male" work and adapt people with disabilities to logistical work processes.</p> <p>This increases the demand for retraining, learning new competencies, and implementing new approaches to human resource management.</p>
Changes in infrastructure development priorities	Global investment flows are increasingly directed towards the development of critical infrastructure objects. Introduction of new types of transport (electric vehicles, drones, and autonomous vehicles).	<p>Ukraine needs to rebuild destroyed infrastructure, attract international aid and investors, and develop recovery strategies that include modern infrastructure solutions aimed at improving the efficiency of logistics processes.</p> <p>Development of new transport routes and transport corridors (expansion of the pan-European TEN-T network to Ukrainian territory, formation of new "grain" corridors, etc.). Ukraine has a chance to become a world leader in the use of drones and unmanned systems for supplying military and civilian objects.</p>

Environmental and sustainable practices, implementation of resource and energy-efficient technologies	Growing emphasis on sustainable development, environmental norms, and carbon emission reduction, requiring new approaches to supply chain management. Logistics companies are responding to this trend by developing environmentally friendly logistics solutions.	Active involvement of Ukrainian companies in the European Green Deal. The need to implement sustainable practices for entering international markets. Use of ESG criteria for selecting investment projects for post-war infrastructure reconstruction. Destruction of energy facilities and reduction in energy generation encourages Ukrainian enterprises to save energy and use alternative energy sources.
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*Summarized based on [27-33]*

The logistics industry operates in very specific conditions as it acts as a link in supply chains in various sectors of the economy, must meet the requirements of individual clients it serves on behalf of commercial enterprises, and is responsible for its own actions towards society and the economy by adapting to legal requirements, environmental and social trends.

## 2. Ecosystem Approach to Organizing Interaction between the Industrial and Logistics Sectors: Synergy of Knowledge and Technologies

As many scholars argue, the ecosystem approach is a synthesis of the mechanistic (regulations, instructions, schedules) and organic (values, motivations, communities, network interactions) management approaches. Therefore, the ecosystem paradigm is increasingly used in business management, the ecological transformation of operations, technological innovations, and value co-creation processes [34]. The implementation of the ecosystem approach requires a reevaluation of traditional business models in various organizations and government institutions, as well as an assessment of the opportunities for cooperation between enterprises from different sectors of the economy. This cooperation can potentially provide additional avenues for enhancing competitiveness and creating new sources of income. The ecosystem approach's toolkit enables the analysis of various socio-economic entities, ranging from the global economy as a whole to small enterprises.

In the context of the development of Industry 5.0, the establishment of the ecosystem approach takes on an innovative dimension. In particular, R. Adner speaks of the emergence in ecosystems of the "coevolution of the capabilities and opportunities of participants in the value creation process" [35, p.41]. Furthermore, in ecosystems, the paradigm of economic competition is being replaced by mutually beneficial collaboration aimed at substituting scarce resources. The materialization of the value proposition is based on the concept of the "alignment structure" of the ecosystem, where a set of partners is formed, interested in mutually beneficial cooperation, sharing a common vision and understanding of how to achieve goals during the implementation of the innovation ecosystem strategy [36].

Many researchers emphasize that an innovative ecosystem is a synergy between the state, the entrepreneurial environment, and research sectors, aimed at collective action in knowledge flow creation, supporting technological development, and the commercialization of innovations. Specifically, in the published project "Development of the Innovation Ecosystem in Ukraine" in April 2023, the Ministry of Digital Transformation of Ukraine defined the "innovation ecosystem" as the synergy between the state, entrepreneurship, and research sectors, using regulatory, educational, and financial resources, and introducing a knowledge transfer mechanism to transform these into innovative products [37, p.8].

Another important feature of innovative ecosystems is their focus on the digitalization of relations between participants and the use of digital technologies. In particular, S. M. Lee and S. Trimi proposed a revolutionary paradigm - an innovation platform ecosystem, which integrates people, objects, ideas, functions, and technologies. In their view, an innovation ecosystem is a self-organizing mechanism for finding and solving problematic situations and creating added value through the use of cross-cutting digital technologies (artificial intelligence, the Internet of Things, big data analytics, e-learning, etc.) [38].

Agreeing with the thesis that transformation is the process of converting one economic system into another, accompanied by the extinction of some elements, characteristics, and properties, and the emergence of others, we can assert that a digital transformation of the supply chain business environment is taking place. This transformation is linked to the implementation of digital technologies and changes in organizational culture, processes, and management strategies to optimize and improve the entire supply chain. Essentially, digitalization transforms the supply chain business environment, and, consequently, logistics activities, making them more efficient, communicative, transparent, and flexible, which stimulates innovation and development in this sector. As a result, network ecosystems of interconnected organizations, technologies, platforms, and other participants are formed, which work together to create, develop, and continuously improve products and services. The ecosystem logic not only allows for the generation of new ideas regarding the configuration and business processes within supply chains that deliver specific sets of consumer values, but also enables the identification of participants with sufficient resources, capabilities, competencies, and capital to implement these ideas.

The ecosystem approach to managing the logistics activities of industrial enterprises means creating a business environment where participants can exchange knowledge, ideas, and experiences, as well as form partnerships and collaborate to address complex problems and challenges together. This allows for the pooling of resources and knowledge to implement innovative projects. Ecosystems can provide access to common resources and infrastructure, such as data, technologies, and

financial resources, which facilitates the creation of innovative products and services. On the other hand, the ecosystem business environment of supply chains does not exclude competition among its participants, instead stimulating the search for better options to meet market demands.

One of the key features of the new ecosystem business environment of supply chains is the active use of digital technologies by its participants to automate business processes, which enhances efficiency and reduces costs, as well as to improve communication, data exchange, and goods movement control throughout the entire chain.

Based on the analysis of various analytical reviews, the following key trends can be identified that are transforming the ecosystem business environment of supply chains on both global and regional levels:

Trend 1. The use of generative artificial intelligence for managing supply chains, procurement, and logistics operations. Software products based on GenAI can process much larger datasets than previous forms of machine learning and are capable of analyzing an almost infinitely complex set of variables. GenAI can also study the nuances of a company's supply chain ecosystem (and learn), enabling it to improve and refine its analysis over time. It can help ensure compliance with procurement regulations, optimize and enhance manufacturing processes, or enable virtual logistics communication by using virtual assistants to handle routine inquiries and provide quick responses.

Trend 2. Improving data quality and enhancing datasets. Data remains one of the primary challenges faced by supply chain management. Millions of data records are generated daily across the supply chain from various systems. The proliferation of digital technologies, Internet of Things (IoT) devices, and advanced tracking systems has complicated this issue. This wealth of data has led to it becoming more fragmented within organizations, which in turn has resulted in disconnected datasets. Critically, data fragmentation, duplication, and misinterpretation hinder the creation of a holistic view of an organization's supply chain.

Trend 3. Increasing transparency and visibility of supply chains beyond levels 1 and 2. Typically, businesses know their direct suppliers and end-product buyers (level 1). Overcoming the transparency barrier beyond level 1 allows organizations to see their partners in the extended supply chain, better understand root causes, identify new risks, and contribute to achieving set goals through improved traceability and transparency.

Trend 4. Shifting priorities in the use of public digital platforms. Usually, corporate software used by supply chain participants is heterogeneous, contains data in various formats, and requires constant updates, which is time-consuming and prone to errors. Most supply chain tasks can be fully or partially automated using low-code

platforms, which represent typical SaaS solutions, utilizing a wide range of application programming interfaces (APIs) and pre-built integrations to unite previously fragmented systems. This reduces development time, allowing companies to respond quickly and adapt their applications to new market conditions, unpredictable events, or changes in strategies, enabling business users with limited technical knowledge to rapidly create, test, and implement new capabilities.

Trend 5. The need for continuous monitoring and control of harmful environmental impacts to prevent climate risks. Today, most companies focus on reducing direct emissions related to their operational activities under Scope 1 or from their use of electricity, heat, and steam under Scope 2. Indirect emissions are associated with the movement of goods between the links of supply chains, from raw material extraction to the final consumer under Scope 3. In most sectors of the economy, these emissions account for over 80% of greenhouse gas emissions and over 90% of the impact on air, land, water, and biodiversity. Although collecting and reporting emissions data under Scope 3 is currently voluntary, in many countries, this is becoming a legal requirement. Specifically, the new Corporate Sustainability Due Diligence Directive (CSDDD), adopted by the European Parliament on July 25, 2024, establishes a range of obligations for affected companies to address human rights and climate change issues [39]. It mandates supply chain reporting and verification, further emphasizing the need for collecting large amounts of data. Establishing a reliable data collection framework is crucial for monitoring progress and setting ambitious reduction goals. Digital platforms provide suppliers with a centralized system for entering data, which can then be easily integrated into the company's sustainability reporting.

Therefore, agreeing with the thesis that open ecosystems are an alternative to corporate ones, we consider it advisable to develop domestic digital platforms that unite various players from different companies, universities, startups, research organizations, and others, to jointly develop innovative products, technologies, or solutions. The main idea of open ecosystems lies in collaboration, knowledge and resource sharing between different participants, as well as in creating a favorable environment for innovation.

An example of an open ecosystem is the Industry4Ukraine platform, which unites over 50 business associations and organizations with the aim of lobbying industrial, innovation, and digital policies at the national level (Fig. 2). The founder of the national "Industry 4.0" movement is the Association of Industrial Automation Enterprises of Ukraine, which brings together leading industrial companies, system integrators, developers, machine builders, universities, and engineering firms – over 50 companies.

In 2023, the first conference on Industry 5.0 was held, which approved the Manifesto on the transition to 5.0 and developed an appropriate Resolution. These documents state that Ukraine, as a country suffering from Russia's military aggression



and as a candidate for EU membership, not only can but should use the current situation as a catalyst to accelerate the transformation of the economy based on sustainable development principles. Industry 5.0 is built on these principles, which change the approaches of enterprises and significantly improve their ability to balance and respond to the challenges of social, environmental, and economic development, rather than merely focusing on increasing profits. Industry 5.0, as a modern and attractive model for investment in various sectors, could become the "golden key" that unlocks the flow of donor and investment funds for the restoration of Ukraine. The implementation of automated production processes, robotic systems, and artificial intelligence technologies will help restore industrial capacities faster and at minimal costs. This will allow the production of more goods in less time, reduce dependence on human labor, and minimize the risks of errors. Smart manufacturing enables better management of resources and energy, which is critical for rebuilding infrastructure after the war. The use of renewable energy sources, real-time energy management, and the implementation of environmentally friendly technologies will help reduce energy supply costs and support the economy in the face of unstable resources.

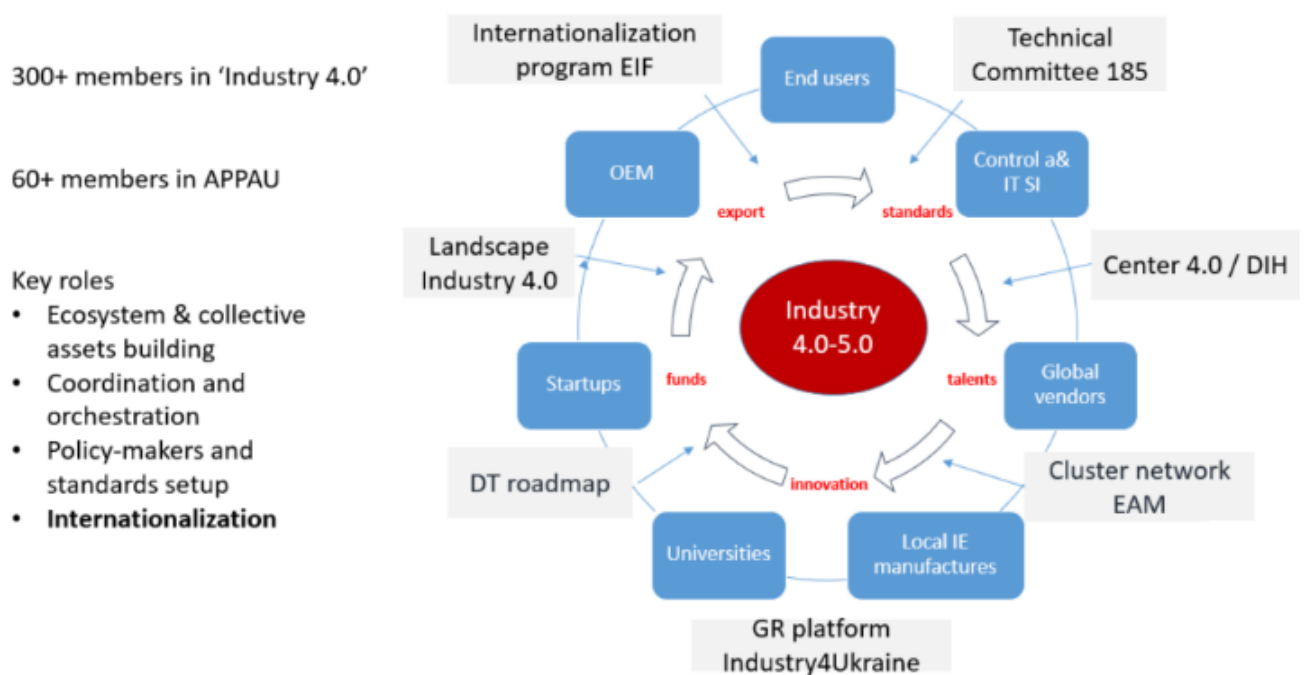


Fig. 2. Open Ecosystem of Industry 4.0-5.0 of Ukraine

Source: [40].

The reconstruction of Ukraine's economy after the war through smart manufacturing will stimulate the development of new jobs in high-tech industries such as machine engineering, electronics, robotics, and others. This will create new opportunities for Ukrainians and increase the engagement of young people in innovative sectors of the economy. The implementation of smart manufacturing will

also help Ukraine integrate sustainable development principles into the reconstruction process. This includes minimizing harmful emissions, optimizing resource use, and creating environmentally clean production chains, which are important for the long-term stability of the country. Besides the technological aspect, Industry 5.0 emphasizes sustainable development, highlighting the importance of social and environmental responsibility of enterprises. This involves implementing environmental standards, social responsibility, and sustainable practices, which enhances the reputation of enterprises and meets the growing expectations of consumers regarding sustainable consumption.

The unifying idea of Industry 5.0 is the concept of co-creating consumer value and managing sustainable supply chains, which emphasizes partnership and integration of all participants in logistics and production processes. In today's business environment, enterprises can no longer operate in isolation – interaction with suppliers, manufacturers, distributors, logistics operators, and other business entities becomes critically important for creating added value for the consumer. This concept involves transitioning from a traditional vertical structure to a more horizontal one, where all participants in the supply chain collaborate equally, sharing information, technologies, and resources. Such partnership allows businesses to adapt faster to changes in market conditions, improves flexibility, and enhances responsiveness to changes in demand. It also enables risk distribution and cost reduction, which is important in the context of globalization and instability in global markets. Thus, co-creating consumer value through partnership and integration in supply chains not only improves business efficiency and innovation but also ensures long-term competitiveness in the context of Industry 5.0.

### 3. Changing models of logistics personnel training in the conditions of industry 5.0

The new stage of industrial development significantly impacts logistics, which, under the new conditions, ceases to be merely a supporting function and becomes a strategic element of the production process. The role of logistics is greatly expanding and gaining more importance, as it facilitates the integration of various elements of production, distribution, and consumption by utilizing advanced digital technologies. Changes in production and logistics processes, driven by Industry 5.0, create the need to adjust educational programs aimed at preparing personnel for the logistics industry.

In today's world, where technologies are rapidly evolving and markets are becoming increasingly competitive, logistics professionals must possess new knowledge and skills to effectively manage complex supply chains. In response to these changes, the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" has developed a new competence model for logistics managers. This model is an integrated system of knowledge, skills, behavioral characteristics, and

other qualities necessary for the successful execution of job tasks and achieving productivity in specific positions within manufacturing, trade, or service enterprises. The new competence model includes four key components: knowledge, skills, behavioral characteristics, and motivation, which together ensure comprehensive training for specialists (fig.3). These four components of the competence model form a holistic approach to the preparation of modern logistics managers and create a harmonious system that allows the training of highly qualified professionals capable of responding to the challenges of Industry 5.0 and effectively managing complex logistics processes.

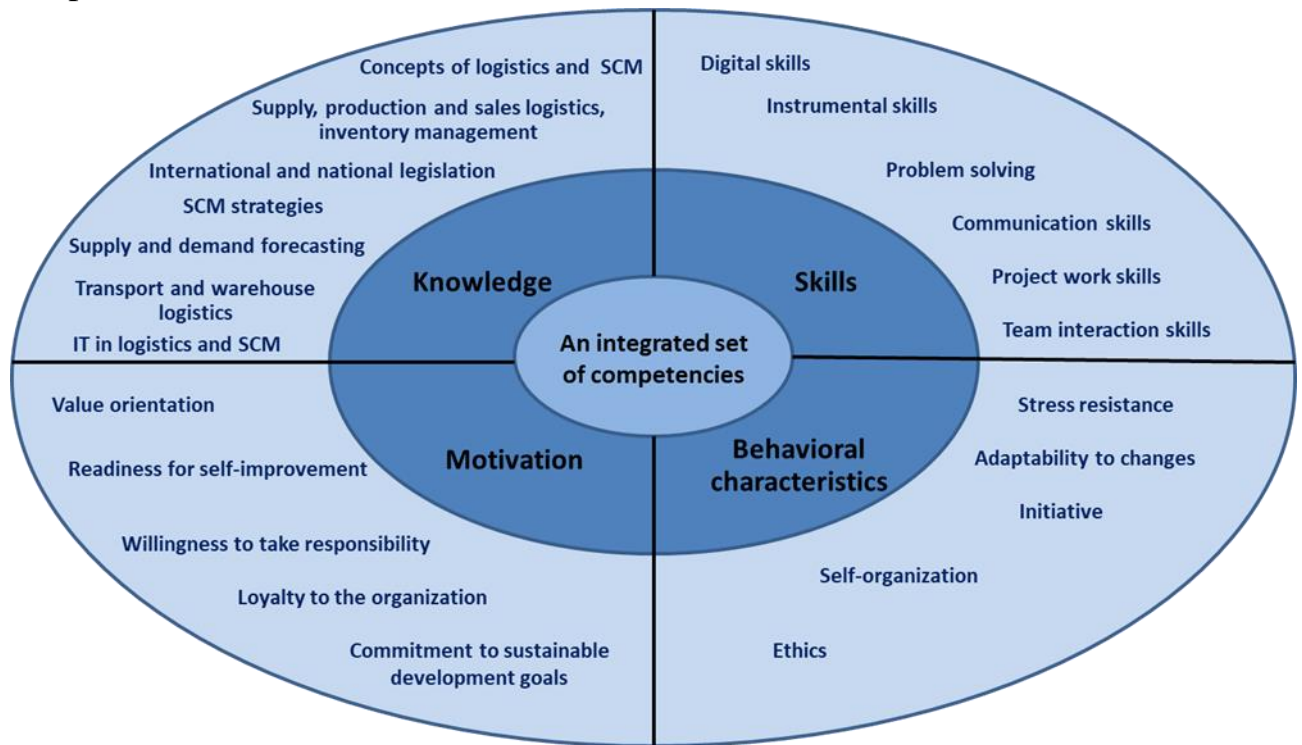


Fig. 3. Competency model for logistics and SC managers in the conditions of Industry 5.0

Therefore, logistics managers should know the evolution of logistics concepts and supply chain management, patterns of creation and development of logistics systems, characteristics and integration of business processes in supply chains, methodology for developing and making logistics decisions at strategic, tactical, and operational levels. In addition to subject area knowledge, logistics managers should have technical and technological knowledge, particularly organizational and technological schemes of logistics processes, features of using information and information-communication technologies for monitoring goods movement, data analysis and processing, demand forecasting and inventory management, transportation and warehousing management using automated and robotic systems, automation of production processes, etc.

Soft skills are essential for logistics managers to successfully manage complex logistics processes and ensure effective interaction among team members, partners, and clients. One of the key soft skills is communication. It is vital for establishing open and transparent relationships within the team, exchanging information between different departments, and coordinating with external partners. In logistics, many processes rely on the coordinated actions of various participants, so the ability to communicate clearly and effectively helps avoid mistakes and optimize work.

Teamwork skills are also indispensable for logistics managers, as supply chains often involve specialists from different areas, such as transportation, warehousing, procurement, and distribution. The ability to collaborate and find common solutions contributes to achieving goals, facilitates faster problem-solving, and enhances the overall efficiency of processes. Systems thinking is another crucial skill, as it allows managers to see the complete picture of logistics processes, understand the connections between different stages and elements of the supply chain, and anticipate potential impacts of changes.

Adaptability and flexibility are critical in today's rapidly changing environment, where both the market and technology are evolving quickly. Logistics managers must be able to respond promptly to external factors, such as changes in demand, supply disruptions, or new technologies. They should be ready to adjust their work approaches and implement innovations. Additionally, critical thinking helps them analyze situations, assess possible risks, and make well-informed decisions even under uncertainty.

Leadership skills are also an important component for logistics managers. The ability to motivate the team, set clear goals, and keep the group focused on achieving them helps improve process efficiency and reach high results. Furthermore, time management and resilience to stress are essential in high-pressure conditions and with tight deadlines, which are common in logistics. Logistics managers need to use time wisely, set priorities, and remain calm, which helps reduce stress levels for themselves and the team, thereby maintaining stable productivity.

Digital skills of logistics managers play a crucial role in the context of Industry 5.0, where human interaction with intelligent technologies becomes critically important for the efficiency and competitiveness of logistics systems. Industry 5.0 focuses on enhancing the level of personalization, flexibility, and adaptability of processes through close collaboration between humans and automated and robotic systems. This requires logistics managers to have a deep understanding of digital technologies and their potential for optimizing supply chains.

In particular, digital skills allow managers to effectively utilize tools for analyzing large volumes of data (Big Data) and apply artificial intelligence technologies for demand forecasting, inventory management, route optimization, and reducing logistics

costs. For example, knowledge of machine learning algorithms helps to create consumer demand forecasts based on historical data, enabling more accurate supply planning, reducing excess inventory, and preventing stock shortages.

Additionally, digital skills support the automation of key logistics processes. Managers should be able to work with intelligent transportation and warehouse management systems that integrate automated tools, such as autonomous vehicles and robotic warehousing systems. This increases the accuracy, speed, and efficiency of operations while minimizing the need for manual labor and reducing the likelihood of errors.

In the context of Industry 5.0, behavioral skills are of particular importance, as this stage of industrial development involves close integration of humans with intelligent technologies, automated, and robotic systems. In a world where technologies are becoming important partners, the ability to interact clearly and effectively not only with people but also with automated systems becomes critically important. Interaction with new technologies also requires a high level of emotional intelligence and adaptability. Logistics managers, in particular, need to be ready to quickly respond to new challenges, technological innovations, and market changes. They must be able to swiftly adapt their strategies and approaches to work, taking into account the constant changes in technologies, business processes, and consumer needs.

Stress resistance is necessary for the ability to remain calm, make sound decisions, and work effectively under pressure, even when the situation becomes tense or stressful. In the world of logistics, where unpredictable changes in demand, supply delays, logistics problems, or technical failures can arise suddenly, stress resistance allows the manager to maintain control of the situation. This is important not only for maintaining personal productivity but also for ensuring the effectiveness of the team and the stable operation of the system as a whole. Logistics processes often rely on a large number of participants and components, so the ability to work under stress without losing productivity or emotional balance is essential for minimizing risks and errors.

Self-organization, in turn, ensures the ability to independently plan and coordinate one's activities, set priorities, and complete tasks even in multitasking and dynamic conditions. Logistics managers often face the need to solve complex tasks simultaneously—ranging from analyzing large volumes of data to managing a team and coordinating with partners. Self-organization allows them to establish a clear action plan, identify important and urgent tasks, and remain effective even under high pressure. This is crucial not only to fulfill current duties but also to foster continuous process improvement while maintaining a high level of efficiency and professionalism.

The inclusion of the fourth component "Motivation" in the model corresponds to the modern understanding of competence, which can be described by the formula "I

know, I can, I'm able to, and I want to," i.e., how capable a specialist is in applying acquired knowledge, abilities, and skills in real conditions of professional activity. Even if a person has a high level of knowledge and skills, without proper motivation, they may not use them effectively. In the proposed model, a logistics manager should have an interest in continuous professional development, strive to acquire new knowledge and skills in logistics and supply chain management, achieve results that contribute to the company's success, increase the efficiency of its logistics operations, and competitiveness in the market.

It should be noted that Industry 5.0 emphasizes the integration of technologies to increase efficiency and reduce negative environmental impact, which includes implementing sustainable practices in logistics and supply chain management. That is why logistics managers should be able to implement sustainable practices and solutions to reduce harmful emissions into the environment, demonstrate high ethical awareness and social responsibility in decision-making, and have a commitment to sustainable development as part of corporate culture and personal professional values.

Thus, in the context of Industry 5.0, the skill set of logistics managers undergoes significant changes, as technologies and automated systems become an integral part of their work. Key requirements for these professionals now include not only technical and analytical skills, but also a high level of behavioral and digital competencies, such as adaptability, the ability to respond quickly to changes, stress resistance, self-organization, and effective interaction with intelligent technologies. Leadership qualities also become important, as they enable managers to lead interdisciplinary teams and work effectively in high-dynamics environments and changing market conditions. These changes necessitate the improvement of existing competency models for logistics managers, orienting them towards more flexible, technologically advanced, and strategically focused approaches to supply chain management. Competency models should not only account for traditional logistics knowledge but also integrate modern digital technologies, analytical tools, and the development of soft skills that respond to the challenges of the new industrial revolution. Given these requirements, it is essential to modify educational programs at universities that prepare logistics managers. Programs should focus on the development of comprehensive competencies that cover both technical and soft skills, considering the specifics of Industry 5.0. Educational programs must emphasize the preparation of specialists who are ready to work in rapidly evolving technological environments, implement innovations, and effectively integrate automated systems into supply chain management processes. Enhancing educational standards and practical training programs will help ensure the preparation of highly skilled professionals who can successfully manage change in logistics and ensure effective integration of

technologies into business processes. A detailed description of the qualification model is provided by the authors in the article [41].

The study established the following:

1. The analysis of global and regional trends in the development of the logistics industry shows that logistics is a key component of the transformation towards Industry 5.0, as the implementation of digital technologies serves as the foundation for the integration of automated systems that enhance the efficiency and flexibility of supply chains. These technologies not only provide greater reliability and transparency in processes but also enable companies to meet the demands of modern international markets, which place particular emphasis on sustainable practices and environmental responsibility. In the context of Industry 5.0, logistics systems become not only economically efficient but also environmentally sustainable, allowing businesses to create competitive advantages, meet consumer demands, and strengthen their reputation in the global market.

The logistics industry of Ukraine is an important part of the international logistics market and, accordingly, is undergoing significant transformations under the influence of Industry 4.0 and 5.0. The implementation of digital technologies, process automation, and the use of intelligent systems are becoming the main driving forces behind the development of domestic logistics. Despite the challenging geopolitical and geoeconomic conditions, as well as the consequences of military actions, the Ukrainian logistics services market demonstrates the ability to quickly adapt and respond to new challenges. This reflects the flexibility and resilience of the industry, which, despite difficulties, continues to modernize by integrating cutting-edge technologies to enhance efficiency and maintain competitiveness in the international market.

The ecosystem approach has proven to be essential in justifying the transformation of the business environment within supply chains, identifying the key characteristic of this environment as the active use of digital technologies by its participants to automate business processes. This integration not only increases efficiency and reduces costs but also improves communication, data exchange, and the ability to track the movement of goods throughout the entire chain. The proposed solution involves using digital platforms as open ecosystems, bringing together various stakeholders, including companies, universities, startups, and research organizations, to jointly develop innovative products, technologies, or solutions. A notable example is the Industry4Ukraine platform, which has developed a Manifesto on the post-war reconstruction of Ukraine's economy, advocating for sustainable development principles and the transition of the domestic industry to Industry 5.0. The adoption of automated production processes, robotic systems, and artificial intelligence technologies is seen as a way to accelerate the restoration of industrial capacity while minimizing costs. However, this transition requires a shift in approaches to the

education and training of specialists, particularly in logistics and supply chain management, to meet the demands of these new conditions.

A competency model for training logistics managers in the context of Industry 5.0 has been developed. This model provides a structured description of the knowledge, skills, behavioral characteristics, and other qualities required for successfully performing specific job tasks or achieving productivity in a particular role. Key requirements for such professionals now include not only technical and analytical skills but also a high level of behavioral and digital competencies, such as adaptability, the ability to respond quickly to changes, stress resilience, self-organization, and effective interaction with intelligent technologies. In light of these requirements, it is necessary to modify educational programs in universities that prepare logistics managers. These programs should focus on the development of comprehensive competencies that include both technical and soft skills, considering the specifics of Industry 5.0. Improving educational standards and practical training programs will help ensure the preparation of highly qualified professionals capable of successfully managing changes in logistics and ensuring the effective integration of technologies into business processes.

The prospect for further research should be the development of new innovative approaches to organizing logistics processes in the context of Industry 5.0. These approaches will ensure the efficiency, resilience, and flexibility of supply chains while maintaining a high level of security, transparency, and environmental responsibility. These innovative approaches should be reflected in the structure and content of core and elective courses that shape logistics specialists.

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# THE CURRENT STATE AND TRENDS IN THE DEVELOPMENT OF E-COMMERCE IN THE WORLD AND IN UKRAINE

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Modern innovative technologies, the spread of the Internet, and the Covid-19 pandemic caused the active development of the e-commerce sector in the world and in Ukraine, which is characterized by an increase in sales and significant prospects for further growth.

In today's conditions, electronic commerce is an effective tool for increasing the competitiveness of domestic enterprises, expanding their sales markets in the conditions of growing risks for their activities, which are aggravated as a result of the war in Ukraine [16, p. 4]. When using this method of selling goods, enterprises should analyze both domestic and foreign experience in this field. Today, e-commerce is an important component of the digital economy.

In a number of scientific works, the essence and current state of e-commerce in the world and in Ukraine have been investigated. In particular, Zayats O.I., Kapko Ya.Ye. point out that e-commerce is a driving force for business development in the whole world [23]. Tsybrova A.V. determines the importance of e-commerce for the development of the national economy in two aspects, analyzes its advantages for various subjects [19, p. 144]. Stezhko N.V., Shevchuk O.I. analyze the global e-commerce market in the conditions of business digitalization [17, p. 21-24]. Sak T.V. determines the main trends and problems of electronic commerce in the world and the spread of innovations in the process of its realization [15, p. 36-39]. Kublitska O. examines the current state of the e-commerce market in Ukraine during the war period and the trends of its post-war recovery [12, p.99-105]. Kolupaieva I.V., Bezsonov S. analyze the state and trends of e-commerce in Ukraine and directions for its further development [11, p. 76-78]. Marusey T.V. reveals the economic consequences of the emergence of electronic commerce and its main development trends [13]. Hlinenko L.K., Daynovskyy Yu.A. studied the development of electronic commerce and ways of adapting to the conditions of war [8, p. 21-37]. Scientific publications actively explore the peculiarities of conducting electronic commerce in various spheres of the economy. In particular, Demko M.Ya., Krykavskiy Ye.V., Kosar N.S., Kuzo N.Ye. it is proposed to use loyalty programs to increase the client base and, accordingly, the volume of sales of products online by commercial banks of Ukraine [2, p. 223-225], they analyzed the peculiarities of the realization of banking products using Internet banking and mobile banking [2, p. 76-78].

The study is based on the analysis of statistical data and information from research institutions regarding the leaders of e-commerce in the world and in Ukraine and its growth prospects.

According to the secondary marketing information provided by Eurostat, in the European Union e-commerce retail market study in 2023, the average number of Internet users purchasing goods online in the EU was 70%. At the same time, the average number of Internet users who buy goods using the Internet in Europe in general is higher and is about 71%. The conducted research shows that the percentage of Internet users who buy goods via the Internet has increased significantly in the last five years. However, the growth rates are different depending on the country, although in general it is possible to note a significant increase in the share of Internet buyers (Table 1) [5].

Table 1

Dynamics of the share of Internet buyers in different countries of the world  
for 2019-2023

Country	2019	2020	2021	2022	2023
EU average	60%	65%	67%	68%	70%
Eurozone	63%	67%	69%	69%	71%
Austria	62%	66%	63%	66%	72%
Belgium	66%	73%	75%	75%	75%
Bulgaria	22%	31%	33%	41%	45%
Croatia	45%	55%	57%	56%	59%
Cyprus	39%	47%	54%	50%	57%
Czechia	64%	72%	75%	77%	78%
Denmark	84%	89%	91%	88%	89%
Estonia	68%	68%	70%	71%	73%
Finland	73%	76%	79%	79%	79%
France	70%	not available	76%	76%	77%
Germany	79%	83%	76%	76%	77%
Greece	39%	46%	54%	59%	58%
Hungary	49%	60%	66%	70%	70%
Iceland	80%	83%	85%	not available	not available
Ireland	67%	74%	87%	85%	86%
Italy	38%	44%	51%	49%	51%
Latvia	47%	56%	62%	62%	62%
Lithuania	48%	54%	60%	60%	61%
Luxembourg	72%	79%	81%	81%	80%
Malta	58%	63%	65%	68%	68%
Netherlands	81%	87%	89%	88%	92%

Norway	82%	85%	92%	92%	91%
Poland	54%	61%	61%	65%	64%
Portugal	39%	45%	52%	54%	55%
Romania	23%	38%	38%	46%	50%
Slovakia	60%	62%	75%	77%	77%
Slovenia	56%	63%	71%	63%	66%
Spain	58%	63%	67%	68%	69%
Sweden	82%	84%	87%	86%	89%
United Kingdom*	87%	90%	not available	not available	not available

\*Until Brexit.

Source: [5]

According to Eurostat, from 2013 to 2023, there is a growing trend of Internet buyers in various countries of the world. In particular, in Bulgaria, Estonia and Romania, this share increased by three and four times, respectively (Table 2) [5].

Table 2

Comparison of the share of Internet buyers in different countries  
of the world in 2013-2023

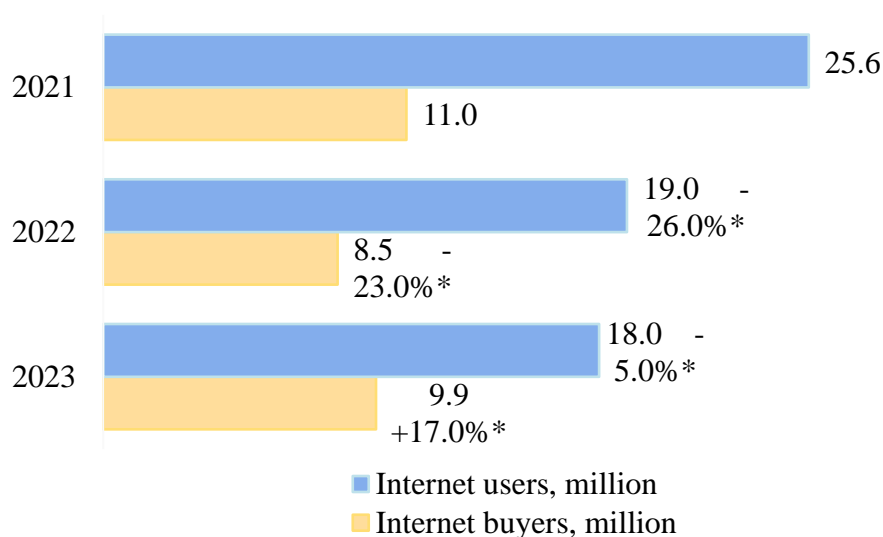
Country	2013	2023
EU average	47%	70%
Eurozone	47%	71%
Austria	54%	72%
Belgium	48%	75%
Bulgaria	12%	45%
Croatia	26%	59%
Cyprus	25%	57%
Czechia	36%	78%
Denmark	77%	89%
Estonia	23%	73%
Finland	65%	79%
France	59%	77%
Germany	69%	77%
Greece	25%	58%
Hungary	29%	70%
Iceland	56%	not available
Ireland	46%	86%
Italy	20%	51%
Latvia	32%	62%
Lithuania	26%	61%
Luxembourg	70%	80%
Malta	46%	68%
Netherlands	69%	92%
Norway	73%	91%

Poland	32%	64%
Portugal	25%	55%
Romania	8%	50%
Slovakia	44%	77%
Slovenia	36%	66%
Spain	32%	69%
Sweden	73%	89%
United Kingdom*	77%	not available

\*Until Brexit.

Source: [5]

Such global trends regarding the growth of the share of Internet buyers also affected Ukraine. In 2023, the total amount of online sales in Ukraine increased by 17% compared to 2022, 9.9 million Ukrainians made purchases via the Internet (Figure 1) [9; 10].



\*year-over-year growth and decline;  
according to Kantar, the State Statistics Service of Ukraine and EVO

Fig. 1. Number of Internet users and Internet buyers in Ukraine for 2021-2023, million persons and their increase compared to the previous year, %

Source: research by the EVO group of companies [9; 10]

This was largely due to military operations in various regions, and due to purchases on the Internet, Ukrainians gained access to goods that were sold in various regions. The growth of e-commerce volumes also provided sellers in Ukraine with access to consumers in different regions, allowing them to implement a development strategy in the market. An important advantage for buyers when they buy goods via the Internet is that the prices for such goods are often lower than when bought in ordinary stores.

The e-commerce market in Ukraine is characterized by the significant level of concentration. In figure 2 the TOP-10 leaders of the e-commerce market in Ukraine and their share in the total volume of e-commerce in Ukraine in 2023 are shown.

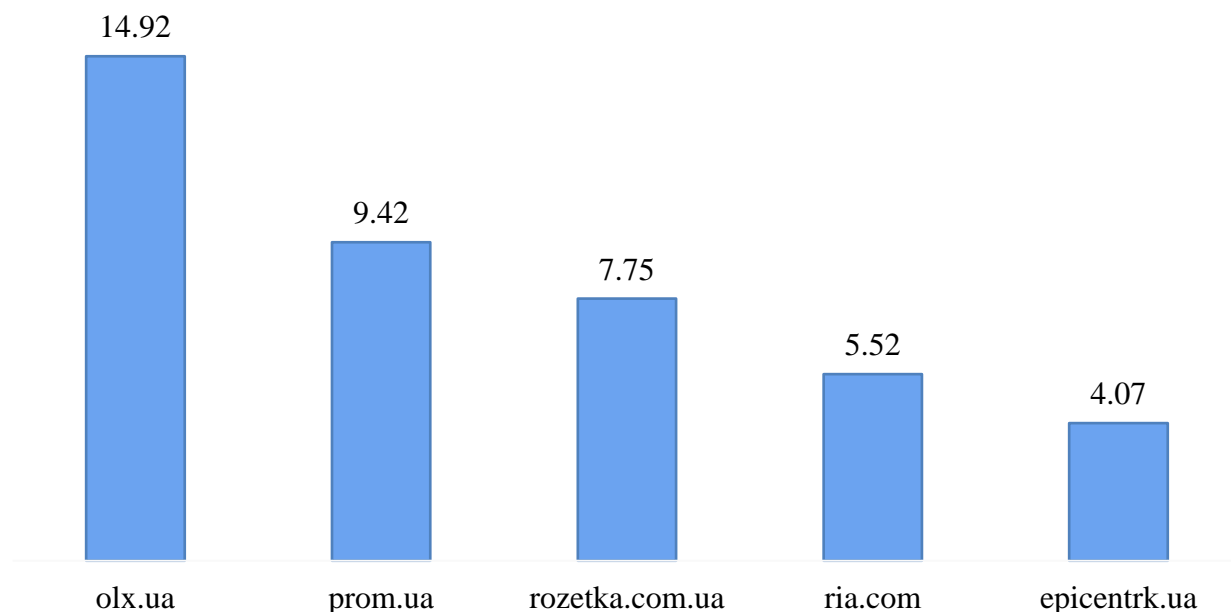


Fig.2. TOP-5 leaders of the e-commerce market of Ukraine in 2023 and their shares, % [18]

The largest leader in the e-commerce market in Ukraine is the olx.ua site, which covers 14.92% of the total demand for goods in the field of electronic commerce in Ukraine, but this site can be considered a bulletin board, not a marketplace. On it, goods are sold, real estate is sold, job offers are submitted, etc. Real estate and various spare parts are sold on ria.com, whose share in the total volume of e-commerce in Ukraine is 5.52%. Rozetka.com.ua and epicentrk.ua account for 7.75% and 4.07% of e-commerce volumes, respectively. They also promote their own brands, but it is difficult for other sellers to compete with them. prom.ua accounts for 9.42% of the total volume of e-commerce in Ukraine, there are more loyal conditions for sellers [18].

The largest e-commerce markets in the world are the TOP-10 countries such as China, USA, Great Britain, Japan, South Korea, India, Germany, Indonesia, Canada, France (Table 3) [1].

Table 3 shows that China is the leader by volume of e-commerce in the world.

Table 3

#### The largest e-commerce marketplaces in the world

Country	E-commerce sales volumes in 2023	The best e-commerce brands
China	\$3.02 trillion	JD.com (US\$132.76 billion annual sales) Tmall (US\$22.19 billion annual sales) VIP.com (US\$16.38 billion annual sales)



USA	\$1.16 trillion	Amazon (US\$130.27 billion annual sales) Walmart (US\$52.40 billion annual sales) Apple (US\$30.99 billion annual sales)
UK	\$195.97 billion	Amazon UK (US\$15.36 billion annual sales) Sainsbury's (US\$7.04 billion annual sales) Tesco (US\$7.04 billion annual sales)
Japan	\$193.42 billion	Amazon Japan (US\$12.83 billion annual sales) Apple (US\$3.61 billion annual sales) Yodobashi (US\$2.50 billion annual sales)
South Korea	\$147.43 billion	Coupang (US\$18.25 billion annual sales) Himart (US\$1.34 billion annual sales) SSG (US\$1.33 billion annual sales)
India	\$118.90 billion	AJIO (US\$2.15 billion annual sales) Reliance Digital (US\$1.37 billion annual sales) JioMart (US\$1.24 billion annual sales)
Germany	\$97.32 billion	Amazon DE (US\$16.10 billion annual sales) OTTO (US\$5.06 billion annual sales) Zalando (US\$2.92 billion annual sales)
Indonesia	\$97.14 billion	JD (US\$1.02 billion annual sales) Blibli (US\$697.4 million annual sales) Orami (US\$372.0 million annual sales)
Canada	\$82.81 billion	Amazon CA (US\$11.51 billion annual sales) Walmart (US\$4.15 billion annual sales) Costco (US\$2.55 billion annual sales)
France	\$79.36 billion	Amazon FR (US\$5.14 billion annual sales) Shein (US\$1.75 billion annual sales) Veepee (US\$1.57 billion annual sales)

Source: generated from data [1]

Table 4 shows the volumes of retail e-commerce in the world and their growth rates for 2016-2027.

Table 4

Dynamics of retail e-commerce volumes in the world and their growth rates  
for 2016-2027

Years	Volumes of retail e-commerce in the world, \$ trillion	The growth rate of retail e-commerce in the world, %
2027*	8.03	7.59
2026*	7.46	8.60
2025*	6.87	8.63
2024*	6.33	9.44
2023	5.78	8.91

2022	5.31	6.48
2021	4.98	17.42
2020	4.24	26.77
2019	3.35	12.37
2018	2.98	25.19
2017	2.38	29.11
2016	1.84	—

\* - Forecast

*Source: according to data Statista [14]*

The capacity of the global e-commerce retail market is expected to reach \$8 trillion in 2027, according to forecast data from Juniper Research. By 2027, the number of buyers in the e-commerce market in the world will be 5.3 billion people. There are leaders in the e-commerce market in the world. Amazon accounts for 37.8% of all sales of goods in the field of electronic commerce, that is, it is the leader in this market. An important component of e-commerce is the sale of goods through social networks. It is expected that by 2026, the volume of trade through social networks will reach \$2.9 trillion. However, the possibility of fraud in this area complicates and restrains the development of e-commerce [7, p. 95].

According to the table there is a tendency to increase the share of e-commerce sales in the total volume of retail trade in the world. Global retail e-commerce sales forecast: 20.3% in 2024, 21.2% in 2025, 22.2% in 2026, 23.0% in 2027 (Table 5) [14].

In addition to scientific and technical and economic factors, the development of the e-commerce market is also influenced by political factors. According to Statista Market Insights, the capacity of the e-commerce market in Ukraine grew until 2022, but with the beginning of the war in 2022, it significantly decreased and amounted to 361.51 million US dollars. The situation improved in 2023, when the e-commerce market of Ukraine gradually began to recover and grow. According to forecast data, the capacity of the e-commerce market in Ukraine will reach 1,755.45 million USD by 2024, 3,398.08 million USD by 2025, 3,858.80 million USD by 2026, and 4,262.86 million USD by 2027, 4,586.34 million USD by 2028, 4,865.69 million USD by 2029, that is, it will grow dynamically. By 2029, it is expected that the number of buyers in the e-commerce market in Ukraine will be 9.8 million people [4].

Table 5

Dynamics of the share of e-commerce sales in total retail trade in the world  
for 2019-2027

Years	Share of e-commerce sales in total global retail sales, %
2027*	23.0
2026*	22.2
2025*	21.2

2024*	20.3
2023	19.5
2022	18.9
2021	18.9
2020	17.8
2019	13.8

\* - Forecast

Source: according to data Statista [14]

Figure 3 shows the dynamics of the e-commerce market capacity in Ukraine.

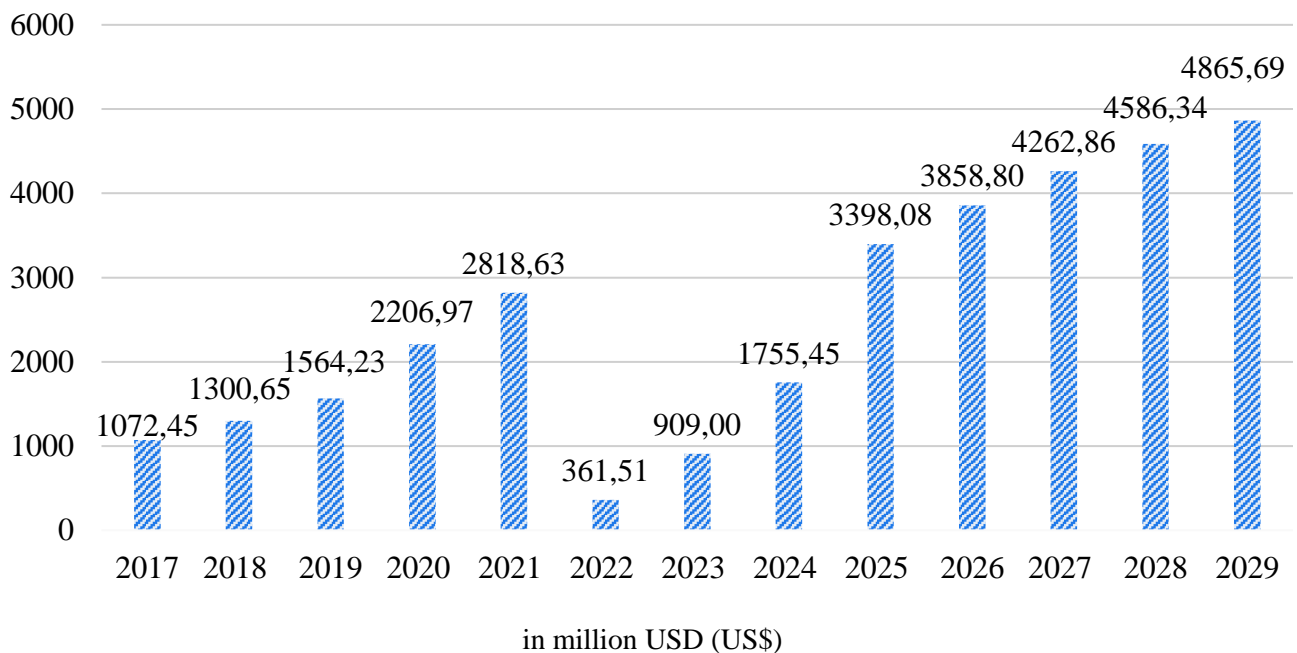


Fig. 3. Dynamics of e-commerce market capacity in Ukraine for 2017-2029 (forecast for 2024-2029) [4]

Source: according to data Statista Market Insights

Today, the e-commerce market in Ukraine faces various challenges, including[22; 3]:

- security and trust (customers' cautious attitude towards making purchases via the Internet, as there is a possibility of danger regarding fraud);
- military challenges (the impact of war on the functioning of the e-commerce market, in particular logistics problems and infrastructural challenges (power outages, interruptions or lack of Internet in the affected regions);
- competition (big brands create their own marketplaces, contributing to increased competition);
- changes in the behavior of consumers (in the conditions of war, consumers give preference to essential goods - food, medicines, household goods);
- global consequences and recovery (the war affected not only the Ukrainian market, but also the global e-commerce market. Companies were forced to change their

supply strategies and terms of cooperation with their customers. The e-commerce market in Ukraine began to recover, but in the future it will depend on the stability of the situation and continued investment in its development and infrastructure).

Despite various challenges, the e-commerce market of Ukraine is developing.

The volumes of retail trade and electronic commerce in Ukraine are growing. In 2023, the total sales of goods and services in Ukraine via the Internet accounted for 10% of the total sales of goods in retail trade [9].

The factors that contributed to the increase in sales of goods in the field of electronic commerce in Ukraine include [21]:

- increasing the number of online stores, including those that create trade networks (consumers buy and choose a variety of goods and services from them at any time, focus on customers and their needs, and use convenient methods of payment and delivery of goods).

- presence of marketplaces that provide high visibility of products. In 2023, the volume of customer spending on ordering goods in marketplaces increased by 7% in the world and by more than 23% in Ukraine [20];

- the use of an omnichannel approach (when enterprises combine the use of traditional and electronic channels for the sale of goods, which allows customers to buy goods both on the Internet and in traditional stores);

- active promotion by enterprises of purchases of goods on the Internet and social networks, development of loyalty programs and various discounts and promotions to encourage consumers to purchase online);

- the possibility of obtaining analytics and providing, on this basis, the personalization of offers for buyers;

- improvement of the logistics system and increase in the efficiency of delivery of goods to customers;

- entry of enterprises to international markets (creation of international versions for their online stores, use of international payment systems and different languages of the site in order to gain international experience and attract new customers);

- active use of innovations and experiments in e-commerce, use of chatbots and virtual reality to attract new customers.

The priority directions for the further development of e-commerce in the world are [6]:

- increasing the level of transparency;

- implementation of measures to increase consumer confidence (we are talking about the regulatory framework for protecting the interests of consumers, privacy and cyber security, as well as regulating the sending of spam);

- development of measures to promote the further organization of e-commerce (solving licensing and electronic payments and electronic procurement problems, protection of intellectual property rights, recognition of electronic signatures);

- implementation of measures to ensure openness (the procedure for ensuring cross-border data flows and localization, solving problems of transmission and access to the source code);

- legislative initiatives for the development of electronic commerce (additional measures to simplify customs procedures, technical assistance, regulatory cooperation between countries);

- increasing the transparency of the multilateral trade system (exchange of information on electronic commerce between countries).

In the development of electronic commerce, both in the world and in Ukraine, there is a tendency to increase their volumes. With the increase in Internet users, the e-commerce market is also developing, because among the various possibilities of the Internet, many consumers shop online.

The percentage of Internet users in the world and in Ukraine for the years 2019-2023 has increased, and at the same time there is a significant increase in the number of buyers who buy goods online.

The e-commerce market in Ukraine and the world is characterized by a significant level of concentration. The leaders of the e-commerce market in Ukraine include olx.ua, prom.ua, rozetka.com.ua, ria.com.ua, epicentrk.ua.

The largest e-commerce markets in the world are the markets of China, the United States, Great Britain, Japan, South Korea, India, Germany, Indonesia, Canada, and France.

The war in Ukraine affected the e-commerce market and brought changes to its functioning. Facing difficult challenges in 2022, the e-commerce market in Ukraine is gradually recovering today and adapting to new realities. Today, the e-commerce market faces a variety of challenges, including consumer security and trust, military challenges, increased competition, changes in consumer behavior, the global impact of the war in Ukraine and its subsequent recovery.

The main factors that contributed to the growth of e-commerce in Ukraine include: the creation of new online stores and marketplaces, the use of an omnichannel approach by domestic enterprises in the field of sales of goods, active measures to encourage consumers to purchase goods online, the use of analytics and personalization of offers, improvement of logistics and delivery of goods, exit of domestic enterprises to international markets, use of innovations and experiments in the field of electronic commerce.

The latest technologies, development of strategies, adaptation of business entities to new challenges are important in the development of electronic commerce.

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## **MARKETING TRENDS AND DEVELOPMENT OF MARKETING AGENCIES SERVICES**

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Modern companies, operating locally or transnationally, are increasingly faced with the problem of uncertainty in consumer behavior, which is influenced by various trends. This turns into a difficult situation of defining and forecasting marketing trends. It is especially difficult to develop a business in crisis and war times. And it is marketing that works to increase potential customers awareness about companies, to promote new and existing products, which helps companies not only to exist, but also to improve their performance compared to previous years.

In recent years, the marketing agencies market has seen the emergence of many new micro-enterprises, which is due to the low entry level into this business. The relatively short duration of training for specialists in social networks, together with the appearance on the labor market of a generation that has lived in social networks since childhood, determines the offer saturation in this market. In the service spheres, with the crisis onset, there was a need to reduce marketing costs, and the demand for the marketing services segment with lower price category increased. The small-medium agencies competition with freelancers or agencies with several people is complicated by a large difference in pricing. And the lack of marketing expertise in entrepreneurs makes it difficult for them to evaluate the difference between offers. Marketing agencies began to develop unique value propositions in narrow niches or to explore narrower niches and their challenges in order to move into a market with a higher entry level and higher marketing expertise of entrepreneurs.

For a business, a well-thought-out marketing strategy is an integral part of building effective interaction with the target audience, which affects the perception and attitude of customers towards the brand. And often it is marketing agencies that help build this strategy for the business. Adapting the marketing strategy to modern trends allows marketing agencies to always remain in the client's field of vision, which contributes to increasing not only the client's business, but also the recognition and popularity of marketing agencies. Therefore, it is extremely important for marketing agencies to be able to quickly adapt to new challenges and maintain a competitive



advantage in the conditions of market globalization, changing consumer trends, international crises and other obstacles. Accordingly, it is relevant to research the trends in the market of marketing services and the ways in which marketing agencies manage to attract customers.

Scientists who are interested in the marketing topic in Ukraine pay considerable attention to the new marketing tools study and the communication policy development of enterprises in order to attract customers. To understand the gradual renewal of approaches in marketing and the impact on processes, as well as negative factors in Ukraine, it is worth highlighting the most recent of such studies [1-12].

In the study [1], it was found that the use of optimal conversion digital marketing tools allows to significantly reduce financial risks and increase the companies profitability. The main future development direction of global marketing has been established - immersive strategies based on deep integration and the AI technologies use, aimed at increasing the interest and consumers involvement. AI is also considered in the works of Yu. Romanusha, I. Bilyk, K. Lavryk, V. Byba, K. Korsunova, A. Strungar, and others.

I. Zakryzhevskaya, A. Mostova, M. Potvora [2] conducted research to determine the digital marketing impact on product quality and organizations competitiveness. The main conclusion is that digital marketing determines business development in the modern digital world. It provides companies with an opportunity to attract the target audience attention and increase their interest and interaction with the product.

T. Bilousko [3] in her work described how, with the Serpstat, Ahrefs and SimilarWeb services help, webmasters, marketers and SEO specialists can effectively improve marketing strategies, research competitors, study the audience, improve the website and increase its visibility in search engines.

O. Krupskyi, Yu. Stasiuk [4] in the study considered the use results and potential of ChatGPT in marketing strategies and in other marketing tasks, in particular in online communications, where personal interaction with customers is important, and formulated recommendations for the optimal GPT use to attract and retain customers.

The article authors [5] N. Karpenko, M. Ivannikova conducted a comparative analysis of modern trends in the marketing application at small business enterprises, formulated the key components of their development thanks to innovative marketing technologies - strategic management system improvement, HR-marketing strategy, cloud storage, AI, ChatGPT, Big data, branding concepts, etc.

R. Tymocko, Ye. Krykavskyy, I. Petetsky in [6] point out that the development strategies topic of Ukrainian marketing companies is not sufficiently disclosed, since researchers mainly analyze Internet marketing as a phenomenon in general, and there are studies on the marketing companies communications, enterprises communications on the Internet, marketing tools adaptation to market changes. With the interviews and

analytical data help, this work reveals the main problems in the companies marketing, provides a channels list that should be used in the a marketing strategy implementation, and steps when entering a new market niche.

O. Korotun in [7] paid special attention to the digital channels role in creating personalized and effective marketing strategies, analyzed successful use examples of an omnichannel approach with its advantages in forming long-term relationships with clients and increasing their loyalty.

The article by O. Syvolovska [8] revealed the necessity of using native advertising in the Internet space, taking into account the social networks, blogs and bloggers popularity, including during the martial law in Ukraine. The blogosphere and native advertising classification, its goals and directions is also provided.

H. Chmil, based on the analysis results of the potential audience and demographic users indicators in her study [9] justified the importance of adapting marketing approaches to the each social network specifics. Priority is given to cooperation with popular influencers to promote brand products or services, taking into account both commercial and socially oriented aspects.

The marketing development in Ukraine depends on the progressiveness and marketers innovation at enterprises in various activity fields, as well as on the skills development and abilities, as well as on the successful promotion of their services by marketing agencies employees. Many agencies that used to offer traditional marketing services have in the last few years retrained to offer digital services as well, and those digital agencies that have only been involved in digital marketing often expand their services to strategy development, segmentation and comprehensive marketing services for businesses. Along with this, it is stated in [6]: "Marketing agencies are faced with the need to choose a development strategy, which involves either growth due to the number of low-margin services customers, or increasing expertise in a specific niche on the market and building unique services with high margins".

A deeper understanding of the research material is connected with description of the role and types of marketing agencies. A marketing agency (hereinafter MA) is a key player in the business world, providing a wide range of advertising, promotion and marketing services for various sizes and industries companies. Agencies play an integral role in creating and implementing strategies to promote products and services, attract customers and increase business profitability. The main tasks and, accordingly, MA services are [10]:

1. Strategic planning and UTO: marketing and advertising strategies development, promotion that meet the client's specific goals and needs; market and competitors analysis; TA analysis.

2. Advertising and promotion: development and implementation of advertising campaigns that attract the target audience attention to the client's products or services (logos, brochures, websites, etc.).

3. Digital marketing and content development for digital platforms (websites, blogs, social media).

4. Search engine optimization (SEO) and content marketing.

5. Social media and advertising campaigns management in the Internet.

6. PR activities and other activities coordination to increase brand recognition and create a positive image.

7. Branding: creating and developing a company's brand and image is an important part of marketing strategies.

8. Analysis and tracking of results: the effectiveness of marketing strategies should be tracked and analyzed.

MA is addressed by: small and medium-sized enterprises that do not have internal marketing departments; large corporations for additional expertise and resources to support internal marketing teams or to implement individual projects; startups and new businesses may be limited by budget and labor and/or marketing resources. The difference between a marketing and advertising agency is: 1) MAs provide a wider services range; 2) MAs are usually more focused on the strategic planning of the client's business; 3) MAs build longer-term relationships with clients [10].

In general, MA can be divided into the following most popular types: design agencies; creative agencies; communication/PR agencies; advertising agencies; digital advertising agencies; consulting companies; marketing outsourcing companies [6]. Channels and methods of attracting customers, which are also used by MA for companies, are: email marketing; paid search; Google contextual advertising; comprehensive SEO promotion, local SEO; targeting in social networks; site, landing page; trade show; loyalty programs; blog; free trial period; influencer marketing; referral programs; YouTube; various social networks; polls in social networks; events; dynamic remarketing; native advertising; crowd marketing; promotion in price aggregators; partnership relations; WOM-marketing; Outdoor/street advertising; inbound marketing, etc. [11, 12].

This study contains the analysis method of scientific sources, analytical data and statistical information on the publication topic; descriptive research method; classification method by grouping marketing agencies according to certain characteristics; a comparison method when analyzing data on customer activity on websites and social networks; generalization method - for recording the general conclusions of the study.

First, the study presents statistical data on volumes and changes in marketing services for different years to identify the main changes and the most popular MA

services, as well as data from MAMI, which creates a rating by MA revenues and indicates which services are in the greatest demand among well-known international and Ukrainian companies in Ukraine.

Then the main marketing trends affecting the marketing agencies and companies activities were researched. Since the attention of researchers is more focused on the enterprises marketing analysis, and not of marketing agencies, it is relevant to investigate how, taking into account the economy crisis period in general, MAs use marketing tools and channels to offer their services, and which of them bring better results for further development.

Therefore, the next step was analysis, through which channels digital marketing agencies attract potential customers and existing customers to their websites, individual engagement indicators (with the help of marketing services Similarweb and Serpstat) [13, 14]. Since 55 marketing agencies, which included in the ratings and recommendations, have blogs and/or publications in media with useful information for business, and/or are on the first searches pages, were selected for analysis [15, 16].

The main trends that appeared in the first half of 2024 in marketing services are large-scale and complex productive projects, a new ideas variety and a tasks variety, the introduction of new innovative technologies. Compared to 2022, in 2023 the market volume of marketing services - International Association of Marketing Initiatives participants (IAMI) - increased by 18% and amounted to UAH 2,858 million [17]. Marketing services Trade marketing, Loyalty marketing, Consumer marketing will increase in 2024 by 20%, 15% and 20%, respectively (as a growing demand result for more flexible, dynamic and controlled outsourcing) (Table 1).

Table 1

Volumes and changes in marketing services for different years

Marketing services	Volume 2020, million UAH	% change 2020 to 2019	Volume 2021, million UAH	% change 2021 to 2020	Volume 2022, million UAH	% change 2022 to 2021	Volume 2023, million UAH	% change 2023 to 2022	Volume 2024, million UAH	% change 2024 to 2023
<b>Market capacity MC, total</b>	<b>5 299</b>	<b>-25%</b>	<b>5 959</b>	<b>12%</b>	<b>2 387</b>	<b>-60%</b>	<b>2 828</b>	<b>18%</b>	<b>3 388</b>	<b>20%</b>
<i>Including:</i>										
Trade marketing (Merchandising, Trade promo, Personnel	2 161	<b>-15%</b>	2 377	<b>10%</b>	1 188	<b>-50%</b>	1 426	<b>20%</b>	1711	<b>20%</b>

motivation and control programs)										
Loyalty marketing (Mailing, DB management, Contact-Center)	1 066	-5%	1 119	5%	560	-50%	616	10%	708	15%
Consumer marketing	1 270	-20%	1 460	15%	438	-70%	526	20%	631	20%
Event Marketing and Sponsorship	802	-55%	1 003	25%	201	-80%	260	30%	338	30%

Source: [17]

Event marketing and sponsorship may grow by 30% compared to 2023. Consumers are increasingly rallying around Ukrainian brands, which are a good example of social initiatives. More companies partner with charities and support inclusive producers; there is also an increase in requests for events, which are a tool for collecting funds to help the army, victims of russian aggression, etc. Previous forecasts could be doubled, but military action also affects stability and investment in marketing campaigns [17].

According to the rating conducted by MAMI, in general, the marketing service agencies dynamics in 2023 is quite positive. 17 agencies took part in the 17th Rating according to income for 2023, Table 2 shows their names, key services and clients.

Most agencies managed to hold their positions, a small rotation is quite natural considering the market situation [18].

Table 2

Key services and clients of agencies participating in the MAMI rating in 2023

Position in 2023	Agency name	Key services	Main clients 2023
<b>Group 1. Income (revenue) from the sale of UAH 150-650 million.</b>			
<b>1</b>	<b>Adsapience</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Creative Services, PR, logistics, warehousing	Mastercard, Lego, Kyivstar, PUMB
<b>2</b>	<b>Havas Engage</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Creative Services	Mondelēz Ukraine, Visa International Service Association, L'Oreal, Imperial Tobacco Ukraine, JDE Ukraine, Electrolux

3	<b>LEX MARKETING</b>	Trade marketing, Outstaffing	Beiersdorf, Johnson&Johnson, Henkel Beauty Care, GlaxoSmithKline Healthcare (HALEON), Borjomi, Essity, Evyap, Conti
4	<b>Paradigm Group</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Loyalty marketing	British American Tobacco Ukraine, Kyivstar, Abbott Laboratories S.A., AGCO International, Bayer Ukraine, Bosch Ukraine, Biocodex, Abbvie, Teva, Terra Food Group
5	<b>Talan Group (Talan Communications, Clever Force)</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Loyalty marketing	ReckittBenkiser, Nestle, JTI, Canon, Nova Post, Bacardi-Martini, Cersanit, AristonThermo
6	<b>Pulse Marketing Agency</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship	JTI, Kimberly Clark, Carlsberg, MXII, Bosch, Unilever, Ukrtelecom
<b>Group 2. Income (revenue) from the sale of UAH 50-150 million.</b>			
7	<b>TEAM247</b>	Trade marketing	PBK Radomyshl, Unilever, Sandora, Philip Morris
8	<b>All Motion</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Loyalty marketing, Creative Services	Coca-Cola, Loreal, Teva, Signify
9	<b>TMSCo</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Loyalty marketing	Johnson & Johnson, Biocodex, MKHP, Watsons
10	<b>Prospects Ukraine</b>	Consumer marketing, Loyalty marketing	Mastercard, Ukrsibbank, DAI (USAID), Nova Post
11	<b>Seven Group</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, PR	BAT (British American Tobacco Ukraine), Nestle, Danone, Vodafone, HP, Kingston
<b>Group 3. Income (revenue) from the sale of UAH 10-50 million.</b>			
12	<b>Better Svit</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Loyalty marketing, Creative Services, Digital Services	PepsiCo Ukraine, Bella-Trade, Sanofi Ukraine, Amway, Johnson & Johnson Ukraine, EUEA

<b>13</b>	<b>Adbakers</b>	Consumer marketing, Trade marketing, Loyalty marketing, Creative Services	JTI, Raif, DTEK, Apple, AbInbev, Unilever
<b>14</b>	<b>Profi ads</b>	Event marketing & Sponsorship, Media Planning and Buying, advertising placement in shopping and entertainment centers	Ocean Plaza, Karavan, Retroville, Respublika Park, Mary Kay, Bosch, Pravex Bank, Grave, Geneva Call Appel de Genève, Winner, Foxtrot, Ilta, Nissan
<b>15</b>	<b>Freebrand</b>	Consumer marketing, Event marketing & Sponsorship, Loyalty marketing	Mastercard
<b>16</b>	<b>SMART Marketing</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Loyalty marketing	Coca-Cola Beverages Ukraine Limited, ABInBev EFES, Syngenta, Panasonic, Lactalis, MKHP
<b>17</b>	<b>MEX a member of Havas</b>	Consumer marketing, Trade marketing, Event marketing & Sponsorship, Loyalty marketing, Creative Services, PR	Vodafone Ukraine, Nova Post, Jacobs, Schneider Electric, Farmak

Source: [18]

The main 2024 trends were structured, which observed based on the analysis results of key marketing agencies services and their activities results on the market, have been highlighted by experts in marketing based on the survey's results and the enterprises activities [12, 15, 19-25], in particular:

No. 1. AI technologies and machine learning. Marketers should pay special attention to the possibilities of using AI and machine learning: routine tasks automation (email marketing, chatbots, data analytics, SEO and PPC); personalization – content, ads; predicting customer behavior, optimizing advertising campaigns and better understanding the needs of the audience.

No. 2. Social media marketing and social commerce integration: Social media will further integrate e-commerce functions [19-22]. In 2024, 61% of the world's population, or 4.95 billion, will be registered on social networks. It is expected that by 2025, 20% of all online purchases will be made on social networks. At the same time, millennials (25-40 years old) and Generation Z (18-24 years old) will be the most active customers, making 62% of all purchases [22]. An internal Google study showed that 40% of Americans - 18-24 years old do not use search engines to search, but go to buy on TikTok and Instagram. In 2024, companies will focus on the most effective communication channels. Among the top platforms: TikTok (+16% growth), LinkedIn (+5%), Instagram (+1%) [21].

No. 3. Increasing e-commerce market. Russia's full-scale invasion in Ukraine in 2022 had a negative impact on the e-commerce market growth at the global level. During 2023, the market stabilized and the income level began to rise. The market is expected to reach \$3,647 billion in 2024, and this opens up new opportunities for business development and growth. Sales of electronics, clothing, shoes, fashion accessories and food produce the most profit in e-commerce (Statista). It is important for e-commerce companies to focus on hyper-personalization service and modern technologies implementation [22].

No. 4. Video marketing in all forms: short videos (on TikTok, Instagram Reels and YouTube Shorts); live broadcasts; interactive video [19]. Videos have become almost the best way to consume content. The top platforms for video are social networks (63%), website (47%) and email campaigns (36%) [22]. Also, vertical videos, videos without sound, and live streams are becoming more popular.

No. 5. Content marketing. Special attention should be paid to storytelling; humor in communications [12]. UGC content is important - 84% of consumers trust a brand's ad more if it contains user-generated content, so it's worth encouraging customers to share their experiences (and Spark Ad). Contrast typography plays an important functional and visual role - draws the user's attention to the main thing, improves information readability and perception [21].

No. 6. Immersive and interactive marketing is a marketing direction that uses augmented reality (AR) and virtual reality (VR) technologies to create a relevant new experience for users [19-21].

No. 7. Data-Driven Marketing and brand development: attracting and retaining customers; the marketing budget optimization; increasing competitiveness [19]. In 2022, many brands neglected to budget for display advertising, because users simply bought where it was. In 2023, more and more companies continued to invest in the brand, and the trend will intensify. Only properly configured analytics will allow you to understand the complete users' path on the site and track the marketing activities effectiveness across channels. The higher the target income, the more diverse your marketing mix should be [15]. Big Data can help in business development: geo-analytics for business development and recovery; business scaling; access to international markets; personnel search; industry analysis [12].

No. 8. Customer retention and marketing personalization: CRM; personalized content; personalized recommendations; support service; loyalty program; email marketing [23, 24]. According to the Harvard Business Review [24], an increase in loyal customers by just 5% increases profits by 25-95%. Persistence and loyalty are important at least because the probability of buying new customers is 5-20%, and regular customers are already 60-70%. Annually, online stores lose 25% of their customers. But if you encourage customers to return, there is a 54% chance that they



will repeat the purchase. The main metric used to analyze the customer retention campaign results is the Customer Retention Rate (CRR), which determines the loyal consumers number in the dynamics. Customer retention increases ROI [23, 24].

No. 9. Voice search. Shifts in this area are closely related to the development of AI and generative language models such as ChatGPT. Especially relevant for the development of SEO specialists: the long keywords use; structured data with Schema markup; FAQ pages. According to the DemandSage portal, users make more than 1 billion voice requests every month. Voice search is used by 27% of smartphone owners [19, 20].

No. 10. DOOH (Digital Out-of-Home) advertising is one of the fastest growing and most influential advertising formats and allows for impact, eye-catching and product growth. DOOH advertising allows you to consolidate the image positions of the client and covers a wide audience [12, 17].

No. 11. Social responsibility is an actual trend not only worldwide, but also taking into account the development conditions of Ukrainian companies [12, 17, 25]. MRKTNG Marathon discussions were largely devoted to the topics of barrier-freeness and inclusion. During the full-scale war, many companies began to pay more attention to how convenient business and its services are for people with reduced mobility and people with disabilities. Businesses are also discussing training for people with PTSD and other anxiety disorders [12].

No. 12. Influence marketing. According to [22], micro-influencers (from 1,000 to 100,000 followers) generate 60% more involvement than macro-influencers (from 100,000 to 1,000,000 followers). Therefore, more than 56% of marketers who invest in influence marketing work with micro-influencers [17, 22].

The researched trends show that it is very important to constantly engage the audience through an interesting offer and content, which is posted to a greater extent on MA websites and social networks, so let's take a closer look at the indicators of such interaction. In the analysis process of agencies' data, it turned out that due to low traffic to the website or the website absence for some agencies, there is no data from various channels, therefore 46 out of 55 marketing agencies were submitted for detailed analysis (Table 3).

In each column, the TOP-5 highest % values for each traffic indicators achieved by the agencies are highlighted in different colors, and the TOP-3 lowest % for each indicator are marked in gray. The data from the table 3 demonstrates, in general, marketing agencies receive user traffic from various channels (mostly from Organic search and Direct).

Table 3

## Traffic data of MAs websites across different channels

#	MAs websites	Visitors per month	Organic search	Paid search	Direct	Social media	Referrals	Mail	Display
1	<b>Webpromo</b> https://web-promo.ua/	113332	73,80%	1,99%	18,33%	1,57%	4,02%	0,06%	0,24%
2	<b>Elitweb</b> https://elit-web.ua/	92234	72,09%	6,29%	16,58%	1,33%	3,57%	0,04%	0,10%
3	<b>Netpeak</b> https://netpeak.ua/	76460	33,12%	8,98%	48,63%	0,96%	8,11%	0,07%	0,12%
4	<b>Wezom</b> https://wezom.com.ua/	73812	71,43%	2,53%	19,84%	1,42%	3,82%	0,05%	0,92%
5	<b>Marketinglad</b> https://marketinglad.io/	70425	67,33%	0,02%	24,88%	2,12%	5,30%	0,07%	0,27%
6	<b>Inweb</b> https://inweb.ua/ua/	67578	55,26%	1,20%	35,69%	1,40%	6,29%	0,06%	0,09%
7	<b>Seoquick</b> https://seoquick.com.ua/	65870	43,50%	0,33%	49,31%	3,28%	3,43%	0,04%	0,10%
8	<b>Promodo</b> https://www.promodo.ua/	51737	39,39%	10,51%	41,25%	5,06%	3,58%	0,04%	0,17%
9	<b>ITForce</b> https://itforce.ua/	43558	78,08%	0,48%	17,43%	1,30%	2,52%	0,06%	0,13%
10	<b>IdeaDigital</b> https://ideadigital.agency/	34445	73,04%	0,01%	21,61%	1,42%	3,65%	0,18%	0,09%
11	<b>Lanet</b> https://lanet.click/	30617	58,13%	11,09%	25,47%	1,68%	3,29%	0,05%	0,29%
12	<b>Proidei</b> https://www.proidei.com/	22391	75,64%	0,02%	14,59%	4,89%	4,45%	0,06%	0,36%
13	<b>Business site</b> https://www.site2b.ua/	21390	73,48%	-	21,66%	1,26%	3,39%	0,08%	0,13%
14	<b>Median ads</b> https://median-ads.com/	20220	68,03%	5,79%	19,54%	1,79%	4,54%	0,10%	0,21%
15	<b>Ifish</b> https://ifish.com.ua/ua/	15778	77,33%	0,02%	18,05%	1,09%	3,14%	0,12%	0,24%

16	<b>HTTP</b> https://http.co m.ua/	15249	21,61%	-	69,53%	4,89%	3,57%	0,08%	0,32%
17	<b>МА Ціль</b> https://goal- team.com.ua/	9566	54,41%	0,02%	31,21%	8,62%	5,35%	0,10%	0,28%
18	<b>AG Marketing</b> https://ag.mar keting/	8436	50,99%	12,42 %	27,05%	2,25%	6,98%	0,10%	0,22%
19	<b>UA Master</b> https://uamast er.com/	7997	45,22%	2,27%	39,41%	6,42%	5,53%	0,23%	0,61%
20	<b>VOLL</b> https://voll.co m.ua/	6910	58,37%	0,08%	32,57%	2,04%	6,53%	0,11%	0,29%
21	<b>Mix Digital</b> https://mixdig ital.com.ua/	6614	64,71%	6,17%	21,24%	2,34%	5,25%	0,10%	0,19%
22	<b>Shelfy</b> https://shelfy. com.ua/	4933	40,45%	8,21%	31,63%	8,55%	10,44 %	0,14%	0,58%
23	<b>ILION</b> https://ilion.di gital/ua/	4884	54,96%	1,69%	34,08%	2,25%	6,51%	0,18%	0,33%
24	<b>Creative SMM</b> https://creativ esmm.com.ua /	3626	56,13%	-	34,89%	2,59%	5,98%	0,10%	0,32%
25	<b>Comon</b> https://comon. agency/ua/	2983	71,26%	-	20,02%	2,61%	5,52%	0,10%	0,49%
26	<b>Panem</b> https://panem. agency/	2631	45,07%	-	45,81%	2,52%	6,04%	0,09%	0,46%
27	<b>Compas</b> https://compa s.agency/	1938	51,21%	12,38 %	28,50%	2,61%	4,81%	0,08%	0,42%
28	<b>Imago</b> https://imago. com.ua/	1808	50,99%	2,04%	34,04%	3,93%	7,97%	0,18%	0,85%
29	<b>Black SMM</b> https://blacks mm.com.ua/	1483	55,03%	3,10%	28,55%	2,54%	10,26 %	0,09%	0,44%
30	<b>Dinanta</b> https://dinanta .com/	1260	61,19%	-	27,10%	3,90%	6,93%	0,15%	0,72%
31	<b>Legion</b> https://www.l egion-	1195	59,02%	-	29,17%	3,92%	7,00%	0,15%	0,73%

	marketing.co m.ua/								
32	<b>Spilno Agency</b> <a href="https://spilnoagency.com.ua/">https://spilnoagency.com.ua/</a>	1107	24,19%	3,60%	56,39%	6,69%	8,25%	0,15%	0,74%
33	<b>SHUM Agency</b> <a href="https://www.shumagency.com/">https://www.shumagency.com/</a>	710	68,27%	-	20,59%	3,62%	6,67%	0,15%	0,70%
34	<b>Aimbulance</b> <a href="https://www.aimbulance.com">https://www.aimbulance.com</a>	697	59,22%	-	28,17%	4,63%	7,17%	0,14%	0,66%
35	<b>Defence</b> <a href="https://online.defense.com.ua">https://online.defense.com.ua</a>	652	7,38%	55,36 %	28,59%	4,01%	4,22%	0,08%	0,37%
36	<b>Persha marketyn.gov a agenciya</b> <a href="https://marketing.if.ua/">https://marketing.if.ua/</a>	600	70,58%	-	19,57%	3,88%	5,33%	0,11%	0,54%
37	<b>IMPEL</b> <a href="https://www.impelup.com.ua/">https://www.impelup.com.ua/</a>	540	45,62%	-	45,19%	3,72%	4,73%	0,12%	0,62%
38	<b>Krylov Company</b> <a href="https://www.krylovcompany.com.ua/">https://www.krylovcompany.com.ua/</a>	539	66,07%	-	23,01%	3,89%	6,28%	0,13%	0,62%
39	<b>Hmara Agency</b> <a href="https://hmara-agency.com/">https://hmara-agency.com/</a>	538	85,21%	-	5,18%	3,47%	5,18%	0,16%	0,8%
40	<b>INSIGHT</b> <a href="https://digitalinsight.com.ua/">https://digitalinsight.com.ua/</a>	483	60,46%	0,52%	28,32%	2,63%	7,46%	0,10%	0,50%
41	<b>STROOM</b> <a href="https://stroom.digital/">https://stroom.digital/</a>	455	56,73%	-	27,21%	4,73%	10,53 %	0,14%	0,65%
42	<b>Avocado</b> <a href="https://www.avocado.team/">https://www.avocado.team/</a>	435	51,46%	1,37%	34,07%	3,96%	8,08%	0,18%	0,88%
43	<b>MUST</b> <a href="https://must.marketing/">https://must.marketing/</a>	381	53,02%	-	33,71%	3,99%	8,16%	0,19%	0,93%

44	<b>The KASTA</b> <a href="https://thekasta.com/en">https://thekasta.com/en</a>	338	55,24%	-	27,68%	3,89%	12,46%	0,12%	0,61%
45	<b>HANN</b> <a href="https://hann.com.ua/">https://hann.com.ua/</a>	132	53,17%	-	33,49%	3,93%	8,32%	0,19%	0,90%
46	<b>KARTON</b> <a href="https://kartonagency.com/">https://kartonagency.com/</a>	95	46,37%	1,22%	35,66%	3,33%	12,22%	0,19%	1,02%

Source: own development based on data [13, 14, 16]

It is worth noting the fact that the 5 agencies in the list, which have the largest visitors number per month, have a high traffic % from Organic search compared to others (except for the average % at <https://netpeak.ua/>), but traffic from Paid search is relatively not high in 3 of these agencies – 0,02-2,52%, higher than average - in <https://elit-web.ua/> - 6,29% and in <https://netpeak.ua/> - 8,98%. And for other agencies, Organic search brings the highest traffic % to sites, with the exception of those for which the following are more active: 1) Direct - <https://http.com.ua/>, <https://seoquick.com.ua/>, <https://panem.agency>, <https://www.promodo.ua/>, <https://spilnoagency.com.ua/>); 2) Paid search - <https://online.defense.com.ua>. This shows that there is a demand for agency services and potential clients go to the sites to analyze the information in more detail.

65% of agencies do not have or have low traffic from Paid search, in particular: 17 agencies - do not have, 9 - less than 1%, 4 - less than 2% in the traffic structure from various channels. However, most of these agencies have high % Organic search and Direct, so maybe there is no need for advertising at this time. Not too high % of traffic in agencies from Social media and/or from Referrals. And the channels that have the smallest % of traffic are Mail and Display.

The TOP-5 marketing agencies that have the highest traffic % on each of the analyzed channels are highlighted in Table 4.

Table 4

Agencies rating by the highest traffic % from various channels

	Agency rating	Visitors per month	Agency rating	Organic search	Agency rating	Paid search	Agency rating	Direct
1	<b>Webpromo</b> <a href="https://web-promo.ua/">https://web-promo.ua/</a>	113332	<b>Hmara</b> <a href="https://hmara-agency.com/">https://hmara-agency.com/</a>	85,21%	<b>Defence</b> <a href="https://online.defense.com.ua">https://online.defense.com.ua</a>	55,36%	<b>HTTP</b> <a href="https://http.com.ua/">https://http.com.ua/</a>	69,53%
2	<b>Elitweb</b> <a href="https://elit-web.ua/">https://elit-web.ua/</a>	92234	<b>IT Force</b> <a href="https://itforce.ua/">https://itforce.ua/</a>	78,08%	<b>AG. Marketing</b> <a href="https://ag-marketing/">https://ag-marketing/</a>	12,42%	<b>Spilno Agency</b> <a href="https://spilnoagency.com.ua/">https://spilnoagency.com.ua/</a>	56,39%
3	<b>Netpeak</b> <a href="https://netpeak.ua/">https://netpeak.ua/</a>	76460	<b>Ifish</b> <a href="https://ifish.com.ua/ua/">https://ifish.com.ua/ua/</a>	77,33%	<b>Compas</b> <a href="https://compas.agency/">https://compas.agency/</a>	12,38%	<b>Seoquick</b> <a href="https://seoquick.com.ua/ua/">https://seoquick.com.ua/ua/</a>	49,31%

4	<b>Wezom</b> <a href="https://wezom.com.ua/">https://wezom.com.ua/</a>	73812	<b>Pro ideï</b> <a href="https://www.proidei.com/">https://www.proidei.com/</a>	75,64%	<b>Lanet</b> <a href="https://lanet.click/">https://lanet.click/</a>	11,09%	<b>Netpeak</b> <a href="https://netpeak.ua/">https://netpeak.ua/</a>	48,63%
5	<b>Marketinglad</b> <a href="https://marketinglad.io/">https://marketinglad.io/</a>	70425	<b>Webpromo</b> <a href="https://webpromo.ua/">https://webpromo.ua/</a>	73,80%	<b>Promodo</b> <a href="https://www.promodo.ua/">https://www.promodo.ua/</a>	10,51%	<b>Panem</b> <a href="https://panem.agency/">https://panem.agency/</a>	45,81%
	<b>Agency rating</b>	<b>Social media</b>	<b>Agency rating</b>	<b>Refferals</b>	<b>Agency rating</b>	<b>Mail</b>	<b>Agency rating</b>	<b>Display</b>
1	<b>MA Goal</b> <a href="https://goal-team.com.ua/">https://goal-team.com.ua/</a>	8,62%	<b>The Kasta</b> <a href="https://thekasta.com/en">https://thekasta.com/en</a>	12,46%	<b>UA Master</b> <a href="https://uamaster.com/">https://uamaster.com/</a>	0,23%	<b>KARTON</b> <a href="https://kartonagency.com/">https://kartonagency.com/</a>	1,02%
2	<b>SHELFY</b> <a href="https://shelfy.com.ua/">https://shelfy.com.ua/</a>	8,55%	<b>KARTON</b> <a href="https://kartonagency.com/">https://kartonagency.com/</a>	12,22%	<b>MUST</b> <a href="https://must.marketing/">https://must.marketing/</a>	0,19%	<b>MUST</b> <a href="https://must.marketing/">https://must.marketing/</a>	0,93%
3	<b>Spilno Agency</b> <a href="https://spilnoagency.com.ua/">https://spilnoagency.com.ua/</a>	6,69%	<b>STROOM Digital</b> <a href="https://stroo.digital/">https://stroo.digital/</a>	10,53%	<b>HANN</b> <a href="https://hann.com.ua/">https://hann.com.ua/</a>	0,19%	<b>Wezom</b> <a href="https://wezom.com.ua/">https://wezom.com.ua/</a>	0,92%
4	<b>UA Master</b> <a href="https://uamaster.com/">https://uamaster.com/</a>	6,42%	<b>SHELFY</b> <a href="https://shelfy.com.ua/">https://shelfy.com.ua/</a>	10,44%	<b>KARTON</b> <a href="https://kartonagency.com/">https://kartonagency.com/</a>	0,19%	<b>HANN</b> <a href="https://hann.com.ua/">https://hann.com.ua/</a>	0,90%
5	<b>IT Master</b> <a href="https://itforce.ua/">https://itforce.ua/</a>	5,06%	<b>Black SMM</b> <a href="https://blacksmm.com.ua/">https://blacksmm.com.ua/</a>	10,26%	<b>Imago</b> <a href="https://imago.com.ua/">https://imago.com.ua/</a> , <a href="https://ilion.digital/">https://ilion.digital/</a>	0,18%	Avocado <a href="https://www.avocado.team/">https://www.avocado.team/</a>	0,88%

Source: own development based on data [13, 14]

According to the data analysis results, 30 agencies made it into this TOP-5 rating based on the highest traffic percentage, and 10 of them - into the rating on 2 channels at once.

Next, the presence of various social medias and the users involvement of 20 MAs was analyzed, which have the highest traffic on the site from few channels and more active traffic from social medias - the Livedune service method for this was applied [26].

As can be seen in the table 5, the analyzed digital agencies are present in at least 3 social media (<https://ag.marketing/>, <https://imago.com.ua/>) and up to 7 social media at most (<https://uamaster.com/>, <https://www.promodo.ua/>, <https://seoquick.com.ua/ua/>, <https://elit-web.ua/>, <https://netpeak.ua/>). For marketing agencies, LinkedIn, Instagram and Facebook are the most popular (for almost 100% of agencies), 75% of the analyzed agencies are present on YouTube, 50% - on Tik Tok, 45% - on Telegram, and 40% - on Twitter.

Table 5

## The digital agencies' presence in various social medias

	MAs websites	Instagram	Facebook	TikTok	X.	YouTube	LinkedIn	Telegram
1	MA Goal <a href="https://goal-team.com.ua/">https://goal-team.com.ua/</a>	☑	☑	☑	✗	☑	☑	✗
2	SHELFY <a href="https://shelfy.com.ua/">https://shelfy.com.ua/</a>	☑	☑	✗	✗	☑	☑	☑
3	Spilno Agency <a href="https://spilnoagency.com.ua/">https://spilnoagency.com.ua/</a>	☑	☑	✗	✗	✗	☑	☑
4	Uamaster <a href="https://uamaster.com/">https://uamaster.com/</a>	☑	☑	☑	☑	☑	☑	☑
5	Promodo <a href="https://www.promodo.ua/">https://www.promodo.ua/</a>	☑	☑	☑	☑	☑	☑	☑
6	Proidei <a href="https://www.proidei.com/">https://www.proidei.com/</a>	☑	☑	☑	✗	☑	☑	☑
7	HTTP <a href="https://http.com.ua/">https://http.com.ua/</a>	☑	☑	✗	✗	☑	☑	✗
8	IMAGO <a href="https://imago.com.ua/">https://imago.com.ua/</a>	☑	☑	✗	✗	✗	☑	✗
9	Seoquick <a href="https://seoquick.com.ua/ua/">https://seoquick.com.ua/ua/</a>	☑	☑	☑	☑	☑	☑	☑
10	Compas <a href="https://compas.agency/">https://compas.agency/</a>	✗	☑	✗	✗	✗	☑	✗
11	Black SMM <a href="https://blacksmm.com.ua/">https://blacksmm.com.ua/</a>	☑	☑	☑	✗	☑	☑	✗
12	Panem <a href="https://panem.agency/">https://panem.agency/</a>	☑	☑	✗	☑	☑	☑	✗
13	AG.Marketing <a href="https://ag.marketing/">https://ag.marketing/</a>	☑	☑	✗	✗	✗	☑	✗
14	Marketinglad <a href="https://marketinglad.io/">https://marketinglad.io/</a>	☑	✗	✗	☑	☑	☑	✗
15	Lanet <a href="https://lanet.click/">https://lanet.click/</a>	☑	☑	☑	✗	☑	☑	☑
16	Webpromo <a href="https://web-promo.ua/">https://web-promo.ua/</a>	☑	☑	☑	✗	☑	☑	☑
17	Wezom <a href="https://wezom.com.ua/">https://wezom.com.ua/</a>	☑	☑	✗	☑	☑	☑	✗
18	Elitweb <a href="https://elit-web.ua/">https://elit-web.ua/</a>	☑	☑	☑	☑	☑	☑	☑
19	IT Force <a href="https://itforce.ua/">https://itforce.ua/</a>	☑	☑	✗	✗	✗	☑	☑
20	Netpeak <a href="https://netpeak.ua/">https://netpeak.ua/</a>	☑	☑	☑	☑	☑	☑	☑

Source: own development based on data [26]

The followers activity in social networks should be evaluated by the number of followers, the number of likes and comments, and the general indicator that takes these values into account - ER (engagement rate) - is calculated as the ratio of the reactions

number per period to the number of followers per period. Let's consider what indicators are achieved for the period from the beginning of the year to September 2024, several most active of the analyzed marketing agencies (Table 6). The largest values of each indicators are highlighted in color.

Table 6

Indicators of audience engagement on agencies' Instagram pages

#	MAs websites	Total followers on 17.09.24	For the period 01.01.-01.09.24	% increase. subscribers to the number at the beginning year	Number of likes per post	Number of comments on posts	Number of posts	ER (ER range for Top-5 posts)
1	Black SMM <a href="https://blacksmm.com.ua/">https://blacksmm.com.ua/</a>	25121	1593	6,77	5164	285	350	0,6%-1,19%
2	Webpromo <a href="https://web-promo.ua/">https://web-promo.ua/</a>	5608	125	2,28	3876	230	798	1,28%-3,71%
3	MA Goal <a href="https://goal-team.com.ua/">https://goal-team.com.ua/</a>	4631	1028	28,53	1677	279	194	0,82%-1,51%
4	<a href="https://www.promodo.ua/">https://www.promodo.ua/</a>	4223	78	1,88	1584	15	641	3,43%-18%
5	Lanet <a href="https://lanet.click/">https://lanet.click/</a>	2898	294	11,29	2545	90	832	2,17%-2,86%
6	<a href="https://www.proidei.com/">https://www.proidei.com/</a>	1093	82	8,11	9844	177	847	3,11%-811,25%

*Source: own development based on data [26]*

The largest followers number for the period (25121), the quantitative followers growth (1593) and the comments number (285) is observed in <https://blacksmm.com.ua/>, however, the total posts number is comparatively less (350) and ER in the TOP-5 posts are at a lower level than in the other 5 agencies.

The <https://web-promo.ua/> account ranks 2nd by the number of subscribers (5608), 3rd by the number of likes (3876), the number of comments and the number of posts, ER is at the average level among the submitted agencies.

The account <https://goal-team.com.ua/> has the highest growth % of followers for the period (28,53%), but the number of posts is the lowest among all agencies (194) and ER is less than that of the other 4 agencies.

The account <https://www.promodo.ua/> has the lowest percentage of follower growth in comparison (1.88%), the lowest number of likes (1584) and the lowest number of comments (15). Although the number of posts is not the smallest among these agencies and ER has the highest values after <https://www.proidei.com/>.



In terms of the posts number and the % increase in the followers number, <https://lanet.click/> ranks 2nd among agencies, other agency indicators are at an average level.

The account <https://www.proidei.com/> shows the highest number of post likes (9844), the highest number of posts (847) and the highest range of ER compared to others, although it has the lowest number of followers in comparison.

Let's summarize in the recommendation form the main opportunities and research results within the framework of the publication topic, which it is advisable for marketing agencies to take into account in their cooperation with business for the effective services development:

1. Positioning. Agencies should work on their positioning to attract the attention of those potential clients, in particular, this may concern the choice of the activity field and presenting itself as a universal MA or a specialized MA in a certain business field. The specialized MAs advantages are usually: 1) expertise (MAs know the market dynamics of the client company, demographic characteristics of the market, consumer requests, what problems the company's clients have; 2) economic efficiency (MAs conduct more targeted campaigns, so the return on investment is high); 3) flexibility, adaptation to changes and scalability [6, 27].

2. Customer attraction strategy and communication channels. A successful strategy for attracting customers and correctly selected channels for broadcasting a marketing message significantly affect the success and business profitability [29]. Agencies are also helped to attract clients: free consultations or initial assessment; collection and publication of customer reviews; incentives and programs to retain current customers; free trial services period; creating interesting and useful content.

3. Marketing strategy for business. The choice of marketing strategy depends not only on brand recognition, but also on its competitiveness and profitability. Agencies should offer clients, in addition to Internet marketing tools, also the strategies development that take into account: 1) Target audience; 2) Budget; 3) Competitive environment; 4) Product or service type determination; 5) Business goals [6, 28].

4. Cost optimization strategy for business. Such a strategy plays a critical role in managing the company's marketing budget, especially in crisis times [29, 30]. Marketing agencies should recommend to businesses how to reduce costs without compromising the quality or effectiveness of marketing efforts: 1) re-evaluation of advertising channels and budgets, regular audit of advertising costs; 2) content optimization through A/B testing; 3) marketing processes automation, marketing tools introduction to automate routine tasks, AI use; 4) improvement of internal processes, project management system implementation; 5) partnership programs and negotiations with suppliers and partners to obtain better conditions, volume discounts or long-term

cooperation; 6) using data to reduce costs and personalize advertising to increase conversion [30].

5. Research and understanding of the audience. Women and Generation Z (Zoomers) shop most actively in Ukraine.  $\frac{2}{3}$  of women's purchases are planned. Among the Zoomers, most purchases are spontaneous, Generation Z does not skimp on entertainment, but can reduce food expenses. It is Z who are the most active consumers of paid content, actively subscribe to streaming services and systematically use health applications [21].

6. Understanding price and value for modern consumers. Millennials and Generation Z are dictating new market rules. 82% of buyers want the brand's values to match their own. One of the manifestations trend can be considered the canceling brands culture due to the Russian-Ukrainian war. Now the company position regarding the war is more important to Ukrainians than the product [19]. According to [21], both women in general and Zoomers pay attention to the brand during shopping, while these categories of buyers are open to new brands (Zoomers are slightly more); women also buy new brands to support the Ukrainian manufacturer (63%).

7. Environmental friendliness and naturalness consideration. Climate and environmental issues have an impact on marketing trends. Thus, according to Pew Research, more than 50% of Americans are concerned about climate problems. This trend is taking hold in the Ukrainian space as well [19]. 60% of consumers worldwide indicate that they buy products from brands that are socially responsible. Although this number has fallen by 10% overall since 2020, Generation Z has consistently demonstrated a commitment to environmentally friendly products at 71%. Companies should consider a gradual transition to environmentally friendly materials and packaging, cooperate with environmental organizations [20].

8. Types of communication. B2B companies are shifting the emphasis from face-to-face communication to remote interaction, implementing omnichannel, marketing automation tools and online webinars as a channel for mass acquisition of potential customers. 65% of B2B companies in various industries conduct transactions entirely online, and 83% believe that omnichannel sales is a more successful way to find and attract new customers than traditional face-to-face communication [20].

9. Partnerships. To retain customers for the coming years, it is worth applying a strategic partnership - involving other companies in the loyalty program for mutual benefit [31]. Among the main tools, according to the survey [24], respondents name partnerships, SMM, events and public speeches, relations with the media, internal communications (collaborations and partnerships rose from 5 in 2023 to 1 place, and relations with the media - decreased from 1 to 4).

10. Reviews. According to a study by Trustpilot, 89% of consumers in the world check online reviews when making an online purchase. However, it is worth

considering that due to the emergence of bots and fraud with reviews, businesses and consumers are very careful about their legitimacy. This influenced the creation of the Coalition for Trusted Reviews, a cross-industry collaboration involving Trustpilot, Amazon, Booking.com, Expedia Group, Glassdoor, and Tripadvisor in 2023 [31].

Prospects for further research include a more detailed analysis of marketing agency services, content in various channels, and factors contributing to successful communication in the "marketing agency-client" relationship.

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# **INFORMATION TECHNOLOGIES AS A STRATEGIC TOOL FOR CUSHIONING THE IMPACT OF MODERN MACROECONOMIC CHALLENGES ON THE EFFECTIVENESS OF MARKETING ACTIVITIES OF INDUSTRIAL ENTERPRISES**

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When building communications with business partners and consumers, obtaining information about the state of market conditions and consumer needs, and solving a significant number of operational and strategic tasks, the management of successful enterprises intensively uses various information technologies. As stated by marketing scholars and practitioners, «new digital methods of processing and using information are becoming the main tool for improving the performance of the enterprise as a whole and the efficiency of its marketing activities. In the context of informatization of society, the Internet and other digital channels are changing the forms and methods of marketing activities» [1].

That is why the topic of business process informatization is relevant, as evidenced by the results of many studies by domestic and foreign scientists and practitioners. In particular, S. Ilyashenko, Y. Shipulina, N. Ilyashenko [2], M. Oklander [1], S. Shpylyk [3], S. Kovalchuk, E. Zaburmeha, O. Shemchuk [4], O. Vytvytska, S. Suvorova, A. Koryugin [5] studied the impact of informatization on the efficiency of marketing activities of enterprises.

The issues of digital marketing as a modern trend in the development of marketing have been reflected in some way in scientific works, in particular, it is necessary to mention the works of G. Dash, D. Chakraborty [6], L. Romanenko [7], A. Kamel [8], Y. Tomashevsky, V. Proskur [9] and others.

However, despite the considerable intensity of research on this topic, the research results need constant verification, as the field of information technology is developing rapidly. In addition, the conclusions need to be adjusted to take into account the effects of the covid-19 pandemic and russia's protracted military actions against Ukraine.

The information basis for the study is the data of statistical institutions of Ukraine, the results of theoretical and analytical data of applied research of the expert scientific community. General scientific methods of analysis, synthesis and structural

and logical generalization were used to determine the role of information technologies and their place in ensuring the competitive position of enterprises of various scales of activity, and statistical research methods were used to identify patterns and dependencies in the data under study.

The share of enterprises using electronic resources in their economic activities is growing every year. The greatest attention to the use of computers and computer networks is paid by large enterprises in Ukraine with 250 or more employees. This is most likely due to the significant financial and organizational capabilities of such business entities.

The widespread use of modern information technologies for the implementation of marketing tasks and management of enterprises in general contributes to a significant increase in the efficiency of their activities. In particular, they can help companies respond quickly to stochastic changes in the environment, reduce the time from product development to market launch, ensure a high level of quality of their products and interaction with external partners, strictly comply with contractual obligations, apply individual customer service schemes, etc.

At the current stage of development of Ukraine's economy, enterprises can solve a significant number of current business issues remotely using remote access to the e-mail system, company documents, business applications or software (Table 1). The importance of using components to ensure remote work has increased during the covid-19 pandemic and later when Russia launched active military operations on the territory of Ukraine. The management of enterprises located in the territory close to the combat zone is often forced to transfer work to remote mode to reduce the risk to the lives of staff. In 2023, the share of enterprises whose employees had access to the company's email system for enterprises of different sizes was more than 50%, and it was highest in medium-sized enterprises – 67,9%. However, the share of employees who had access to the company's e-mail system was highest in small enterprises (23,1%). The reason for this is the multifunctionality of employees working at enterprises of this size, the need for them to combine different functions, such as management and production.

In addition to providing internal management functions, online communications can be used to build relationships with partners, establish a system of distribution of finished products, including via the Internet, increase the effectiveness of advertising communications, etc.

The use of the Internet as a means of communication between an enterprise and its stakeholders can also significantly reduce time and resource costs, and improve the quality of such interaction. As noted in [3, p. 215], «the high efficiency of the Internet's communication properties makes it possible to reduce the time spent on finding partners, making decisions, implementing transactions, developing new products,

etc.». An important advantage of such communication is the organizational accessibility of the Internet, as it has round-the-clock access. Another important characteristic is the flexibility of the tools used to form communications, which makes it possible to update information without additional costs and time, i.e. the use of the Internet can significantly improve the quality of the information received, primarily in terms of its timeliness, which is known to be the most important indicator of the quality of economic information.

Table 1

Remote access of persons employed of enterprises by type of economic activity and with a breakdown by the number of persons employed in 2023

The scale of of enterprises	Share of the number of enterprises whose employees have remote access in the total number of enterprises, %			Share of the number of employed having remote access of the total number of persons employed, %	
	to email system of the enterprise	to documents of the enterprise (such as files, spreadsheets, presentations, charts, photos)	to business applications or software of the enterprise (such as access to accounting, sales, orders, CRM)	to email system of the enterprise	to documents of the enterprise (such as files, spreadsheets, presentations, charts, photos), business applications or software of the enterprise (such as access to accounting, sales, orders, CRM)
10-49 persons	62,2	45,5	44,8	23,1	19,4
50-249 persons	67,9	52,6	54,0	21,0	18,5
250 persons and more	66,7	58,7	58,7	14,5	12,1

Source:[10]

The above effects are accompanied by a significant reduction in transaction costs, i.e., the costs associated with establishing and maintaining interaction between the enterprise and its stakeholders. At the same time, the cost of communications in comparison with traditional means becomes minimal, and their functionality and scalability increase significantly [3, p. 215].

Over the period from 2018 to 2023, the Internet speed used by enterprises of various sizes gradually increased. In 2023, the most popular were the services of Internet providers that provided access to the Internet with Internet speeds from 30 Mbps to less than 100 Mbps. The reason for this is that such speeds are sufficient for solving basic production and management tasks, as higher speeds also imply higher fees for



such services. Almost half of small businesses used the Internet at this speed. For these reasons, the share of enterprises using the Internet at speeds of 1 Gbps or more is the smallest for enterprises of all sizes (Table 2).

Table 2

Use of fixed-line Internet access in 2018-2023, %

The scale of of enterprises	less than 30 Mbit/s	at least 30 but less than 100 Mbit/s	at least 100 Mbit/s but less than 500 Mbit/s*	at least 500 Mbit/s but less than 1 Gbit/s*	at least 1 Gbit/s*
2018					
Total	21,6	18,7	...	...	...
10-49 persons	21,4	25,6	...	...	...
50-249 persons	23,3	35,2	...	...	...
250 persons and more	18,3	18,7	...	...	...
2019					
Total	19,5	18,7	...	...	...
10-49 persons	19,5	26,2	...	...	...
50-249 persons	20,8	35,7	...	...	...
250 persons and more	14,8	18,7	...	...	...
2021					
Total	18,2	18,9	19,7	4,7	3,2
10-49 persons	18,4	27,1	27,2	7,5	5,4
50-249 persons	18,1	35,9	23,1	8,4	5,8
250 persons and more	12,7	18,9	19,7	4,7	3,2
2022					
Total	7,4	28,0	19,0	4,4	2,1
10-49 persons	7,6	30,1	18,8	5,5	3,0
50-249 persons	7,6	29,0	17,2	5,7	4,6
250 persons and more	3,2	28,0	19,0	4,4	2,1
2023					
Total	7,2	39,3	23,9	5,9	3,2
10-49 persons	7,6	42,0	24,5	6,8	3,4
50-249 persons	6,5	38,2	28,2	9,7	7,1
250 persons and more	4,2	39,3	23,9	5,9	3,2

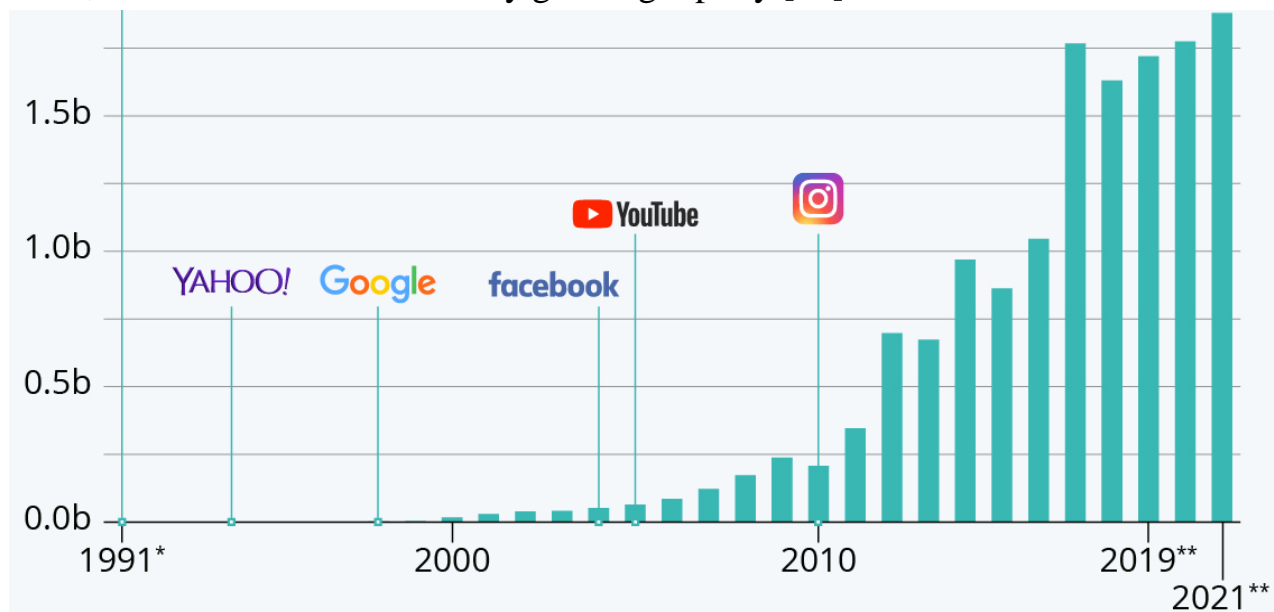
\*Data for 2018-2019 are not available in these ranges, because, according to the current methodology of state statistical survey «Use of information and communication technologies at enterprises», the collection and formation of information was not provided

Source:[10]

C. Ilyashenko and co-authors, emphasizing the importance of the enterprise's presence on the Internet, propose to use the term «Web-culture» of an enterprise, to assess the level of which the following indicators can be used: availability of the enterprise's website (websites) on the Internet, and one that is regularly supplemented and updated; availability of pages (groups) in social networks, which regularly post messages characterizing the specifics of the enterprise's activities; accessibility and recognition of the enterprise (its website, pages in social networks); availability of the

enterprise's website and social networks in the Internet [2, c. 90]. Thus, the main communication tool of an enterprise on the Internet is its website and social networks.

More than a third of all enterprises have a website, with a traditionally higher share of large enterprises, which has been growing over the years of the survey. Almost 70% of large enterprises had their own website in 2018-2021, which emphasizes the importance of this tool in the activities of modern enterprises. In contrast, over the same period, the share of small enterprises that had a website was slightly more than 30% [10], which is primarily due to their financial capabilities. These data are fully consistent with global trends showing an increase in the number of websites in the world between 1991 and 2021. As of 2021, there were 1.88 billion websites in the world, and this number is currently growing rapidly [11].



\*as of august 1, 1991

\*\* latest available data for 2019: october 28, for 2020: june 2, for 2021: august 6

Fig. 1 - Dynamics of the number of websites in the world

Source: [12]

M. Walters [13] believes that a high quality website can easily convert visitors into potential customers and increase sales a hundredfold compared to a low quality website. This statistic confirms the economic feasibility of investing in improving the quality of an enterprise's website.

Since the main purpose of a website is to provide the user with maximum information about the company's activities and products, it can be hypothesized that the quality of a website will be primarily determined by the quality of the information posted on it. However, according to experts, this is «only one of the few criteria on the basis of which the quality of an enterprise's website can be assessed» [14].

A generalization of website quality indicators considered in various sources of scientific information [14; 15] suggests that the user evaluates the quality of a website

not only on the basis of technical parameters or quality of information. The quality of a website from the point of view of its user is a comprehensive assessment determined by the level of compliance of the website with technical, marketing, patent and legal characteristics of the website and the quality of its content.

An important indicator that can be used to evaluate the effectiveness of a company's website is traffic share, i.e. the website activation rate, which measures the share of traffic that a website receives compared to its competitors. This indicator is also known as market share, as it clearly indicates the position of the company in the market compared to its competitors. Analyzing the dynamics of this indicator allows e-commerce businesses to determine how fast their business is growing and how well they stand up to their competitors, which strategies work best when it comes to attracting website visitors. The key factors that influence market share are website traffic, competition, website usability, SEO keywords, and marketing activities [16].

Practitioners suggest using the following objective indicators to assess the quality of a website:

- impressions/views/hits/downloads (the number of pages viewed by all users; shows how many information pages (text, HTML, PHP) have been viewed by users);
- number of sessions (a series of site page views by one visitor. A session is considered to be over if the visitor has not returned to the site for some time);
- number of pages viewed (shows the depth of viewing of the site pages; allows you to estimate the number of pages that a visitor has viewed in one session)
- number of users (shows the number of visitors who have viewed the site over a certain period of time);
- number of new users (counts the audience that visited the site for the first time. This parameter is even less accurate than the total audience, given the definition of a new user. In most cases, the data on the new audience is somewhat overestimated - below, in the section on ways to identify visitors, we will explain in more detail why this happens)
- number of unique IP addresses (or hosts) (shows how many unique IP addresses viewed the website pages. This parameter used to replace the site audience count because it is technically easier to calculate (each user has a specific IP address (unlike cookies and other means of identification). Nowadays, most statistics systems support this parameter for historical reasons);
- average time spent by visitors on the website. This indicator reflects how long the time period between the first and last actions of users on the site lasts on average;
- bounce rate (the percentage of users who leave the site within 15 seconds after visiting it. A high bounce rate means that the site is not informative for users, or they came to it by accident);

- distribution of visitors by traffic sources;
- pages with the highest traffic (for each individual page, you can count the number of views and the number of views by its users);
- segmentation by device type (users are divided by device type: mobile, desktop, tablet. It is convenient to analyze any data on traffic generation in the report);
- conversion rate (shows how many users performed the target action at the analyzed stage of the funnel);
- key queries that users use more often to go to the resource, such as words or phrases that were not taken into account when compiling the semantic core;
- clicks (an indicator of transitions to a website from an advertisement);
- CTR («click-through rate»). It is a measure of the ratio of click-throughs from an ad to the number of times it was displayed;)
- visual heat maps (a visual method of studying a large number and location of user interactions on a website);
- playback of session records [17].

A high-quality website allows to form a vivid image of the enterprise, as well as to create the necessary incentives for the next customer interaction with it [18, p. 115]. The formation of the influence of the incentive on the behavior of the site user can be displayed in the following scheme (Fig. 2).

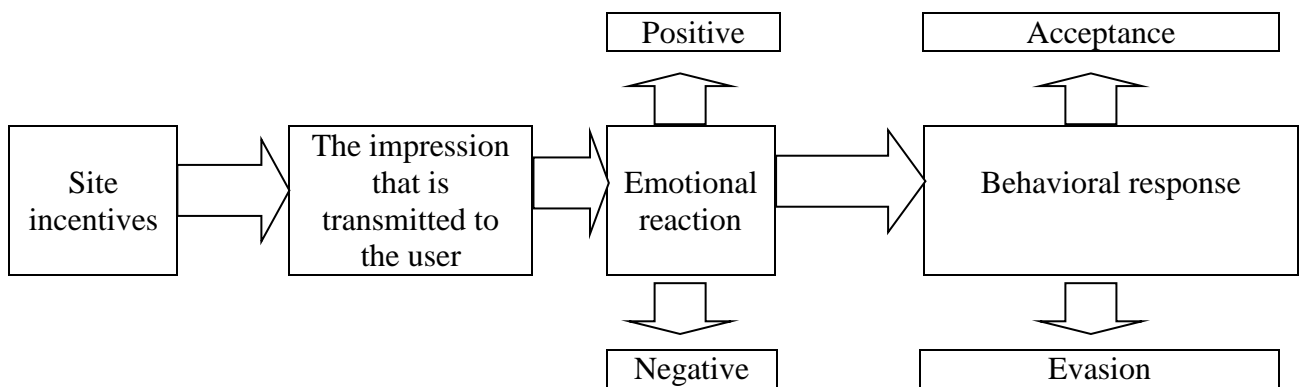


Fig. 2 – The mechanism of stimulating the behavioral response of users by the site

Source:[19]

The main task of the enterprise should be to identify the points of contact between the consumer and it and to assess the impressions received by the consumer, and, taking them into account, to determine the incentives that shape consumer behavior during their communication with the enterprise. The long-term experience that a consumer gains in the course of such interaction is formed by his or her emotions (positive and negative), which are stored in the consumer's long-term memory, i.e., the process of coding in the form of memories actually takes place. These memories are the reason

for accepting or rejecting information that comes to the consumer from the environment, including web pages.

Moreover, getting feedback from the consumer is extremely important, as it allows you to build effective interaction and compensate for some of its unidirectionality, given the initial asymmetry of marketing communication. Receiving feedback from the second communicator – the recipient of marketing information – allows the sender to form a conclusion about how well the information was understood and what emotional reactions it caused. This task may not be achievable if there are «noises» at different stages of communication, which may prevent the marketing message from achieving its purpose.

For the effective implementation of business processes, enterprises use a variety of information support that allows them to both intensify external and internal communications and improve the quality of management decisions and the efficiency of their implementation.

According to the data presented in Table 3, we can conclude that large enterprises use e-mail, office software, enterprise database hosting, file storage procedures, accounting and finance software, customer information management software, and computing power to run software more intensively, due to both the larger number of production and business tasks and the greater financial needs of their customers. Despite the growth in the share of enterprises purchasing cloud computing services, their share in all groups of enterprises remains insignificant.

Table 3

Share of the number of enterprises purchasing cloud computing services by types of cloud computing services, by types of economic activity, with a breakdown by the number of employed in 2018-2022 pp

The scale of of enterprises	2018	2019	2021	2022
<i>email</i>				
Total	5,2	5,9	6,6	6,1
10-49 persons	4,5	4,9	5,1	5,1
50-249 persons	6,8	8,0	8,1	7,4
250 persons and more	11,1	13,4	13,6	16,4
<i>office software</i>				
Total	4,3	4,8	4,6	4,7
10-49 persons	3,6	4,0	4,1	3,9
50-249 persons	5,9	6,4	6,6	5,7
250 persons and more	10,2	11,9	12,1	13,7
<i>hosting the enterprise's database(s)</i>				
Total	3,4	4,0	4,2	4,0
10-49 persons	2,9	3,4	3,5	3,5
50-249 persons	4,5	5,5	5,7	4,5
250 persons and more	7,9	9,5	9,8	10,7
<i>storage of files</i>				
Total	3,6	4,2	5,3	4,6

10-49 persons	2,8	3,2	3,4	3,3
50-249 persons	5,4	6,5	6,7	6,7
250 persons and more	10,3	12,4	12,5	15,2
<i>finance or accounting software applications</i>				
Total	5,3	5,9	5,5	5,1
10-49 persons	4,9	5,4	5,2	4,8
50-249 persons	6,2	7,4	7,4	5,6
250 persons and more	7,2	9,0	8,9	8,1
<i>CRM software application for managing information about customers</i>				
Total	2,5	2,9	2,8	1,8
10-49 persons	2,1	2,4	2,4	1,5
50-249 persons	3,4	3,8	3,9	1,9
250 persons and more	5,3	6,8	7,0	5,6
<i>computing power to run software used by the enterprise</i>				
Total	3,1	3,5	3,5	1,5
10-49 persons	2,4	2,7	2,8	1,0
50-249 persons	4,2	5,2	5,2	2,5
250 persons and more	8,8	10,1	9,9	5,3

Source:[10]

When designing a website, one of its important indicators is the ability to view it seamlessly and use it effectively through mobile applications. According to national statistics for 2023, the share of enterprises that have access to the Internet via mobile and Wi-Fi ranges from 45,4% for small enterprises to 64,2% for large enterprises [10]. The fact that the use of mobile phones as a basic communication channel is growing is also confirmed by global statistics. In particular, a study of traffic from mobile devices, desktop computers and tablets conducted by Similarweb LTD in 2024 found that more than 68% of it was from mobile devices, more than 30% from desktop computers and only 1,61% from tablets [20].

When using information technology to ensure communication between the enterprise and the environment, a number of positive effects may arise, the content of the main ones is shown in Table 4.

Table 4

#### Effects of the use of information technologies by enterprises

Components of competitive advantage	Positive result of the impact of information technology
Productivity	increases due to lower monetary and time costs (access to more and more profitable customers, greater opportunities for negotiations through information technology and telecommunications, etc.)
Added value	increases due to the high quality of information transmitted and received from internal and external stakeholders (employees, customers, suppliers, etc.)
Security	is strengthened by improving the protection of personal data of consumers
Transaction efficiency	increases as transactions are completed either at a higher speed or at a lower cost

Cash flows	are accelerated through, for example, fund transfers, cash management procedures and contract signing procedures
Effectiveness of the competitive strategy	is increased by developing better, more timely and more profitable offers to its customers through the use of information technology and telecommunications
Competence in the specialized field	is increased due to the opportunity to interact with the best enterprises in their field through electronic media
Access to information	is improved by increasing the means of receiving and transmitting information

*Source: own research based on [21]*

Thus, an important task and, accordingly, the effect that can be obtained as a result of its effective implementation is the collection of information about the environment, which makes it possible to formulate and implement sound management decisions. Given the rapid development of competitive markets, not all Ukrainian companies, especially small and medium-sized ones, understand the expediency of collecting information, which is due to a number of reasons.

The main reason is related to the overestimation of their own strengths. The environment, which until recently was not sufficiently saturated with competitors, once provided ample opportunities for rapid business expansion and high profitability. The change in the situation has gone unnoticed by most entrepreneurs, so they continue to ignore the fact that competitors are claiming their market share by inertia.

The second reason is an overestimation of market knowledge. Most companies receive information about the market and its volatility dynamics mainly from the media, exhibitions, and intermediaries. In practice, the quality of this information is often poor in terms of reliability and timeliness.

The third reason is the reluctance of business managers to pay for information due to their lack of understanding of the current market situation. In the conditions of increasing intensity of competition and intensification of competition, the former is not always able to maintain the position of the leader in the long term, although it retains certain advantages for some time due to this factor, but effective actions of competitors can neutralize them for a short time [22, p. 70-71].

Thus, the overwhelming majority of reasons why managers of domestic enterprises refuse to collect information is the financial inability of such enterprises to provide for expensive research. As foreign experience shows, with the growth of financial stability of business, the need for information by the management of enterprises increases. In Poland, for example, in 1998-2003, the share of CATI research costs increased from 2,6% to 6,8%, including computer support from 2,3% to 6%, and CAWI, CASI and ACASI increased from 0,05% to 0,2% (from 96 thousand PLN to 760 thousand PLN in 2003). However, the share of expenditures on research by means of press surveys, postal and audit services decreased from 3% in 1998 to 0,2% in 2003,

which indicates a shift in the priority of information acquisition from traditional to digital. The size of the Polish market of market research increased from 21 million zlotys in 1993 to 600 million zlotys in 2009, which is about 1,5% of the European market value and is estimated at 13,3 billion dollars. Moreover, the market includes both quantitative and qualitative research [23].

Statistical data and the results of our own research suggest that modern domestic enterprises are beginning to pay more and more attention to obtaining information from external sources and building communications with business partners and consumers through the use of information technology. This is evidenced by the growing share of industrial enterprises that use computers and computer networks, have fixed Internet access, including high-speed Internet access, and a website, and purchase cloud computing services.

Thus, the use of information technologies in the economic activity of enterprises, and in particular in marketing, allows to increase its efficiency by increasing the activity of external and internal communications, the quality of performing a wide range of management tasks. The intensity of the introduction of information technologies and digital communications by enterprises depends, among other things, on the scale of their activities, which is due to a different number of production and business tasks, the need to combine various operations, financial and other opportunities.

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# **DEVELOPMENT OF MARKETING AND LOGISTICS AT THE STAGES OF DIGITALIZATION OF THE ECONOMY OF UKRAINE**

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Information and communication technologies (ICT) of the fourth industrial revolution (IR4.0), which has been strengthening since the beginning of the 21st century, created the conditions for the formation of a digital economy. Its defining feature is the digitalization of business processes (various spheres of human activity in general) and their transfer to the Internet. Countries that have focused on the digitalization of their economy occupy leading positions in ratings of economic growth and ensuring high living standards for their people [1]. IP4.0 digital technologies increasingly determine the competitiveness of national economies, as well as individual enterprises and institutions as their elements, encourage innovative growth. Ukraine has accumulated positive experience of digital transformations in various spheres of activity: production, services, public administration, covering various aspects of human life, etc. At the same time, the rapid acceleration of digitalization took place in recent years: during the quarantine restrictions of COVID-19 and the war with Russia. This is evidenced by the fact that for the period from 2020 to 2023 Ukraine rose for 21 positions (from 64 to 43) in the rating of digital (network) potential of the countries of the world [1]. It should be noted that digitalization contributed to ensuring the functioning of the economy and state institutions of Ukraine in the conditions of war with Russia and the loss of a significant part of the components of the state's economic potential. Digitalization is also a promising direction of post-war recovery and transition to the path of advanced innovative development in many spheres of human activity, which is the only option for Ukraine [2]. However, digitalization also causes a number of threats to overcome. This may require significant time and financial resources.

In this context, the issue of determining the driving forces for digital transformation, its positive aspects and threats regarding the innovative development of various spheres of human activity and the national economy of Ukraine as a whole is becoming more acute. Marketing and logistics occupy important places among them, and largely determine the market success of business entities in the branches of the national economy. Solving the mentioned problem will make it possible to predict the consequences of digital transformations and manage strategies for marketing and logistical support for innovative activities of enterprises and institutions in the digital economy that is being formed in Ukraine.

This problem has been studied in the works of many scientists. Havrylenko, Tarasenko [3] studied the trends in the development of the digital economy, identified its advantages, such as the extension of opportunities for market-oriented activities of enterprises, the increase in the availability of information and knowledge, as well as digital services for both producers and consumers. The main problems of digitalization are insufficient infrastructural and institutional support, as well as technological and technical inequality of ICT users. Proskurnina and others [4] identified main changes in the digital behavior of consumers in Ukraine under the quarantine restrictions of COVID-19. In particular: the actualization of the digital presentation and delivery of the product, the increase of online purchases. Authors also determined most effective digitalization tools for retail at the stages of making purchase decisions by customers. Yanenkova [5] performed an analysis of factors promoting and inhibiting digital transformations in Ukraine. She singled out the main contributing factors: significant human potential of the IT sector; internet availability; implementation of digital initiatives of the European Union; initiative activity of communities. The main inhibiting factors include: underdevelopment of the infrastructural and institutional environment of digitalization. Galushchak and others [6] identified periods of digital transformation in Ukraine: the formation of digital infrastructure, the growth of digital competences of consumers, the extension of the spectrum and digital technologies for the public administration services provision, services in health care, etc. They singled out state regulation as the main driving force of digitalization. Processes of digitalization of business have practically not been studied, as well as the influence of the factors of the COVID-19 restrictions and the war in Ukraine. Kulakova, Zhytnyk [7] investigated the role and significance of digitalization for ensuring the competitiveness of enterprises on national and international markets. They showed the importance of e-commerce for the development of the national economy of Ukraine in the conditions of COVID-19 and the war against Russia. Reznik, Zagorodnya [8] identified the stages of the introduction of information technologies in the economy: automation (since the 1960s); informatization (since 1980); digitalization (since 2000). They noted a number of characteristics that distinguish the stage of digitalization of the

economy from the previous ones. The impact of digitalization on the innovative environment of society and the competitiveness of the national economy was studied. Urba, Senyshyn [9], referring to results of the Gemius survey, showed that the priority areas of investment in the development of digital technologies in business are: interaction with consumers (digital marketing and electronic commerce); data analysis; management of interaction with employees. They consider three stages of digitalization of business: implementation of digital research technologies and management of customer experience; digital transformation of operational processes; transformation of business models of all divisions of the company, as well as business models of partner companies, which creates opportunities for the formation of digital systems of production and commercialization of products (its marketing and logistics support).

Lapchuk, Dub [10] proposed a theoretical and methodological approach to the step-by-step formation of a mechanism for managing marketing communications of enterprises in conditions of digitalization. They determined a set of digital tools and technologies for implementing the function of the specified mechanism. Pyatnychuk and others [11] identified key areas of digital marketing development, grouped tools and technologies within each of the areas. They noted the constant changes in digital marketing in accordance with changes in digital ICT and market trends, which requires marketers to quickly update their knowledge and skills. Dedilova, Sidelnikova [12] elucidated the essence of the main types of digital marketing, highlighted their strengths, and developed recommendations for their application. Fisun and Borysenko [13] proved that the application of digital marketing tools and methods is an important factor in the survival of enterprises in the conditions of the war with Russia. They predict the expansion of the digital marketing application both during the war and in the post-war period. Marketing Media Review [14] analyzed trends and problems of the development of digital marketing in the conditions of war. Among them are: a significant recession in the advertising market and other types of marketing activities at the beginning of the war, changes (including constrained) of instrumental support, increased access to foreign markets, changes in the digital behavior of consumers, etc. Auckland and others [15] proposed an approach to solving the scientific problem of developing theoretical and applied principles of digital marketing as a type of marketing activity for informatization of society. It was substantiated that digital technologies are the main source of increasing the effectiveness of marketing activities in the conditions of digital transformation of the economy. Rudenko and others [16] determined the current trends in the development of digital marketing, as well as trends in the use of social networks and platforms by marketers as of 2022. They performed an analysis of these trends. Key tools of digital marketing were identified, the use of which will contribute to the promotion of goods of domestic companies on national and international markets. They outlined tools that can be used only by powerful

multinational companies. Mariana Dorosh-Kizym and others [17] highlighted the role of the digital marketing in shaping the public opinion during the war. It is shown that digital marketing tools lead to changes in the demographic characteristics of consumers, which leads to a change in target audiences. Marketers should regard these trends.

Vyhovskyi et al. [18] studied the practice of implementing Internet marketing tools into logistics enterprises, in particular, for the formation of advertising campaign and their promotion in the Internet environment, strengthening the recognition of their brand, evaluating the effectiveness of communication activities on the Internet, etc. Rosokhata and others [19] performed a comparison of the number of search queries in the Google Trends service for the terms "product delivery" and "health" within Ukrainian and world markets. They noted the increasing popularity of the new direction of promotion "word of mouth marketing", which is an effective tool of communication with consumers in the digital environment with the help of social networks and various platforms of cyberspace. Ptashchenko, Sokhatska [20] performed an analysis of the application of ICT IR4.0 for digitalization of logistics. They highlighted the positive aspects and problems of digitalization of logistics, including basic ICT. They noted that the digitalization of logistics activities of economic entities contributes to the growth of their efficiency, as well as to the strengthening of competitive positions on the market. Khomenyuk [21] analyzed the digitalization processes of logistics enterprises. He singled out main logistics operations that require the introduction of innovative information technologies. He noted the role and importance of network and cloud information storage systems for logistics enterprises. Gurenko [22] determined the impact of modern digital ICT on the development of marketing logistics. He paid considerable attention to the analysis of prospects and problems of digitalization of marketing logistics, noted the positive aspects of digitalization. Gurzhii and others [23] determined the trends of digitalization of logistics systems of enterprises in various industries, types and scales of activity. They revealed the features of digitalization of transport and warehouse logistics, the application of modern ICT to ensure coordinated interaction of information and material flows, as well as for effective management of logistics systems. Margasova, Samoylovych [24] identified promising directions for the application of digital ICT in the logistics activities of Ukrainian enterprises. The main advantages and problems of digitalization of logistics and its future prospects were determined.

Summarizing the results of the analysis, it should be noted the significant interest of scientists in the issue of digital transformation of Ukrainian economy of both in general and in separate spheres of human activity, including marketing and logistics. However, despite significant developments the issue of determining the driving forces for digital transformation at different stages, its positive aspects and threats in

innovative development of business entities, its marketing and logistics support have not been resolved. There is an ambiguity of views on the periodization stages of the digital economy formation, which includes the automation of machines and equipment, informatization, etc.

Accordingly, the purpose of the study is to determine the driving forces for the step-by-step digital transformation of Ukraine's economy based on ICT IR4.0, clarify the essence and content of the stages, determine the features of the development of marketing and logistics at the stages of digitalization for their implementing in the strategies of innovative development of enterprises and institutions in the digital (network) economy.

To achieve the objectives, the following research tasks were set:

- determine the driving forces and main stages of the digital transformation of Ukraine's economy, clarify the essence and content of the stages;
- to investigate digitalization processes (technologies, advantages and problems) in various spheres of human activity at selected stages;
- to determine the peculiarities of the development of marketing and logistics at the stages of digital transformation of the economy of Ukraine;
- to develop recommendations for marketing and logistics support of innovative development strategies of enterprises and institutions in the digital economy.

The following methods were used during the research. Analysis of literature and the method of logical generalization - when determining the structural and logical scheme of research and tasks. System analysis, factor analysis, expert analysis - when determining the driving forces and identifying the main stages of the digital transformation of Ukraine's economy, clarifying the essence and content of the selected stages, studying the specifics of digitalization processes in various spheres of human activity. Analysis of literature, decomposition method, structural-logical and comparative analysis - when determining the peculiarities of the development of marketing and logistics at the stages of digitalization of the economy of Ukraine. The method of synthesis, structural and logical modeling - when developing recommendations for taking into account certain features of the development of marketing and logistics in the system of measures for marketing and logistics support of innovative development strategies of enterprises and institutions in the digital economy.

*Stages of digitalization of the economy of Ukraine and their features.* The results of the analysis of literary sources and the practice of digitalization in various spheres of human activity gave grounds to determine main stages of the digital transformation of Ukraine's economy. Their stage characteristics are given in Table 1.

The second stage began with the intensive transfer of business (various spheres of human activity) to the Internet, which was a reaction to the introduction of quarantine

restrictions of COVID-19. The huge variety of gadgets allows businesses to ensure direct and feedback communication with consumers and other market subjects, provides the opportunity to remotely perceive orders 24/7, consult, make financial calculations, ensure product delivery, etc. [30]. It became convenient for consumers. They appreciated the advantages of digital technologies for ordering and purchasing products and services. Accordingly, various delivery services, digital platforms for buying and selling products of local manufacturers have become widespread. In the conditions of quarantine restrictions, virtual excursions, virtual tourism: domestic and international have become popular. Alongside with business, there was a rapid digitalization of the public services providing system (the "Diia" app, the "Government in a smartphone" program). Digital technologies have become common in the system of science and education [31]. The use of ICT IR4.0 has increased greatly, both in terms of their nomenclature and the number of their users. Self-managed systems combining human intellect, ICT, automated production (providing services) began to form at separate enterprises and institutions of various fields.

Table 1

Stages of digitalization of the economy of Ukraine and their characteristics

Characteristics	Stages			
	I	II	III	IV
Time period	2000-2019	2020-2022	From 2022	Post-war
Driving forces	Adaptation to IR4.0 conditions	Survival and development in the conditions of COVID-19	Survival and development in war conditions	Post-war recovery and innovative development
Essence and content	Implementation of ICT IR4.0 in certain spheres of activity	Transferring business processes and activities of various fields to the Internet	Digital transformation as an opportunity for activity in conditions of security and resource restrictions	Digital transformation as a direction of innovative development in conditions of resource limitations
Positive influence	Expansion of opportunities, cooperation with foreign partners and access to international markets, the image of an innovator	Adaptation to quarantine restrictions, growth of opportunities	Security, functioning in conditions of resource limitations, preservation and growth of opportunities	Operating despite losing a part of the potential, the possibility of implementing a strategy of innovative advancement

*Source: developed by the authors*

*Peculiarities of digitalization of various spheres of human activity at selected stages. At the first stage, digitalization of certain spheres of human activity took place*



by transferring them to the Internet. We should point out the following stages: marketing communications on the Internet; Internet versions of news and analytical publications; information and communication services; introduction of distance learning in 2002 [25] by the Ministry of Education and Culture of Ukraine, etc. The implementation of separate IR4.0 ICTs in various spheres of human activity has begun: electronic banking; Internet trade; digital freelancing and outsourcing, etc. [26]. Digital freelancing is actively developing in Ukraine, Ukrainian freelancers occupy leading positions in Europe [27]. However, they face problems of underemployment, lack of social guarantees and protection of labor rights, antisociality, etc.

Some machine-building enterprises began to implement most of ICTs IR4.0 [28], but on a small scale (Table 2). The main restraining factors of digitalization of enterprises are [29]: poor understanding of the possibilities and advantages of ICT IR4.0 by the managers, financial problems, insufficient motivation, insufficient training of personnel, active opposition of middle managers.

Table 2

Application of IR4.0 digital technologies at machine-building enterprises of Ukraine

Technology	Application
Internet of things and predicative analytics	Implemented on "Interpipe" and "Zorya-Mashproekt"
Product life cycle management	Used by distributors of Western companies
Augmented and virtual reality	Implemented by designers
A real time management systems of production processes	Implemented at enterprises with a single type of production
Additive manufacturing, 3D printing	Implemented at enterprises with a single type of production
Smart devices and mobile applications used to monitor equipment	Starting implementing
Cloud platforms and services	Begin to be used
Cyber security systems	Actively implemented

*Source: compiled by the authors based on data [29]*

However, the second phase of digitalization also caused a number of problems: technical inequality associated with the lack of necessary gadgets and software; geographic inequality associated with the absence/limited access to the Internet in a number of locations; technological inequality, the poor digital competences prevent a part of the population from the usage of digital technologies. The rapid development of IR4.0 ICT and their permanent transformations cause changes in the relevance of professions, and consequently functional and technological unemployment. At the same time, the contradictions on the labor market are intensifying: creative workers vs those who perform monotonous algorithmic operations; talent vs mediocrity; the owner of capital (material, intellectual) vs an employee. The spread of new/improved ICT IR4.0 creates problems of permanent and accelerated training/retraining of specialists

in relevant professions, formation and development of digital competences of both the personnel of enterprises, and the whole population - actual or potential consumers. However, this has a positive aspect, as it opens new opportunities for educational institutions of various levels by applying innovative forms and methods of training/retraining specialists [31].

The transition to the third stage took place at the beginning of the war with Russia. It is characterized by the expansion of digital transformation of almost all spheres of life in society, mainly for security reasons. During the war, digitalization became one of the main strategic directions of ensuring the functioning of the state and the vital activities of society. It made it possible to solve a number of specific problems caused by the war: loss (full or partial) of production facilities and market infrastructure; difficulties in using traditional transport routes and information sources; the danger of placing production and infrastructure facilities in the hostilities zone, as well as in the territories bordering the aggressor; loss of intellectual and personnel potential; disruptions of traditional business contacts, etc., The entire range of IR4.0 ICT in their logical combination is used to solve these problems. The problems caused by the widespread usage of artificial intelligence (AI) have intensified, in particular: employees' psychological rejection of the fact that decisions are made by AI; conflicts with AI when making important decisions; employees replaced with AI, etc., The digitalization problems that arose in stages 1 and 2 remain relevant in the third stage.

The beginning of the fourth stage is associated with the end of the war and the transition to post-war recovery and innovative development of Ukraine's economy. Taking into account that the basis of its pre-war economy, as well as the economy of wartime, compile the manufactures of the third and fourth technological orders (now the fifth is being completed and the sixth is emerging) the advanced innovative development becomes a single option for Ukraine. From these positions, digitalization should be considered as a priority strategic direction of the transition to the path of innovative development as a concept of innovative advancement [2]. World practice shows that the transition to the path of advanced innovative development requires changes in traditional approaches to the development and implementation of growth strategies, new forms of labor organization and labor relations, new technological equipment and production technologies, services, etc. Accordingly, in addition to the problems of the previous stages of digitalization, a number of new problems arise related to features of the transition of Ukrainian economy to the path of advanced innovative development. The following problems should be noted as the main ones:

- enhance of innovative culture of the innovation process subjects, which characterizes their readiness to perceive, use and develop innovations;

- updating of knowledge, skills, experience, creative abilities, innovative culture of the personnel of organizations (subjects of the innovation process) according to the chosen strategies of their innovative development;

- formation of flexible organizational structures, technical and technological systems, management systems that can quickly respond to permanent changes in the conditions of the external micro- and macro-environment;

- risk management of the innovation process.

It should be noted that these problems are largely solved by digitalization of enterprises and institutions in various spheres of activity.

*Peculiarities of the development of marketing and logistics at the stages of digital transformation of the economy of Ukraine.* The results of the analysis of marketing and logistics development at the stages of digitalization of the economy (see Table 1) are presented in Tables 3-4.

Table 3

### Characteristics of marketing development

Stages	Characteristics
I 2000-2019	Rapid development and spreading of digital marketing technologies [32, 15]: marketing research, marketing communications, sales, business analytics, etc. The beginning of the application of ICT IR4.0 in marketing, in particular, product life cycle management, cloud technologies, Big Date. Expansion of types of digital marketing channels [15, p. 48-49]: the Internet, local networks, mobile gadgets, digital television, interactive screens, POS terminals, etc. The spread of new forms of employment and informal labor relations in the field of marketing, in particular, freelancing [27]
II 2020-2022	The spread of online platforms for buying and selling products and services. Growing share of digital trade. Expansion of the nomenclature and areas of use of ICT IR4.0 in marketing. The growing role of mobile gadgets as a digital marketing channel. Digitalization of consumer behavior, growing influence of digital marketing tools on consumer decision-making [13]
III From 2022	The spread of practical application of ICT IR4.0 in marketing, as a reaction to the losses of infrastructure, personnel, marketing, consumer, etc. potentials, as well as for security reasons in the regions located in or near the warfare. Constrained transition to new business analytics tools, which requires appropriate retraining of marketers [14]. Expanding the practice of applying AI in marketing. The growth of non-commercial marketing aimed at strengthening the image of Ukraine, the Armed Forces of Ukraine and other institutions, forming public opinion [17], strengthening patriotism, etc. Application of marketing tools for material and moral support in struggle against Russian. Formation and promotion of a positive image of Ukraine abroad. Decrease of consumption in Ukraine. The expansion of foreign consumers of Ukrainian commercial digital marketing services. Changes in the relevance of digital platforms in digital marketing channels. Changes in consumer behavior towards their further digitalization. Increasing share of messenger users
IV Post-war period	The post-war recovery and development of Ukraine is predicted to take place in the concept of innovative advancement, which is practically a single option in the conditions of IR4.0 and changes in technological ways [2]. Accordingly, the application of digital tools and methods of innovation marketing and knowledge marketing as the basis of innovation is substantial. Taking into account the loss of a

	significant part of the state's potential, we can state that trends of digitalization of the national economy in general and marketing in particular, from previous stages, will continue. At the same time, by analogy with the countries - leaders of digitalization [1], radical changes in marketing and logistics are possible. So, in particular, the whole scale application of ICT IR4.0 [28] allows to combine offer and demand, customize marketing and logistics.
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*Source: developed by the authors*

Table 4

#### Characteristics of logistics development

Stages	Characteristic
I 2000-2019	Implementation of separate ICTs IR4.0 in logistics activities, creation of logistics cloud platforms and services on their basis [29]. Introduction of digital technologies in warehouse, transport logistics, management of enterprise logistics systems, payment systems. In particular: cloud technologies, Big Data, proximity identification of objects - in warehouse logistics, as well as predictive analytics, Big Data, cloud technologies, analytical digital technologies in logistics management systems [33, 34]. GPS monitoring for route optimization and control of transport processes [33]
II 2020-2022	Intensive transfer of logistics to the Internet in the conditions of COVID-19. A rapid increase of digitalization of almost all types of logistics activities, both in general and in separate logistics operations. Application of almost entire spectrum of ICT IR4.0 [28]. The expansion of digital technologies of remote work. Creation of digital logistics platforms for goods ordering, sale, payment [30]. Expansion of various product delivery services. The use of electronic and mechanical devices for receiving shipments of goods, post machines. Test postal delivery by drones, which was carried out in 2021 ("Nova Poshta").
III From 2022	Expansion of application the entire spectrum of ICT IR4.0 in logistics systems. The use of artificial intelligence, predictive analytics, Big Data, industrial Internet of Things, robotics, GPS monitoring, blockchain, chat bots for logistics management, automation and optimization of logistics operations, reduction of labor needs, etc. Creation of virtual warehouses that store digital models of parts/assemblies in the cloud, which are printed on a 3-D printer as needed [35, 36]. Delivery of goods by drones in conditions of increased danger (territories of hostilities, territories bordering the aggressor) or to hard-to-reach locations (disrupted transport routes, mines, etc.)
IV Post-war period	Technologies of digital transformation of various types of logistics to solve the problems of its development in the conditions of post-war recovery and transition to advanced innovative growth of the national economy of Ukraine are investigated in the work [3417]. They are grouped into sets according to the specifics of solving problems related to: ensuring high organizational and technical-technological flexibility and adaptability of logistics systems; permanent updating of the knowledge and skills of personnel involved in logistics; raising the level of innovative culture of personnel of logistics systems and chains; effective management of environmental risks, etc

*Source: developed by the authors*

Regarding the current problems of the development of digital marketing and digital logistics, it should be noted that, in general, they are similar to problems highlighted in stages of digitalization of Ukrainian economy and certain types of human activity, indicated above.

*Taking into account the peculiarities of marketing and logistics development in innovative development strategies of enterprises and institutions (in the system of activities for their marketing and logistics support) in the digital economy. The content of marketing and logistics support for two main strategic approaches to the selection of functional sequences of the innovation process: pulling into the market and pushing into the market is presented in the Table 5.*

Table 5

Activities of marketing and logistics support of the innovation process

Structural parts of the innovation process	Activity System	
	Marketing support	Logistics support (types and elements of logistics)
Pulling innovation in by the market (improving and ordinary innovations)		
Market research	Analysis of the current state and trends in the development of market processes. Identification and analysis of consumer problems. Generation of innovation ideas.	-
Creation and production of innovation	Business analysis. Development of a marketing program and verification of the possibility of its implementation. Market tests of innovation	Procurement: suppliers, transport, warehouses, supplies. Production: internal transport, lifting and transport equipment, supplies, warehouses.
Commercialization of innovations	Stimulating demand and promoting innovation in the market. Monitoring of the market and market positions of the innovator	Distributive: structure and elements of the distribution and commodity circulation system, sales and trade intermediaries, transport, warehouses, supplies.
Pushing innovation into the market (radical innovation)		
Fundamental and applied research	Analysis of NTP development trends (global, sectoral). Generation of innovative ideas	Procurement: suppliers, transport, warehouses, stocks
Creation and production of innovation	Business analysis. Development of a marketing program and verification of the possibility of its implementation. Market tests of innovation	Procurement: suppliers, transport, warehouses, stocks. Productive: transport, lifting and transport equipment, warehouses, stocks
Commercialization of innovations	Formation and stimulation of demand, promotion of innovation. Monitoring of the market and market positions of the innovator	Distributive: structure and elements of the distribution and commodity circulation system, transport, warehouses, stocks, sales and trade intermediaries

*Source: developed by the authors*

The proposed sequence of procedures for managing digitalization of marketing and logistics support strategies for the innovative development of enterprises and institutions (organizations) indicated in the Table 5 is presented in Fig. 1.

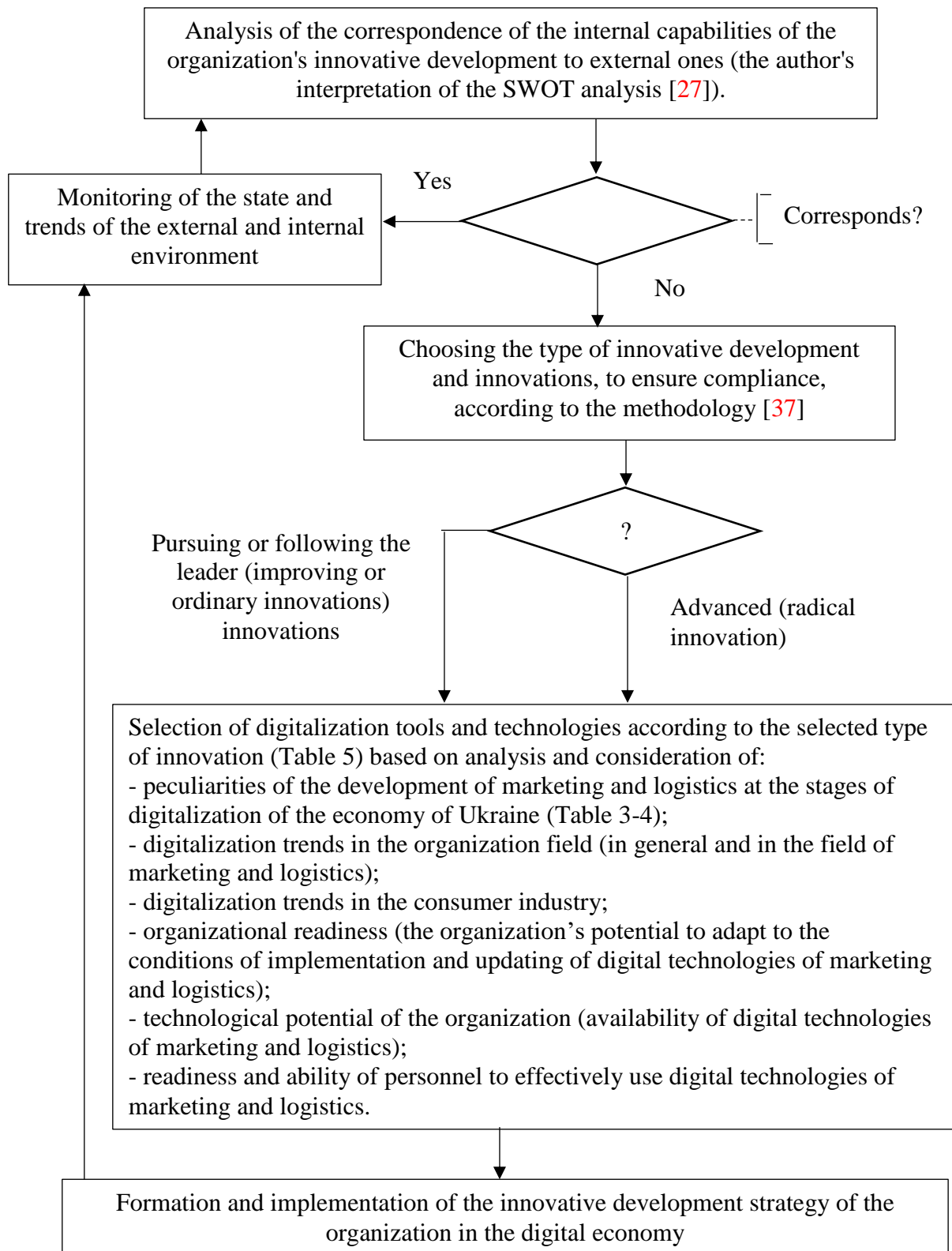


Fig. 1. Scheme of management of digitalization of marketing and logistics support for strategies of innovative development of organizations in the digital economy

*Developed by the authors*

The final decision as for the expediency of implementing a specific option of digitalization of marketing and logistics should be made based on the results of the analysis of its economic efficiency.

Generalization of the above allows to draw the following conclusions.

1. The driving forces of the digital transformation of Ukraine's economy based on ICT IR4.0 have been determined, which made it possible to identify four main stages of digitalization. The main characteristics of each of the stages are outlined: time period; driving forces of digital transformations; their essence and content; positive impact of digitalization.

2. The evolution of the processes of digital transformations in various spheres of human activity at selected stages of digitalization of Ukrainian economy was studied, in particular, in terms of: digitalization tools and technologies; positive and challenging aspects of digitalization. The obtained results testify to the accelerated formation of the digital economy, which creates conditions for the post-war recovery and innovative development of the national economy of Ukraine as a concept of innovative anticipation.

3. The features and main trends of the development of marketing and logistics at the stages of digital transformation of the economy of Ukraine are determined. They include: intensive implementation of ICT IR4.0, digitalization of communication and sales marketing policy activity; marketing research; marketing business analytics, etc.; expanding the range of digital marketing channels; digitalization of almost all types of logistics, both in general and their individual procedures. Integration of digital technologies and tools of marketing and logistics for market-oriented management of logistics flows (material, informational, financial, service, etc.) at all stages of production and distribution (sales) of products with the aim of satisfying consumer needs more effectively than competitors.

4. A scheme has been developed reflecting the sequence and content of the procedures for managing the digitalization of marketing and logistics support strategies for the innovative development of organizations in the digital economy. A system of factors of information and analytical support for management decisions making has been identified. Recommendations for considering the peculiarities of marketing and logistics development in the system of marketing and logistics support are offered for each of the two main strategic approaches to the selection of functional sequences of the innovative process: pulling into the market and pushing into the market.

The obtained scientific results deepen the theoretical and methodological foundations of determining and taking into account the patterns of development of the digital economy in Ukraine, both in general and in separate spheres, in particular, marketing and logistics.

Further research should be aimed at determining the foundations of the organizational and economic mechanism for managing the processes of digital transformation of the national economy and its components: regions, industries, individual enterprises and institutions.

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The chapter of the monograph includes research results on the topics: "Organizational-economic provision of post-war sustainable development of territories based on the infrastructure-service methodology for the development of innovative communities", No. 0123U1002714, state budget of the Ministry of Education and Science; "Methods and tools of marketing and management in the digital economy", No. 0123U103232, initiative.

# **METHODS OF INFLUENCE OF SOCIAL NETWORKS ON PUBLIC OPINION USING INTERNET-MARKETING TOOLS\**

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In the modern world of information technologies, one of the most popular methods of promotion is the use of the Internet. The marketing potential of using web resources is extremely high, and the rapid development of the network and its capabilities every year changes and makes more accessible the methods by which companies can contact their target audience. Internet marketing makes it possible to significantly reduce the company's advertising expenses, expand the scope of business with minimal costs, as a result of which the cost of contact with the consumer is reduced several times.

It is also worth noting that the Internet concentrates an unprecedented amount of information about people's lifestyle, interests, and values. The marketer's task is to carefully analyze the preferences of buyers and create ideal conditions for making a purchase decision. Internet marketing is aimed at providing customers with the additional information they need to make a choice.

Today, many social phenomena deserve attention, which gave impetus to the development of new advertising tools and ultimately shaped modern marketing. One of the modern advertising tools on the Internet is social networks – media platforms for user communication, a unique tool for building communication between people, groups, and communities. The average user of a social network is active and open to receiving new information, which carries enormous potential for companies' marketing activities on the Internet.

Today, social networks offer many promising opportunities for business entities to attract potential customers, increase sales and create a positive image. This tool has a number of advantages both among traditional marketing tools and other online promotion tools, such as, in particular, banner and viral advertising, search engine optimization of a website, e-mail marketing, blogging.

Social networks have a great impact on the formation of public opinion due to their wide reach and ability to quickly disseminate information. They create platforms for discussing various topics, allow users to express their views, exchange opinions and interact with various sources of information. It should be noted, at the same time, that the so-called algorithms of social networks enhance this effect by personalizing the content and ensuring its visibility among the target audience, which can both support and change the existing beliefs of society.

In the field of marketing, the relevance of social networks' influence on public opinion is due to the fact that they are becoming key channels for promoting brands and interacting with customers. Another point to note is the fact that marketers are using social media to create targeted campaigns, analyze consumer behavior and build brand loyalty. Given that public opinion is formed and changed in real time through social platforms, the effective use of these tools allows companies to quickly adapt their strategies, increase brand awareness and influence consumer decisions, making social media irreplaceable in today's marketing environment.

Therefore, it can be considered that the relevance of social networks influence on public opinion in the field of marketing is due to several key factors. First, social networks are the primary source of information and communication for billions of people around the world, allowing brands to reach a wide and diverse audience at minimal cost. Second, user interaction with social networks content creates valuable data about consumers, their preferences and behavioral tendencies, which allows marketers to more accurately target their campaigns and personalize offers. All this makes digital technologies extremely important for the development of Internet marketing as well.

The results of an in-depth study of scientific and practical literature allowed us to assert that despite numerous achievements, many theories and concepts, the issue of the influence of social networks on public opinion today in the context of new digital technologies has not been fully covered yet, which determined the choice of this topic and its relevance. The purpose of the study is to characterize the features of the influence of social networks on public opinion in the modern conditions of the development of new digital marketing technologies. The main task that is set within the framework of this article is to describe how, through Internet marketing, it is possible to use social networks to influence public opinion. To achieve the goal, a number of methods were used, in particular: induction and deduction, comparison and systematization — to determine the list of key features of the influence of social networks on public opinion in the modern conditions of the development of new digital marketing technologies; synthesis and analysis — to prove the significance of the influence of social networks on public opinion; tabular and graphic — for qualitative presentation of research results; abstract-logical — for the formation of theoretical generalizations and research conclusions. It has been proven that Internet marketing in social networks provides a comprehensive approach to the formation of public beliefs, contributing to the strengthening of brand positions and influence on social processes.

Social networks have been with us for a long time, as well as Internet marketing, so there is enough scientific and practical literature. For example, O. Kaminska [1] investigates psychological aspects that contribute to the formation of Internet addiction among young people. The author points to such factors as social isolation, low self-

esteem and the need for self-realization through online platforms. A. Krasniakova [2] notes that Internet marketing in social networks allows one to effectively reach the target audience using targeted advertising and analysis of user behavioral data. This creates new opportunities for the formation of public opinion through controlled dissemination of information and advertising messages, which confirms the importance of integrating Internet marketing tools into a social strategy. Ye. Kulyk and O. Bartosh [3] also note the importance of ethical aspects of using Internet marketing in a virtual environment, which is a key factor for the long-term success of marketing strategies. N. Maleyeva [4] explores how these communicative practices can be used for effective Internet marketing campaigns, allowing content to be adapted to the specific needs and interests of a gifted audience. She emphasizes the importance of understanding the communication patterns of young people in order to create relevant and attractive marketing content that contributes to the formation of positive public opinion. I. Bashynska [5] considers various aspects of marketing communications, including the creation of brand content, interaction with customers and the use of analytical tools to evaluate the effectiveness of campaigns.

O. Ugolkova [6] emphasizes the importance of using Big Data and analytics to optimize marketing campaigns in social networks. O. Vlasenko and O. Budnik [7] note that the cooperative transformation vector allows enterprises to use resources more effectively, adapt to rapid market changes, and improve interaction with customers through social networks. They also discuss the challenges associated with implementing new technologies, such as the need to train staff and ensure cyber security, which are important aspects for successful implementation of online marketing tools. M. Oklander and O. Romanenko [8] emphasize that understanding these differences allows enterprises to more accurately define their marketing strategies and effectively use various tools to reach the target audience. O. Sokhatska and O. Legkyi [9] noted that the success of digital marketing strategies depends on clearly defining goals, adapting content to the specifics of social networks, and using analytical tools to monitor the effectiveness of campaigns. They also discuss the importance of managing risks associated with brand reputation and protecting user data, which is critical to maintaining public trust and the formation of positive public opinion through social networks. V. Zanora [10] also considers the role of social networks as key channels for the implementation of digital marketing strategies, emphasizing their ability to form public opinion through interactive and dynamic communication processes.

The active use of social networks for communication purposes led to the emergence of a new type of marketing, such as Social Media Marketing (SMM). SMM-marketing involves conducting business by attracting additional attention of potential consumers to the policy and mission of the company, brand, products and services of

the enterprise with the help of social networks on the Internet. Such activities provide the enterprise with additional traffic and increase the reach of the target audience.

Social networks as a tool of Internet marketing communications for further development can be used by both a small enterprise and a powerful international company. There are no restrictions on the industry in which the company operates. Any industry can be presented publicly to millions of users.

To effectively conduct marketing in social networks, you can use paid and free advertising, banners, targeting, scheduled publications, as well as to maintain constant relationships with existing and potential customers.

Social networks are interactive online platforms that allow users to create personal profiles, share information, communicate and interact with other users on a global scale. It should be noted that they act as a new type of social space where social ties are formed and developed, current topics are discussed and ideas are exchanged. The importance of social networks lies in their ability to quickly disseminate information, influence public opinion and create conditions for an active civil society. We believe that social networks are becoming an important tool for business and marketing, allowing businesses to effectively communicate with their target audience, analyze user behavioral data and implement targeted advertising campaigns. Thus, social networks not only change the way of communication and interaction between people, but also play a key role in shaping modern social, economic and cultural processes.

It should be taken into account that the target audience in social networks is somewhat different from the usual audience of the enterprise. People of different ages, lifestyles and social status, can unite in Internet communities.

Active communication with the audience makes it possible to clearly understand the consumer's portrait, his age, gender, income, preferences, wishes, interests, public position, etc. You can immediately learn about the weaknesses of users through comments and take them into account in the future when developing a complex of Internet communications. Active Internet users usually start trends, which will be easier to respond to later, since the company will already have time to adjust its content and make changes in the conduct of business in accordance with the demands that are just emerging in the market.

Activity in social networks is always increased by various quests, quizzes, contests and drawing related to the company's activities. One of the unwritten rules is to include in the content of the page incentives for the audience to take a certain action, or provocative questions.

In the context of Internet marketing, social networks serve as influential platforms for shaping public opinion. Public opinion, in this case, refers to the collective attitudes and beliefs of the population on social, political, economic, and cultural issues rather than merely consumer loyalty or preferences. At the same time, it reflects the collective



mentality of society and influences decision-making at various levels of management. The importance of public opinion lies in its ability to shape social norms, promote democratic processes, and provide feedback between the government and citizens.

In today's environment, social networks play a key role in the formation and dissemination of public opinion, as they provide a platform for information exchange, debate and public mobilization. Therefore, understanding the mechanisms of public opinion influence is important for the effective use of Internet marketing tools, which allows forming a positive brand image and influencing social processes (Fig. 1)

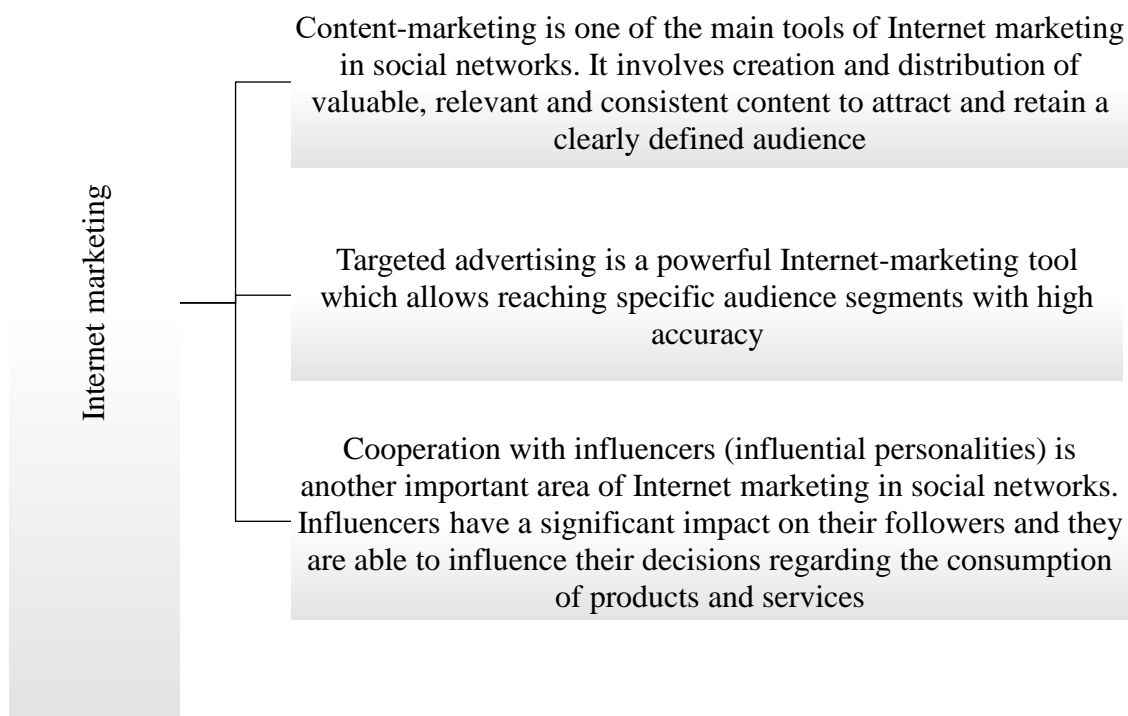


Fig. 1. Internet marketing activities in social networks

*Source: development of the author*

It is clear that social networks significantly influence public opinion through several key mechanisms. First, they enable rapid and widespread dissemination of information, allowing users' beliefs to be shaped and changed in real time. Social platform algorithms determine what content is shown to each user, thus creating personalized information flows that can amplify certain points of view and form echo chambers. Second, social media facilitates interactive interactions between users, allowing for the discussion and dissemination of ideas and the mobilization of civic engagement. The third important aspect is the use of targeted advertising and Internet marketing tools which allow you to effectively influence target audiences, forming a positive or negative image of brands, political candidates or social initiatives (Table 1).

Table 1

## Using social networks to achieve marketing goals

Principles of use	Characterization
Building the brand	Social networks are an effective tool for building and strengthening a brand. By regularly publishing unique and relevant content, brands can create a recognizable image and establish an emotional connection with their audience.
Attracting customers	Social networks provide an opportunity to engage customers directly through interactive campaigns, contests, surveys and promotions. This helps increase the level of interaction with the audience and attract new customers
Increased recognition	Social networks are a powerful tool for increasing brand awareness among a wide audience. Using paid advertising campaigns such as targeted advertising and promotional posts allows brands to reach specific market segments with high precision.
Driving traffic to the web-site	Social networks can significantly contribute to increasing traffic to the company's official website. Using links in posts, advertisements, and profiles allows you to direct users to landing pages where they can make purchases, register for events, or get more information about products and services
Analysis and optimization of marketing campaigns	Social networks provide access to powerful analytics tools that allow you to track the effectiveness of marketing campaigns in real time

*Source: development of the author*

It should be noted that Internet marketing itself actively uses social networks as a powerful tool to form and influence public opinion through several key strategies. First, targeted advertising allows you to precisely identify and reach target audiences based on their interests, behaviors and demographic characteristics, which increases the effectiveness of marketing campaigns. Secondly, content marketing in the form of articles, videos and interactive publications contributes to the creation of a positive brand image and the introduction of certain values and ideas into the minds of users. It should be noted that cooperation with influential individuals (influencers) allows you to expand your audience reach and ensure trust in the advertised products or services through recommendations from famous and authoritative individuals. At the same time, the use of Big Data and analytics allows you to constantly optimize marketing strategies, analyzing user reactions and adjusting approaches for maximum impact on public opinion. In our opinion, Internet marketing in social networks provides a comprehensive approach to the formation of public beliefs, contributing to the strengthening of brand positions and influence on social processes.

While consumer loyalty and targeted advertising can shape individual purchasing decisions and brand attitudes, public opinion extends beyond these individual preferences to reflect societal perspectives on broader issues.

Social networks facilitate this by providing platforms for discussion, debate, and information exchange, where users not only interact with brands but also form and express views on a wide array of topics. Algorithms within social media further influence this by personalizing content and creating echo chambers that reinforce existing views or promote new ideas.

Thus, Internet marketing on social platforms not only helps build brand loyalty and influence consumer choices but also contributes to the formation of public opinion by engaging users in a continuous exchange of ideas and viewpoints on larger societal concerns.

The opinions, reviews and recommendations provided by social media users have the power to create a significant impact on how consumers assess and respond to a particular product or service, shaping related perceptions and attitudes. However, the influence of social media in the economic sphere does not stop at consumer influence alone. Advertising campaigns designed and promoted through social media also play an important role in shaping purchasing decisions. By utilizing the creative and interactive features of social media, businesses can design campaigns that attract attention, evoke emotions, and provide relevant information to their target audience. As a result, the potential to influence individual or group purchasing decisions becomes greater and more significant. Thus, the influence of social media in the economic sphere is not just fleeting, but has become a crucial factor in shaping the dynamics of consumption and economic activity at large [11].

However, it is important to recognize that the impact of social media on economic decision-making is not always positive. In this regard, it is important to recognize that information that is widely disseminated through social media does not always have a high level of accuracy or credibility. Content that contains errors or even misleading information has the potential to circulate quickly and have a detrimental effect on how consumers value a product or service. Therefore, in evaluating the influence of social media on economic decisions, it should be emphasized that this phenomenon has a dark side that may be detrimental and interfere with optimal decision-making processes. Attempts to critically analyze information received from social media, as well as understanding the potential for distorted views due to the "filter bubble" effect, are important in ensuring that economic decisions are based on accurate, complete and diverse understandings [11].

In assessing the impact of social media on economic decisions, it is important to recognize that un-certainty plays a significant role. A global pandemic like COVID-19 is a clear illustration of how information and viewpoints spread through social media can have a strong influence on the level of uncertainty in an economic context. The COVID-19 pandemic has exposed how the spread of information that is not always

verified or accurate through social media can cause shifts in perceptions and beliefs about the future direction of the economy [12].

Here it is worth mentioning the war that is currently ongoing on the territory of Ukraine. We receive a large amount of information through social networks and mass media channels, namely news from the front, the state of the army, weapons, or the development of each area of the state. Due to the possibility of manipulating public opinion, false information appears on the Internet to cause anxiety, worry and panic among the population.

Each social network has its own unique tools and capabilities. The most popular social networks in Ukraine are Instagram, Facebook, and YouTube.

In the Instagram social network, the activity and engagement of users is many times higher than in other networks. Promoting products or services in Instagram gives you the opportunity to communicate with a large audience and attract visitors to your profile through hashtags, which sort publications by keywords or phrases related to the plot of the photo or video. It is believed that their use is essential because visual content is perceived by people many times faster than textual content.

Advertising in Instagram is a good tool for promoting goods and services in the B2C segment, as it gives an opportunity to create the uniqueness of your product, reinforce its power with a branded style designed specifically for this social network. Thus, company brands can stand out among competitors and be better remembered by the user. For example, all product photos can be taken in the same style, or each product group can have its own separate style, which will not radically differ from the general corporate style of the company. When it comes to video content, it is important to include a variety of interesting ideas that also increase brand awareness.

Despite the ease of use, the competition in Instagram is very high, and new unique pages are created every day.

If the business is focused on a certain territory or region, it is essential to use a tool such as geotagging. These are geographic designations for photos or videos on one's own page. Many users search for photos based on a specific location, and this is another tool that can increase the number of quality target audiences.

The main Instagram metrics are the number of impressions of posts, likes and comments, the number of unique profile views and clicks to the site via a link, growth metrics, the number of posts using a branded hashtag, the number of viewers of a live broadcast, and the rate of viewing photos or videos in Stories.

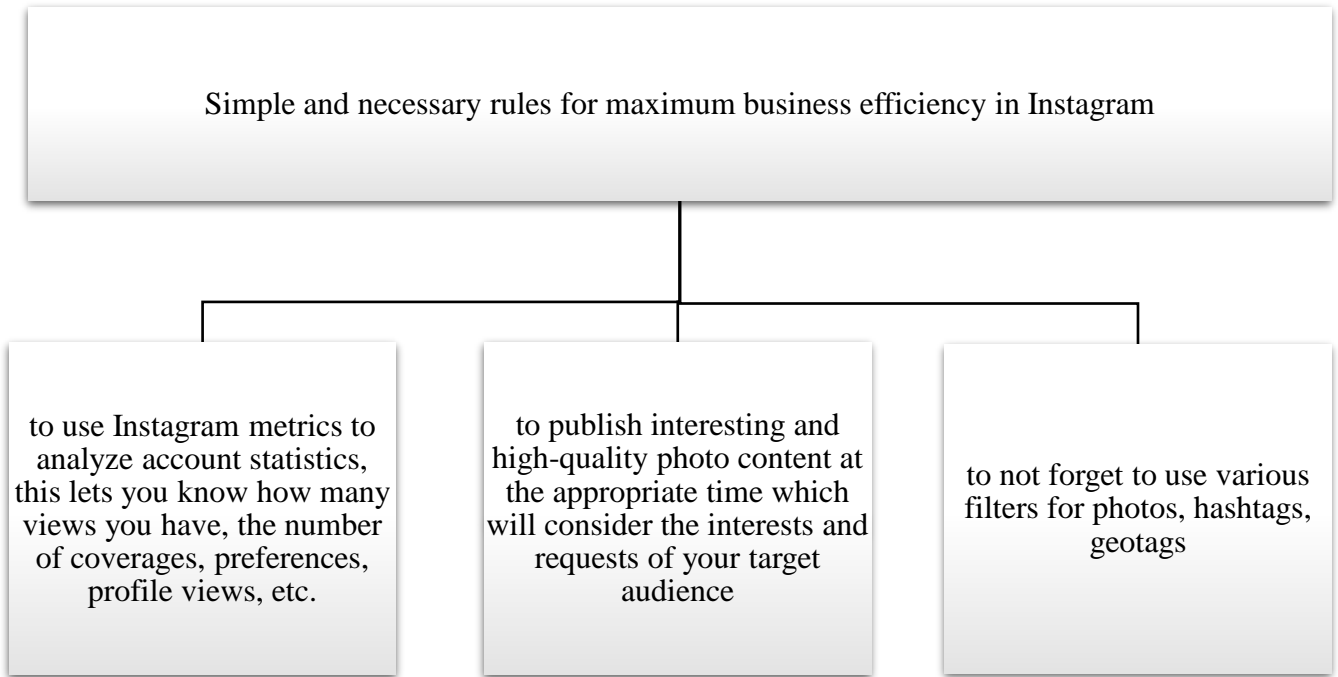


Fig. 2: Simple and necessary rules for the maximum efficiency of doing business in Instagram

*Source: development of the author*

Considering the above thoughts and arguments, we can outline the main methods by which social networks influence public opinion, highlighting the key aspects (Table 2).

Table 2

Main methods of influence of social networks on public opinion

Methods of influence	Content marketing	<b>Creating Valuable Content:</b> Publications, articles, infographics, videos that inform, entertain, or solve the target audience's problems.
		<b>Viral Content:</b> Creating content that can quickly spread due to its emotional component or relevance.
	Targeted Advertising	<b>Targeting:</b> Using user data to show ads to specific groups, which increases the effectiveness of campaigns.
		<b>Remarketing:</b> Reminding about products or ideas that have already sparked interest.
	Data Analysis	<b>Social Media Monitoring:</b> Studying moods, discussions, and trends to adjust influence strategies.
		<b>Campaign Effectiveness Analysis:</b> Using analytics to assess results and make adjustments.
	Audience Engagement	<b>Engagement through Polls and Contests:</b> Active participation of users in content creation and discussions.
		<b>Live Streaming:</b> Real-time interaction, allowing for quick responses to audience requests and needs.
Method	Cross-Platform Strategy	<b>Content Integration:</b> Using the same messages across different platforms to strengthen impact.

		<b>Cross-promotion:</b> Collaboration between different brands or projects to achieve common goals.
	<b>Crowdsourcing and Collective Participation</b>	<b>Engaging the Audience in Content Creation:</b> Encouraging users to create materials (photos, videos, texts) related to the brand or topic.
		<b>Collaborative Projects:</b> Initiatives that unite users around common goals (e.g., environmental campaigns).
	<b>Research and Experiments</b>	<b>A/B Testing:</b> Testing different content or ad variants to determine the most effective one.
		<b>Focus Groups:</b> Involving small groups to gather feedback and ideas before launching campaigns.
	<b>Social Platforms as News</b>	<b>Impact on the Information Space:</b> Using social networks as the primary news channel that shapes public opinion.
		<b>Dissemination of Facts and Misinformation:</b> The challenge of combating fake news and the importance of critical thinking.
	<b>Brand Communities</b>	<b>Creating Groups and Communities:</b> Encouraging users to join brand communities where they can exchange opinions and experiences.
		<b>Loyalty Support:</b> Building long-term relationships with clients through active participation in communities.
	<b>Interactive Formats</b>	<b>Surveys and Quizzes:</b> Engaging users with interactive content to increase interest.
		<b>Chats and Q&amp;A Sessions:</b> Virtual meetings with experts or brand representatives to discuss current topics.
	<b>Promotions and Discounts</b>	<b>Limited-Time Offers:</b> Creating a sense of urgency to boost conversions.
		<b>Exclusive Offers for Subscribers:</b> Encouraging subscriptions and activity through special discounts.
	<b>Audience Segmentation</b>	<b>Personalized Messaging:</b> Using data to create customized offers for different segments.
		<b>Strategy Adaptation for Various Segments:</b> Adjusting campaign strategies based on specific target audiences.

*Source: development of the author*

In conclusion, it should be noted that social networks have a significant impact on public opinion due to psychological factors that contribute to the active use of these platforms. Internet-addicted young people spend a significant portion of their time on social media, where they consume content that shapes their beliefs and attitudes. The need for social interaction and self-realization through online platforms amplifies the impact of marketing messages, making them more effective in shaping public opinion. Psychological support and educational programs become important tools for regulating this influence, ensuring a balance between the use of social networks and the preservation of individual autonomy.

Social networks represent a new social space where Internet marketing uses targeted advertising and behavioral data analysis to reach target audiences. These platforms provide enterprises with the opportunity to quickly respond to market changes and consumer needs, which contributes to the formation of positive public

opinion through the controlled dissemination of information. The use of various marketing tools, such as content marketing, SEO and paid advertising, allows brands to effectively adapt their messages to the specifics of virtual communication, enhancing their impact on society. The digital transformation of marketing technologies, in particular the use of Big Data and analytics, significantly increases the effectiveness of Internet marketing in social networks. The integration of these tools allows businesses not only to increase brand awareness, but also to build trust and positive attitudes among consumers. In addition, the culture of virtual communication and the communicative practices of young people create favourable conditions for the dissemination of marketing messages, providing a deep and long-lasting influence on public opinion. At the same time, it is important to take into account ethical aspects and potential risks to ensure the sustainable development of Internet marketing and the positive impact of social networks on society.

Further study of international experience in the field of influence of social networks on public opinion through Internet marketing tools is important for understanding global trends and effective strategies that have already proven themselves in other countries. Foreign markets are often characterized by different levels of technological development, cultural features and regulatory frameworks, which allows identifying best practices and innovative approaches that can be adapted to Ukrainian conditions.

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# **DIGITAL TECHNOLOGIES AS DRIVERS IN MARKETING AND LOGISTICS STRATEGIES CHANGES**

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The modern economy is characterized by the rapid development of digital technologies, which significantly transform not only specific industries but also the overall approaches to managing business processes. In this context, marketing and logistics emerge as key elements undergoing substantial transformations. Digital tools such as Artificial Intelligence (AI), Big Data, the Internet of Things (IoT), and blockchain are becoming critical drivers of change in these areas, offering new opportunities to enhance efficiency, optimize processes, and improve customer engagement.

The global economy is undergoing a rapid transformation driven by the development of digital technologies. These changes impact all areas of business but are particularly evident in marketing and logistics. In recent decades, innovative technologies have significantly altered the ways companies interact with their customers, manage supply chains, and optimize internal business processes. In the face of growing competition, rapid market changes, and increasing consumer demands for speed and quality of service, companies are compelled to adopt new management approaches, leveraging digital technologies as a key tool for achieving competitive advantages.

The development of digital technologies such as Artificial Intelligence (AI), Big Data, the Internet of Things (IoT), blockchain, as well as automation and robotics technologies, presents businesses with new opportunities to enhance efficiency, reduce costs, and improve customer interactions. For instance, leveraging Big Data enables companies not only to analyze consumer needs and preferences in detail but also to forecast market changes, design personalized marketing campaigns, and optimize supply chain management. This fosters greater agility in responding to changes in the external environment and enhances companies' capacity for innovation.

The transformation of marketing and logistics strategies is becoming not only a matter of efficiency but also a question of survival for many companies. Successful organizations are adopting new marketing management approaches based on automation, personalization, and interactivity, leveraging digital channels to communicate with customers. Logistics, in turn, is becoming increasingly automated, focusing on precise inventory management, minimizing transportation costs, and optimizing the entire supply chain. These approaches are critical for enhancing

customer service quality, reducing delivery times, and ensuring transparency in business processes.

At the same time, the implementation of digital technologies brings not only advantages but also certain challenges for businesses. The need for substantial investments, increased management complexity, cybersecurity risks, and the necessity to adapt staff to new conditions are key aspects that companies must consider. In this context, it is crucial to understand how digital technologies can impact marketing and logistics strategies and how companies can best adapt to the new realities of the digital economy.

Thus, the topic of digital technologies impact on marketing and logistics strategies is extremely relevant. It not only raises questions about the possibilities of optimizing business processes, but also about how innovations can contribute to the creation of new business models and approaches to management. The purpose of this study is to analyze the main directions of the digital technologies implementation in marketing and logistics, to study their impact on the companies efficiency and to determine the key factors that ensure the digital transformation success.

Research in this field allows not only to study how new technologies affect traditional business processes, but also to understand how companies can use digital opportunities to create new strategies that ensure growth and sustainable development in the digital economy.

The digital technologies impact on the marketing and logistics strategies of business is investigated by numerous scientific works that consider both individual aspects of digital transformation and its general impact on the management effectiveness in the digital economy conditions. Modern authors focus on various aspects of the digital innovations impact. One of the key directions is research on digitalization of marketing communications. For example, the use of big data makes it possible to segment the audience more precisely, ensuring the personalization of marketing campaigns and increasing their effectiveness. Research shows that companies that actively use data analytics tools have a greater ability to quickly adapt to changes in consumer preferences, allowing for increased market share.

Logistics, in turn, is being transformed by technologies such as warehouse automation, the use of drones for delivery, and the use of blockchain to track product flows. These innovations reduce costs, increase the speed of order processing and provide greater transparency in supply chains. According to numerous studies, the implementation of IoT in logistics processes allows companies to manage inventory more efficiently and reduce operational costs.

Use of big data (Big Data) in marketing strategies. One of the key aspects in digital transformation of marketing is the use of big data. Many authors focus on the fact that the analysis of large data sets allows obtaining new knowledge about consumers, their

preferences and behavioral patterns, which contributes to the development of more effective marketing strategies. For example, research by Daivin D. and Lindsay M. shows that the use of big data in marketing allows not only to personalize communication with customers, but also to predict changes in demand, which helps to avoid losses due to errors in strategic planning [1].

Another approach to the use of big data in marketing was proposed by Chen J. and his colleagues, who consider Big Data as a tool for market segmentation and precise audience targeting [2, 3]. In their research, they claim that analyzing data from social networks allows not only to determine customer preferences, but also to identify potential markets for development, which is important in the context of business globalization.

Marketing processes automation and implementation of artificial intelligence. Marketing automation is an important component of digital transformation. Artificial intelligence (AI) allows you to automate routine tasks such as customer segmentation, managing advertising campaigns and handling customer inquiries. For example, research by Kardashian V. and Martin A. confirms that the use of AI in marketing communications increases the effectiveness of interaction with customers, providing more accurate segmentation and personalized messages [4, 5].

The role of artificial intelligence in marketing was also studied by Mitchell T. and Gary A., who note that AI allows not only to automate part of the processes, but also provides the ability to predict customer behavior based on the analysis of large data sets [6]. They argue that the implementation of AI in marketing strategies allows companies to reduce advertising costs while maintaining high communication efficiency.

Digital technologies in logistics: Internet of Things (IoT) and blockchain. In the field of logistics, digital technologies play an equally important role. The introduction of IoT and blockchain is significantly changing approaches to supply chain management. Research by Müller H. and Kraus D. shows that IoT allows for greater transparency of logistics processes, increases the efficiency of inventory management, and reduces the cost of storing goods [7, 8]. The authors claim that IoT sensors allow tracking the movement of goods in real time, which allows companies to quickly respond to changes in supply chains.

The role of blockchain in logistics was studied by Jones S. and Brown L., who note that this technology provides transparency in supply chains, increases trust between market participants and reduces fraud risks [9]. In their research, they emphasize that blockchain allows for reliable data transmission, which is especially important for logistics on an international scale.

Marketing and logistics integration processes: new opportunities through digital technologies. The marketing and logistics integration is a new approach to business

process management made possible by digital technologies. According to a study by Parker D. and Johnson R., modern CRM systems allow you to combine marketing data with supply chain data, which provides more accurate demand forecasting and inventory optimization [10]. This allows you to reduce inventory management costs and increase business flexibility in the face of constant changes in the market environment.

Another approach of marketing and logistics integration was proposed by Wilson K. and O'Connell S., who emphasize the role of digital platforms in ensuring closer interaction between marketing and logistics departments [11]. They note that modern digital platforms provide fast data processing and reduce decision-making time, which positively affects overall business efficiency.

Digital transformation challenges of marketing and logistics. Despite the numerous advantages of digital technologies, scientists note that their implementation is accompanied by certain challenges. In particular, research by Smith R. and Clark E. emphasize that the main barriers to digital transformation are high implementation costs, the need to change corporate culture, and growing requirements for personnel qualifications [12]. The authors note that companies must develop strategies to overcome these barriers if they wish to successfully implement digital innovation.

Similar problems were also considered in Wang C. and Li N. studies (Wang C., Li N.), who draw attention to the importance of cyber security in the process of digitalization of marketing and logistics processes [13, 14, 15]. They argue that the growth of digital data increases the risk of cyberattacks, so companies must invest in security measures to protect their data.

Thus, modern scientific literature confirms that digital technologies significantly change the marketing and logistics companies strategies, providing them with new opportunities to improve efficiency and reduce costs. However, the successful implementation of digital tools requires companies to invest, adapt corporate culture, and address a number of challenges related to cybersecurity and data management.

The reviewed scientific sources also emphasize the importance of the relationship between marketing and logistics in the context of digitalization. Modern approaches to supply chain management are focused on integrating marketing data for more accurate demand forecasting and inventory optimization. This requires the use of modern information systems and data analysis tools that allow increasing business flexibility.

The systematic approach in the methodology of this study involves considering digital technologies not as an isolated element, but as part of a complete system that interacts with other business components. Accordingly, the task of the methodology is to identify the relationships between digital tools, marketing and logistics processes, as well as the impact of these relationships on overall business performance. The methodological approach is structured in such a way as to investigate the problem of

the application of digital technologies comprehensively, following several stages: problem formulation, analysis of system elements, determination of key indicators, development of methods of data collection and analysis, and synthesis of results.

The following methods were used in the study:

1. **Big data analysis** — to identify major trends in the use of digital tools.
2. **Surveys and interviews** — to collect expert opinions on the implementation of innovations in marketing and logistics.
3. **Statistical analysis** — to assess the effectiveness of the implementation of digital technologies based on financial and operational indicators of companies.

A comparative results analysis of innovation in marketing and logistics is shown in Table 1. It reflects the key changes and benefits for each function after the application of innovative technologies.

Table 1

Comparative results analysis of innovations implementation in marketing and logistics

Criterion	Marketing	Logistics
Before introducing innovations		
Target audience	Mass, limited segmentation	Standard approach to supply management
Communication	One-way, traditional media	Limited interaction between supply stages
Analytics	Limited, historical data	Little data to optimize
Customer service	General approach	Limited control over order fulfillment
After implementing innovations		
Target audience	Segmented, targeted using digital platforms	Integrated information in real time
Communication	Interactive, digital channels, two-way interaction	Transparency in communication between supply chains
Analytics	Advanced, use of big data, artificial intelligence	Demand forecasting, inventory optimization
Customer service	Personalized approach, automated service	Automated order processing, increased speed
Main advantages		
Efficiency	Increase conversions, reduce advertising costs	Optimize costs, reduce shortages and excess inventory
Customer satisfaction	Growth through personalization	Increased speed of delivery, transparency of execution
Flexibility	Adaptation to changes in demand, better segmentation	Rapid response to changes in the supply chain

*Source: developed by the author based on [2, 11, 15]*

This comparison helps compare traditional and innovative approaches in marketing and logistics, showing how the implementation of the latest technologies affects efficiency and customer satisfaction in each area.

The traditional marketing model transformation in the innovative development conditions is shown in fig. 1. Its structure allows you to visually show the transition from traditional approaches to marketing to new innovative solutions.

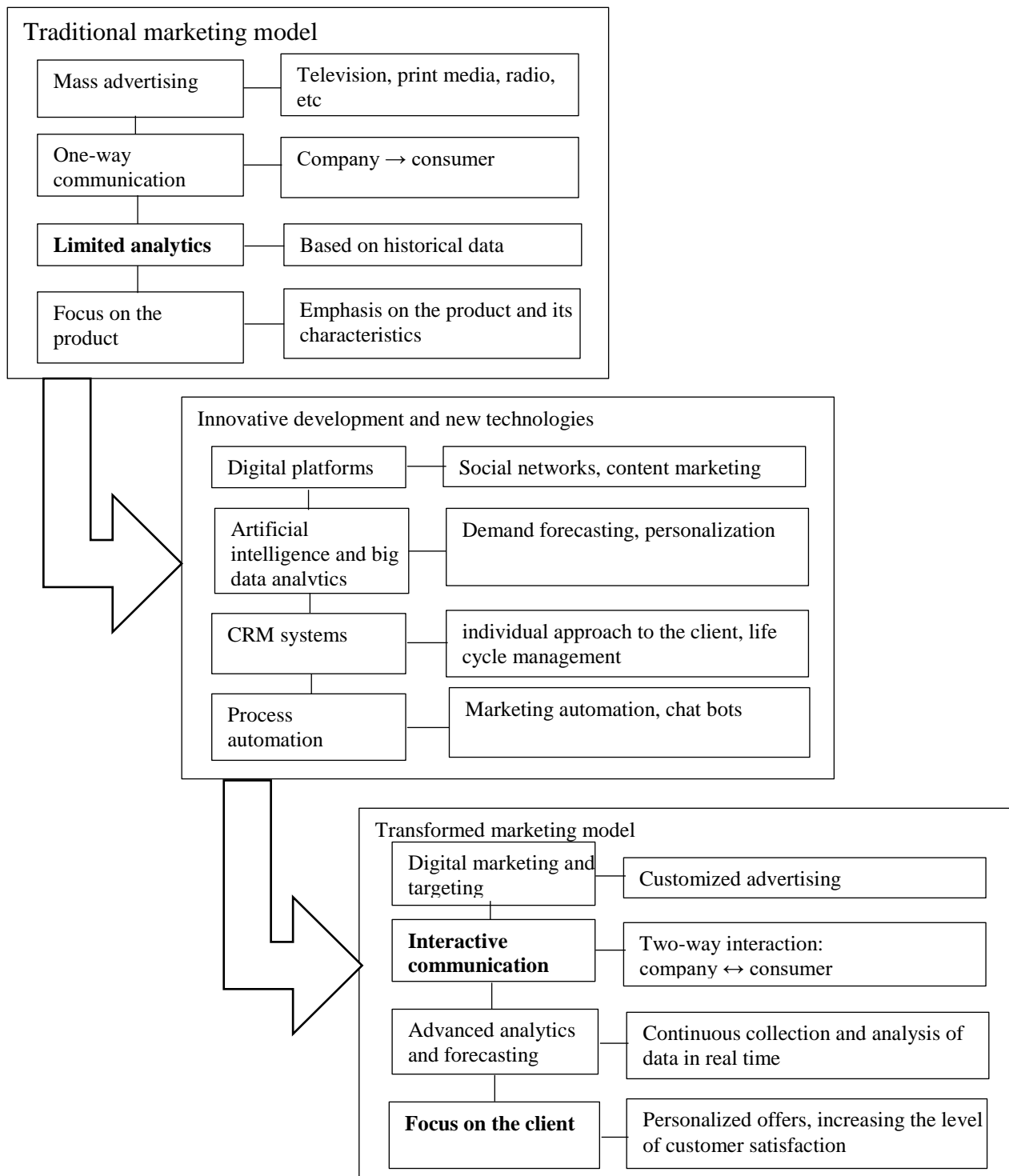


Fig. 1. Traditional marketing model transformation in the innovative development conditions

*Source: own research*

This diagram illustrates the process of transforming the traditional marketing model through the implementation of innovative technologies. The first block,

"Traditional Marketing Model," reflects the key elements: mass advertising, one-way communication, limited analytics, and a product-focused approach, which are characteristic of the classical model.

Next, at the "Innovations and New Technologies" stage, the key tools that have changed the marketing approach are presented: digital platforms, artificial intelligence, big data, CRM systems, and process automation. These elements allow marketing teams to better understand customer needs, personalize communication, and manage the customer experience more effectively.

The final block, "Transformed Marketing Model," demonstrates the new approach: interactive communication, targeted advertising, advanced real-time analytics, and a customer-focused strategy, enabling companies to build more valuable relationships with consumers.

Logistics, as a key component of business processes, is undergoing significant changes under the influence of digital technologies. In today's environment, technological development opens up new opportunities for optimizing supply chains, increasing operational transparency, and improving customer interactions. At the same time, digital innovations contribute to a closer integration of logistics processes with marketing strategies, creating a new level of interaction between company departments.

One of the main technologies influencing logistics is the Internet of Things (IoT). Thanks to sensors and monitoring systems, IoT ensures control over transportation, storage conditions, and the state of goods in real-time. This is especially important for industries that require high precision, such as pharmaceuticals or the food industry, where maintaining temperature control is critical. For example, the use of IoT in logistics allows companies to quickly respond to any deviations in processes, minimizing the risk of losses.

Blockchain is another important element of digital transformation. This technology ensures transparency and security of supply chains, which is especially important for international trade. Companies such as Maersk are using blockchain to track cargo, reducing paperwork, speeding up customs clearance and increasing trust between supply chain participants [15].

Artificial intelligence (AI) also plays an important role in modern logistics. Its use allows you to automate the management of warehouse stocks, forecast demand and optimize delivery routes. For example, FedEx integrated artificial intelligence systems to provide real-time tracking of packages, which not only increased efficiency, but also contributed to increased customer satisfaction.

Warehouse automation has become another important component of digital logistics. Leading companies such as Amazon are actively using robots to sort and pack orders. This reduces the dependence on the human factor, speeds up the processing of

orders and allows working with a large amount of data. Process automation helps reduce costs while increasing accuracy and speed of operations.

Innovative solutions in logistics are also changing its interaction with marketing. Digital platforms enable the integration of data from marketing campaigns into supply chain management systems. For example, information about customer behavior and expected demand can be used to optimize inventory and plan transportation. This provides greater accuracy in forecasting and helps reduce losses associated with shortages or overstocks.

The synergy of marketing and logistics becomes possible thanks to the implementation of CRM systems that allow companies to better manage customer data. For example, delivery status notifications can be integrated into marketing messages, increasing customer loyalty. In turn, improving the quality of delivery and speed of service contributes to the implementation of marketing strategies that emphasize customer orientation.

Despite numerous advantages, digitalization of logistics is not without challenges. One key is the high initial investment required to implement innovations such as IoT, blockchain or warehouse automation. Another important issue is cyber security, because the growth of digital data increases the risk of unauthorized access. In addition, digital transformations require upskilling of personnel, which can become an obstacle to the rapid implementation of changes [1, 8].

The future of digital logistics is connected to areas such as hyperlocal delivery with the help of drones, the use of autonomous vehicles based on artificial intelligence, and the improvement of environmental sustainability through the optimization of routes and the use of energy-efficient technologies. Such innovations open up new opportunities to improve efficiency and create additional value for customers.

Thus, digital innovations are changing the logistics system, making it more flexible, transparent and customer-oriented. They also contribute to the integration of logistics and marketing processes, which allows companies to better adapt to market changes and provide competitive advantages in the digital economy.

The systems approach to studying the issue related to the application of digital technologies in marketing and logistics allows for a comprehensive consideration of the problem, taking into account the interdependence of various components of the business system. The application of this approach provides a broader perspective on the implementation of digital technologies as an element that transforms not only the technical component but also the organizational structure, operational processes, corporate culture, and management system of the company. Thanks to the systems approach, it becomes possible to identify deep interconnections between the elements that ensure the effective integration of digital technologies and achieve maximum impact on business performance. [13].



## Basic principles of the system approach in the context of digital technologies

1. Integrity and integration: The application of digital technologies is not considered as a separate process or element, but as part of a single system that interacts with all structural components of the company. Digital innovations in marketing and logistics must be aligned with corporate goals and strategy, as well as integrated with other business processes to contribute to the balanced development of the company.

2. Interconnection of components: The implementation of digital technologies brings changes in all key components of the company. This includes the technical, organizational and human elements and the relationships between them. In particular, the success of digital transformations depends on how new technologies are combined with operational processes, internal company structure and culture.

3. Adaptability: Digital technologies are dynamic and rapidly evolving, so it is important that the system is able to adapt, constantly improve and update. A systemic approach allows you to create such an adaptive system, where new technologies can be integrated and adjusted according to changes in the external and internal environments.

4. Identifying and managing interrelationships: In addition to technology integration, a systems approach emphasizes the interrelationships between system components. For example, the implementation of CRM systems in marketing can change approaches to communication with customers, which, in turn, requires adjusting logistics processes to ensure speed and quality of service.

Applying stages a systemic approach to solving the problem of digital transformation in marketing and logistics strategies

1. Current state analysis of the system. The first stage is an current state assessment of the company, its business processes and the digitalization degree. In particular, it is necessary to determine which digital technologies are already used in marketing and logistics processes, what goals they pursue, and how these technologies affect the overall efficiency of the company. This allows you to get a comprehensive view of the existing system, to highlight its strengths and weaknesses, as well as to identify the need for new innovations or modernization of existing technologies.

2. Setting goals and forming requirements for digital technologies. At this stage, the strategic goals of the implementation of digital technologies are determined, which should correspond to the company's overall business strategy. For marketing strategies, such goals can be increasing the level of personalization of customer service, expanding the capabilities of data analytics, or optimizing advertising campaigns. In logistics, the goal may be to improve supply chain control, increase order processing speed, or improve delivery accuracy.

3. Selection and integration of digital technologies. According to the the integrity principle of the system approach, digital technologies should be integrated not only

into marketing and logistics processes, but also into the general infrastructure of the company. For example, the implementation of Big Data and AI technologies to analyze customer preferences in marketing must be coordinated with logistics to adapt supplies to forecasted demand. Thus, the selection and integration of technologies takes into account all the key components of the system: marketing, logistics, financial and operational activities of the company.

4. Evaluation and adaptation of the organizational structure and processes. The implementation of digital technologies, as a rule, leads to the need to change the organizational structure of the company and adapt processes. For example, the digital automation of logistics may require a reduction in the number of manual operations, which may require changing the roles and responsibilities of employees. This allows not only to increase the efficiency of the company, but also to adapt it to new market requirements.

5. Monitoring and control of results. After the introduction of digital technologies, results are systematically monitored. This includes evaluating the impact of new technologies on key metrics such as speed of service, customer satisfaction, effectiveness of marketing campaigns and accuracy of inventory management. Analytical tools are used for this purpose, which make it possible to monitor changes and, if necessary, make corrections.

6. Continuous improvement and adaptation. The system approach involves a continuous process of improving technologies and processes. Digital innovation is evolving rapidly, so a company must constantly review and update its infrastructure to remain competitive. New technologies such as automation using machine learning or blockchain to increase transparency in logistics chains may be involved for this.

Systemic approach advantages in the digital transformation of marketing and logistics strategies

#### 1. Ensuring consistency between departments

A systematic approach allows integrating the efforts of marketing and logistics departments, which contributes to more coordinated management. For example, alignment between marketing and logistics enables better demand forecasting, leading to inventory optimization and cost reduction.

#### 2. Comprehensive vision of risks and opportunities

A systematic approach makes it possible to identify risks and opportunities for all components of the organization at the same time. For example, the application of IoT in logistics provides transparency of the supply chain, which makes it possible to identify weak points and quickly respond to changes in demand.

#### 3. Increasing competitiveness

Thanks to the fact that the system approach allows you to see all the relationships and adapt the business structure to new market requirements, the company can respond to changes faster and remain competitive.

#### 4. Effective change management

A systems approach helps organizations manage change more effectively. The implementation of digital technologies affects various aspects of business, and a systematic approach allows you to predict these changes and adapt to them in advance.

A systematic approach is necessary for the successful implementation of digital technologies in marketing and logistics strategies. It helps to ensure the comprehensive integration of innovations, adjust the organization to adapt to a dynamic environment and improve the company's performance indicators, which makes it capable of achieving significant results in today's digital economy [2, 15].

One of the most significant digital technologies impacts on marketing is the deeper analysis possibility of consumer behavior. The use of big data allows companies to create more personalized marketing campaigns, increasing their effectiveness. Data collected from social networks, websites and other online resources provides an opportunity to better understand customer preferences, which in turn helps to develop more targeted strategies.

The introduction of artificial intelligence technologies allows you to automate part of marketing processes, such as processing customer requests, audience segmentation and even content creation. This allows you to reduce marketing costs, while maintaining high efficiency of interaction with customers. According to survey results, companies using AI in marketing are seeing increased customer loyalty and increased sales.

Digital innovations in logistics processes. Logistics is also undergoing significant changes thanks to the introduction of digital technologies. Automation of warehouses allows to reduce the number of errors in the processing of goods and increase the speed of order fulfillment. Delivery drones and automated vehicles provide the opportunity to significantly reduce delivery times, which has a positive impact on customer satisfaction. Blockchain technologies, in turn, allow for full transparency of supply chains, reducing fraud risks and ensuring product traceability at all stages.

Integrating marketing and logistics through digital tools. The modern market requires the integration of marketing and logistics processes to achieve maximum efficiency. The use of CRM systems that include supply chain management modules allows companies to use customer data to more accurately forecast demand. This helps to optimize stocks and reduce storage costs, which is a key factor in increasing the competitiveness of companies.

The results of the study show that companies that actively invest in digital technologies have significant competitive advantages. For example, they are able to

adapt more quickly to changes in the market, offering customers more personalized solutions. In addition, the reduction of operating costs due to the automation of processes allows them to invest in the development of new areas and product improvements.

Digital technologies have become a significant driver of change in the marketing and logistics strategies of companies. The use of big data, process automation, and the integration of information systems provide substantial advantages for businesses, allowing them to increase efficiency, reduce costs, and ensure better interaction with customers. However, digital transformation requires significant investments, as well as flexibility and readiness for companies to adapt to new conditions.

The main recommendations for businesses are the implementation of digital technologies based on the specific needs of the company, the development of staff to work with new tools, and continuous monitoring of the effectiveness of innovation implementation. This will not only help adapt to changes in the market but also create new opportunities for growth and development.

Thus, digital technologies not only change marketing and logistics strategies but also become the foundation for a new paradigm of business management in the modern economy.

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# **FINANCIAL SUSTAINABILITY OF THE DIGITAL ENTERPRISE UNDER THE CONDITIONS OF UNCERTAINTY**

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The issue of military actions and the negative impact of their consequences on the functioning of enterprises until 2022 was practically not investigated by Ukrainian scientists while studying the problems of ensuring the financial sustainability of the enterprise. The negative war influence on business is quite evident. The impact of war on the finances of enterprises depends on many factors, which, in addition to the geographical location of production, suppliers and buyers, the structure of assets and liabilities, are also affected by the sector to which the enterprise belongs. The main threats that affected the deterioration of the financial component consist of operational losses caused by a reduction in production and sales volumes, losses from exchange rate differences and devaluation of financial assets (primarily accounts receivable). We assume that a number of these factors are leveled for digital business due to the peculiarities of building business processes, organizational structure, and management model of such enterprises.

If we characterize a digital business, then it is an organization that fully integrates digital tools and technologies in all aspects of its activities to increase productivity, create a better customer experience, as well as increase the efficiency and effectiveness of business processes (Haissam Abdul Malak, 2023). Added value (value proposition) is created using digital technologies. Customers are digital based on services that are new to the market, and they are engaged through digital channels (either including or exclusively) (Benjamin Talin, 2021). A company that belongs to the digital business segment must also be present on the Internet, and its customers are ready to pay for a digital product or service (Y. Koleshnya et al., 2022). The authors (V. Prokhorova et al., 2020) also actively research the trends in the development of digital entrepreneurial activity and claim that it is digital business that will actively spread globally.

Digital business refers to the use of digital technology and digital processes to conduct business. It covers a wide range of activities from online sales and marketing to customer relationship management (CRM) and supply chain management. In many cases, digital business is the fastest, most efficient way to do business [8].

Digital transformation is a new concept, but the number of studies in this area is growing every year. The main approaches that have been formed assume that digital transformation involves changes that are made through the introduction of digital technologies in the enterprise, which create, distribute and use information as a driver of change (Table 1)

Table 1

Definition of “digital business transformation”

<b>The World Bank</b>	Integration of digital technology into all areas of a business or organization, fundamentally changing how they operate and deliver value to customers. This transformation involves a cultural change that requires organizations to continually challenge the status quo, experiment, and get comfortable with failure [21]
<b>OECD</b>	Digital transformation – the impact of digital technologies and data and their use on existing and new activities. The digital transformation creates opportunities for innovation in services, as digital technologies allow for reduced costs and greater fluidity in reaching and interacting with consumers and in tracking their behaviour. It also moves manufacturing towards mixed models for providing goods and services [22]
<b>National Bank of Ukraine</b>	Implementation of digital technologies to improve the system and customer service [23]
<b>J. Liu et al</b>	Digital transformation is an organizational transformation that integrates digital technologies and business processes [24]
<b>M. Fitzgerald et al</b>	Digital transformation is the use of new digital technologies, such as social media, mobile technology, analytics, or embedded devices, to deliver significant business improvements, including improved customer experience, streamlined operations, or new business models [25].
<b>B. Solis et al</b>	Digital transformation is the restructuring or new investment in technology and business models to engage digital customers more effectively at every touchpoint in the customer experience lifecycle. [26]

That is, at the current stage of research, we see that digital business is a separate direction of development and is not identical to the concept of digital transformation. But in any case, digital transformation is changing the business model of the enterprise (Fig. 1)..

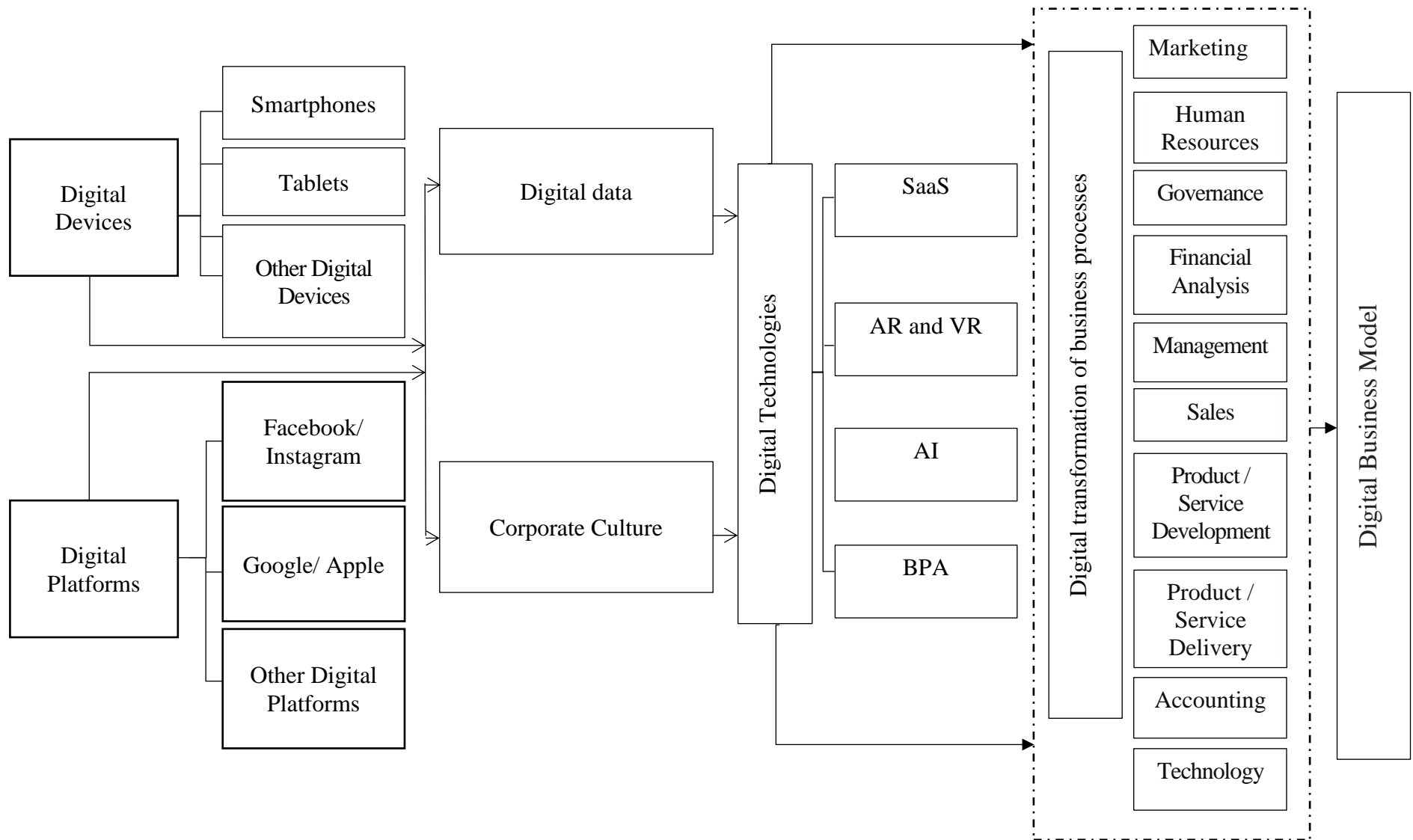


Fig. 1. Transformation of the business model into a digital business model

Source: based on literature review data



The unsolved part of the problems in the context of the systemic approach of digital business remains a clear understanding of common, as well as distinctive characteristics and approaches to managing its financial sustainability, the identification and justification of which allows to achieve a more consistent method in the field of their provision. That is why, the goal of our work is to substantiate the hypothesis that digital enterprises, have a higher level of financial sustainability in conditions of external uncertainty, unlike enterprises that use classic business models, which are actively digitizing individual business processes. The tasks of the research are to calculate the level of financial sustainability of enterprises working in the same sector, but use different business models, such as a digital business model.

In modern scientific literature, in most cases, the financial sustainability of an enterprise is considered as a component of its economic sustainability, assuming the significant role of finance in the functioning of any economic entity. In the scientific works of A. Gregory et al (2014) W. Gleissner and T. Guenther (2022), financial sustainability is an important component of the economic sustainability of an enterprise, which is based on a wide range of different management functions, efficiency and competitiveness of the enterprise's finances, which is reflected through a system of criteria and indicators of its condition, characterizing balanced finances, sufficient liquidity of assets and the availability of necessary cash reserves, financial stability, the degree of protection of financial interests at all levels of financial relations. J-J Lenssen et al (2014), O. Hereha (2021) are of the same opinion. They define financial sustainability as a component of economic sustainability, which is reflected through a system of criteria and dynamic indicators of its condition, which allows maintaining financial stability in the current and strategic perspective, as well as the degree of protection of financial interests at all levels of financial relations due to the effective use of the economic potential of the enterprise in order to resist external and internal threats - both real and potential. I Montiel and J. Delgado-Ceballos (2014) suggests that the financial sustainability of an enterprise is a dynamic feature of the enterprise's financial condition, which reflects its resistance to risk and crises, the ability for sustainable and balanced development and protection of its financial interests. S. Zabolotnyy and M. Wasilewski (2019) suggest that the financial sustainability in terms of risk and return, be evaluated within a synthetic framework that incorporates two key vectors: the value vector and the continuity vector. These vectors encompass variables such as profitability, market capitalization, productivity, operational efficiency, debt levels, liquidity, interest coverage, and retained earnings.

**Methodology.** The estimation of the current level of ensuring the financial sustainability of the enterprise is carried out in the following directions (Fig. 2). In general, according to researchers of financial sustainability (S. Zabolotnyy, M. Wasilewski M, 2019; Y. Diantimala, 2022; M.S. Henock, 2019), all indicators of

financial sustainability of an enterprise can be divided into the following groups: 1. solvency (liquidity) indicators; 2. financial stability indicators; 3. business activity indicators; 4. profitability indicators.

Solvency (liquidity) indicators	
	<ul style="list-style-type: none"> <li>- absolute liquidity ratio (<math>X_{11}</math>)</li> <li>- the quick liquidity ratio (<math>X_{12}</math>)</li> <li>- overall liquidity ratio (<math>X_{13}</math>)</li> </ul>
Financial stability indicators	
	<ul style="list-style-type: none"> <li>- ratio of financial independence (<math>X_{21}</math>)</li> <li>- ratio is a financial risk (<math>X_{22}</math>)</li> <li>- flexibility ratio of equity capital (<math>X_{23}</math>)</li> <li>- financial stability ratio (<math>X_{24}</math>)</li> </ul>
Business activity indicators	
	<ul style="list-style-type: none"> <li>- asset turnover ratio (<math>X_{31}</math>)</li> <li>- inventory turnover ratio (<math>X_{32}</math>)</li> <li>- average due date for inventory receivables (<math>X_{33}</math>)</li> <li>- average payables due date (<math>X_{34}</math>)</li> </ul>
Profitability indicators	
	<ul style="list-style-type: none"> <li>- return of sales (<math>X_{41}</math>)</li> <li>- return of assets (<math>X_{42}</math>)</li> <li>- return on equity (<math>X_{43}</math>)</li> </ul>

Fig. 2. Directions for estimation of the current level of ensuring  
the company's financial sustainability

*Source: based on literature review data*

Thus, a high level of financial sustainability implies a high level of financial stability of the enterprise. Financial stability is also seen as the state of the company's financial resources and the degree of their use, at which the company, freely maneuvering its funds, is able, through their effective use, to ensure a smooth production process and the sale of products, works, and services, as well as to incur expenses for its expansion and renewal. Financial stability is characterized by a stable excess of income over expenses, free maneuvering of funds and their effective use in

the process of current activities. Respectively, the content of financial stability is characterized by the effective formation and use of monetary resources necessary for effective economic activity.

The result of the scientific research is the use of the methodology for calculating the integral assessment of the level of financial sustainability of commercial enterprises operating in Ukraine, which is based on a system of indicators selected for the components of solvency, financial stability, business activity and profitability in order to confirm the hypothesis that digital enterprises, in conditions of external uncertainty have a higher level of financial sustainability in contrast to enterprises that use classic business models. An integral assessment of the level of financial sustainability will be carried out using the taxonomy method, which involves the calculation of a taxonomic indicator that reflects the degree of approximation of each individual object to a defined benchmark. When evaluating the deviations of the actual performance indicators of the enterprise from the reference ones, the following dependence is considered: the greater the positive distance between the reference and actual values of the indicators the more financially stable the object under study is. The interpretation of the obtained results is carried out using the Harrington Scale, which in appropriate modifications is used to assess indicators of a qualitative nature. The research methods used in the work are based on a symbiosis of objective and subjective techniques, which include the method of data normalization and methods of statistical processing of indicators. Study period: 2018–2022.

A comprehensive assessment of the financial sustainability of a business is based on the selection of a system of indicators for each of its components. The methodology includes the following stages (Fig. 3).

The proposed system of indicators including the level of current liquidity, financial stability, business activity and profitability is the most popular and informative when evaluating the company's financial statements, and the threshold values are generally accepted for private enterprises (Hembarska N., at all, 2021).

Public information of two enterprises was used to calculate a generalized comprehensive estimation of the level of financial sustainability of business entities: Metro Cash and Carry Ukraine LLC and Rozetka.UA LLC. Rozetka UA, for instance, has a digital business model, since the added value created by the company would not be possible without the use of digital technologies, and also, customer acquisition and distribution are carried out through digital channels, and the digital services provided by the company can be monetized.

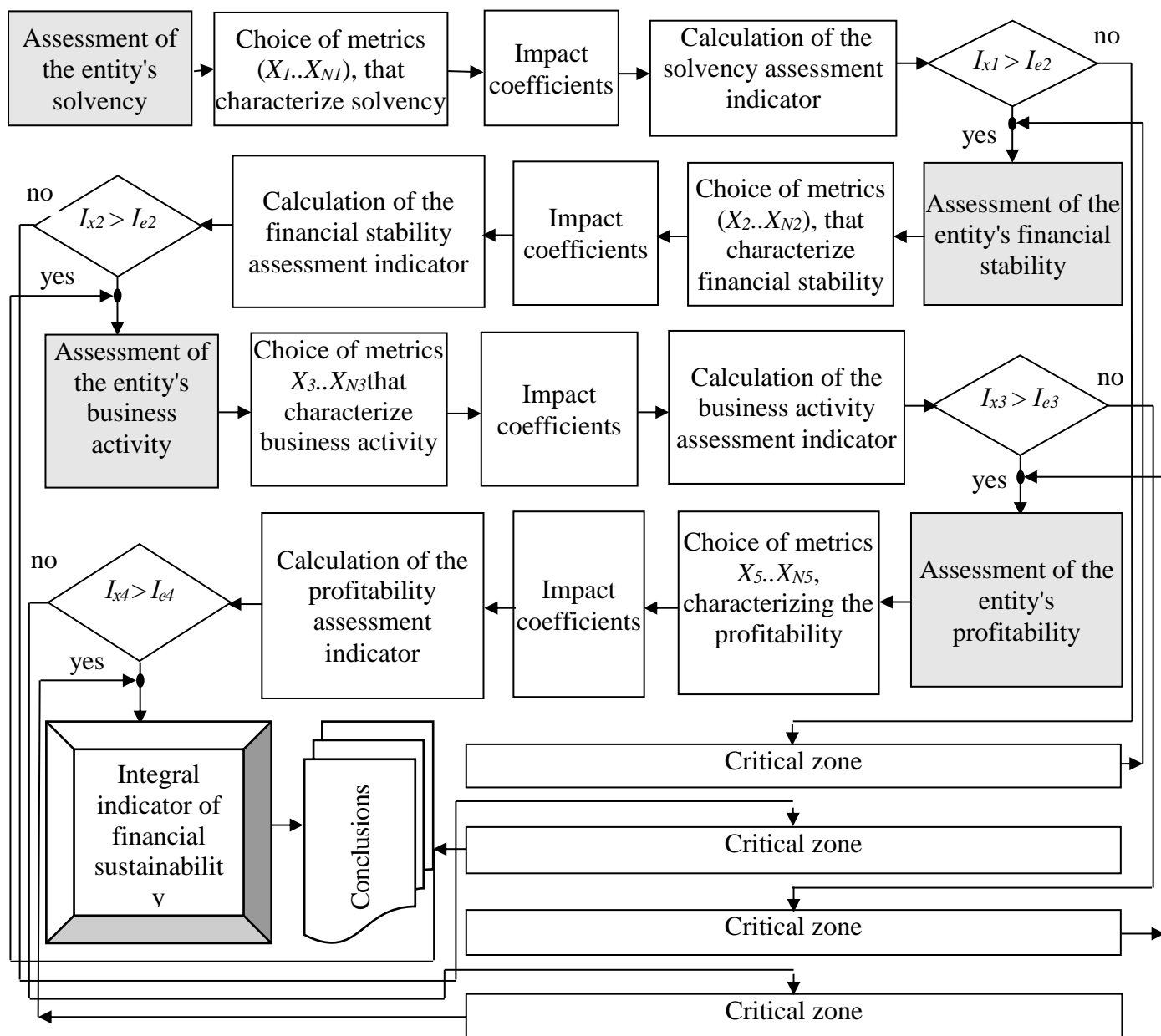


Fig. 3. The sequence of estimation of the level of financial sustainability

Source: based on literature review data

Values of indicators of financial sustainability of business entities were determined in the range from 0 to 1, and the lag of the indicator was at the level of 0.5. According to indicators of current liquidity, financial stability and business activity, there are clearly defined normative values in the economic literature [18].

The maximum value among the analyzed data over a five-year period for the analyzed economic entities was used for the profitability indicator. The calculation of the indicator of financial sustainability of business entities is presented in the table 2-3.

Table 2.

Financial sustainability indicators of Metro Cash and Carry Ukraine LLC in 2018-2022

Metrics	Size by year				
$I_{x1}$	0,48	0,47	0,43	0,41	0,41
$I_{x2}$	0,60	0,60	0,85	0,80	0,77
$I_{x3}$	0,76	0,76	0,67	0,75	0,53
$I_{x4}$	0,73	0,73	0,74	0,77	0,74

Note: Calculated by the author.

Table 3.

Financial sustainability indicators of Rozetka.UA LLC in 2018-2022

Metrics	Size by year				
$I_{x1}$	0,515	0,515	0,535	0,525	0,540
$I_{x2}$	0,970	0,960	0,930	0,950	0,910
$I_{x3}$	0,773	0,894	0,838	0,889	1,000
$I_{x4}$	0,751	0,752	0,753	0,752	0,754

Note: Calculated by the author.

We propose to interpret the obtained results based on the ranges of values obtained during the study, which can be determined by proportional segments in the range from [0; 1], or using the Harrington Scale (Harrington, Neil. (2005), which has a universal character and can be used in appropriate modifications to evaluate indicators of a qualitative nature. When adapting it to our study, we will obtain the following ranges of values (Table 4).

Integral estimations of each of the components of financial sustainability of reference enterprises are formed on the basis of the weighted sum of the relevant indicators and are presented in fig. 4. Thus, throughout the analyzed range, higher values of the level of financial sustainability are observed in the enterprise with a digital business model. This indicates its higher financial stability in conditions of uncertainty.

The results of estimating the level of financial sustainability of enterprises show that financial sustainability is in the zone of probable danger for both analyzed business entities in conditions of uncertainty. Although the level of the indicator of financial sustainability of an enterprise with a digital business model is higher than that of an enterprise that uses classical approaches. This fact confirms our previous hypothesis and does not contradict the research (Haissam Abdul Malak, 2023 and Revak I.O. and all, 2021) regarding the higher efficiency and effectiveness of business processes, especially under conditions of uncertainty.

Table 4.

### Scale of financial sustainability of business entities

Range of values, %	Characteristic values
100 – 80	Stability zone: the probability of loss of financial sustainability is insignificant
79 – 63	Moderate danger zone: the probability of loss of financial sustainability is low
62 – 37	Probable danger zone, the probability of loss of financial sustainability is medium
36 – 20	Danger zone: the probability of loss of financial sustainability is high
20 – 0	Critical zone: loss of financial sustainability

*Source: based on the Harrington Scale (Harrington, Neil. (2005))*

However, in addition to the calculation of financial indicators, it is necessary to consider other factors and the strength of their influence on the company's finances, which we could not assess in this study due to limited access to such information and its subjectivity from the point of view of evaluation. But we agree with the author (Goryacheva, K. 2006 and Yemelyanov, O. 2018), who considers it appropriate to evaluate the organizational structure; management staff; and management technologies.

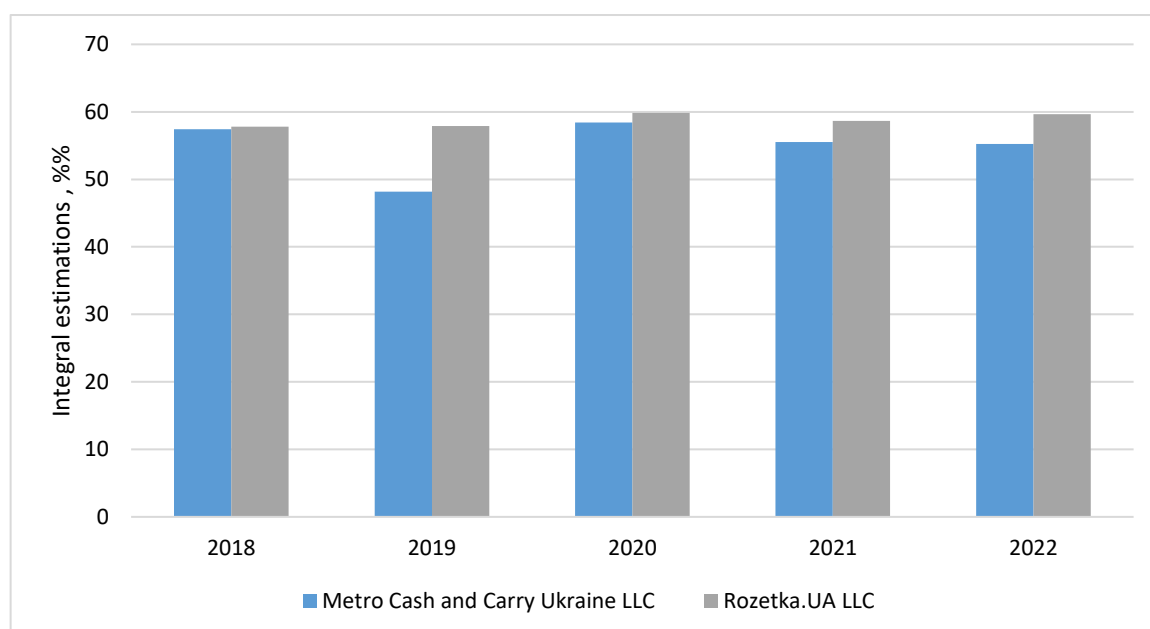


Fig. 4. Integral estimations of the financial sustainability of Metro Cash and Carry Ukraine LLC and Rozetka UA LLC in the analyzed range.

*Note: Calculated by the author.*

The work evaluated the integral indicator of financial sustainability for an enterprise with a digital business model and compared its results with an enterprise that carries out a similar type of business activity (retail) using a classic business model with elements of digital transformation. The conducted evaluation of the integral indicator of financial sustainability made it possible to confirm the hypothesis that in the conditions of external uncertainty, to which we attribute the pandemic and war, enterprises that use a digital business model have a higher level of financial sustainability in contrast to enterprises that use classic business models.

The authors on the basis of the literature review identified four components that were used to assess financial sustainability and within which indicators were selected for assessment: solvency (liquidity); financial stability; business activity; profitability. An integral estimation of each of the components of financial sustainability of the research objects, formed on the basis of a weighted sum of relevant indicators, showed that financial sustainability is in the zone of probable danger. Although the level of the indicator of financial sustainability of an enterprise with a digital business model is higher than that of an enterprise that uses classical approaches to building a business.

Despite the large number of studies in the field of financial sustainability and its assessment by business entities, certain theoretical and practical issues related to this problem require deeper further study. The priority lies in the sphere of developing strategies to increase the level of financial sustainability in view of the war and in conditions of uncertainty. That is why the confirmation of the hypothesis set as the goal of the work substantiates the expediency of the digital transformation of business, in particular trade, as one of the strategies or elements of the strategy of increasing the level of their financial sustainability.

The issue of choosing indicators that would allow us to assess the level of financial sustainability may be debatable, however, in our opinion, it is the very indicators, reflected in the financial statements, that are one of the main results of the work of the enterprise and its management.

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# RESEARCH ON MARKETING COMMUNICATIONS IN THE IT MARKET

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The information technology (IT) market plays a pivotal role in the global economy, continuously shaping industries and driving innovation. According to Gartner, global IT spending is projected to grow by 8 percent in 2024, reaching \$5.1 trillion. The largest segments include IT services at \$1.55 trillion, communication services at nearly \$1.5 trillion, and software at approximately \$1 trillion. The fastest growth is expected in software and IT services, driven by spending on cloud computing and rising cloud vendor prices [1]. These trends highlight the growing importance of effective marketing communications in this dynamic and evolving industry.

Despite the well-documented role of marketing communications in traditional sectors, the IT market remains underexplored, especially given its rapid innovation and dependence on outsourcing and digital solutions. This gap necessitates a focused study of how marketing communication tools are utilized within the IT sector to address its specific needs.

The aim of this study is to provide IT companies with practical insights into the selection and optimization of communication tools to enhance customer engagement and improve marketing efficiency. To achieve this, the following objectives are set: to identify the key features of communication channels used by different types of IT companies, including outsourcing and product-based firms, to analyze differences in the application of communication tools between outsourcing and product-oriented IT companies, to classify and evaluate the effectiveness of marketing communication tools in engaging target audiences.

The study's results are expected to contribute to a deeper understanding of marketing communications within the IT sector and provide actionable strategies for companies to strengthen their market positions.

The theoretical foundations of information technologies in management and marketing focus on how digital technologies transform business operations, decision-making, and value creation. Leavitt and Whisler [2] were among the first to highlight the role of IT in improving management practices and efficiency. Bijker and Pinch [3] examined how societal and cultural factors influence the adoption and development of technology. Davenport and Short [4] expanded on these ideas by showing how IT can streamline business processes and enhance competitiveness. Brynjolfsson and McAfee [5] further explored the economic impact of digital technologies, focusing on their role in driving innovation and productivity.

The integration of IT into marketing highlights its ability to improve processes and deliver personalized customer experiences. Brady, Saren, and Tzokas [6] studied how IT tools help businesses adapt to changing markets and improve marketing practices. Abid, Harrigan, and Roy [7] focused on the use of online content to build lasting customer relationships. Diaz, Esteban, Carranza Vallejo, and Martín-Consuegra Navarro [8] explored how modern IT applications, such as AI and machine learning, are used to refine marketing strategies and better meet customer needs.

Outsourcing of information systems focuses on delegating technological process management to external partners to reduce expenses and improve operational flexibility. This area examines the risks, benefits, and strategies of involving third-party providers in IT-related tasks. Early studies on IT outsourcing by Applegate and Montealegre focused on large-scale domestic outsourcing [9]. Later, Loh and Venkatraman explored the reasons companies choose to outsource [10], while Willcocks and Fitzgerald studied how outsourcing affects company performance and operations [11]. Dibbern, Goles, Hirschheim, and Jayatilaka noted that by the 2000s, interest in outsourcing had significantly increased, with more than 79 studies published between 1994 and 2000 [12].

It is also important to understand that marketing communications should be considered as part of an integrated system. Their essence and components are particularly detailed in the works of Baluk N.R., Basiy N.F., Skybinsky [13] S.V., Kerr G., Schultz D., Patti C., & Kim I [14]. The authors view integrated marketing communications as either a new concept or a fresh perspective on traditional marketing tools.

The study applied a systematic approach to analyzing marketing communications in the IT market. The research methodology included a comprehensive review of scientific literature to identify effective communication tools and their role in marketing strategies. Comparative analysis was conducted to distinguish the key differences in the use of communication channels by outsourcing and product-based IT companies. Additionally, a classification of marketing communication tools was developed to assess their effectiveness in engaging target audiences. The systematic approach ensured a holistic understanding of the structure and dynamics of marketing communications within the IT sector.

Information technology (IT) is viewed through diverse perspectives or aspects. Individual definitions and understandings of IT often vary, influenced by the person's knowledge level, the intended purpose of the definition, and their subjective outlook. Since Leavitt, H. J., and Whisler, T. L. [2] coined the term, defining IT has posed challenges, especially in marketing research [6].

These perspectives include:

1. Bijker, W.E. and Pinch, T. [3] examined IT from a sociocultural

perspective, focusing on how societal and cultural factors shape the development and perception of technology.

2. Brynjolfsson, E. and McAfee, A. [5] approached IT as a tool for information provision, underscoring its impact on improving management efficiency and facilitating decision-making in corporate and governmental contexts.
3. Davenport, T. and Short, J. [4] viewed IT through the lens of business processes and systems, stressing its role in automating and streamlining operations to provide companies with competitive advantages.

In marketing, IT is interpreted in diverse ways, with a prevailing focus on internet technologies rather than a comprehensive view of IT as a whole. According to Brady, M., Saren, M., and Tzokas, N., IT is utilized in marketing as a collection of individual applications (internet, databases, PowerPoint), a marketing channel, a communication and promotional medium, an interactive platform, a marketing technique, and a tool for fostering customer relationships [6].

Analyzing scholarly research on IT in marketing, Diaz, E., Esteban, Á., Carranza Vallejo, R., and Martín-Consuegra Navarro, D. explored IT as a communication and promotional tool, illustrating its application in attracting audiences through digital technologies [8]. Meanwhile, Abid, A., Harrigan, P., and Roy, S. examined IT as a relationship marketing tool, emphasizing its role in creating long-term customer connections through online content [7].

A clear definition of "information technology" is essential to the scope of this study to ensure precision and consistency in the subsequent analysis. A precise definition minimizes ambiguity and provides a solid framework for examining marketing communications within the IT market.

IT (information technology) refers to a business sector specializing in the production of software and other information technologies. This sector encompasses the creation, development, and implementation of various programs, systems, and technologies aimed at processing, storing, transmitting, and analyzing information. It includes software development, hardware creation, the design and maintenance of information communication networks, as well as the use of internet technologies and other communication tools to address business challenges and support operational processes across various economic sectors.

To gain a complete understanding and carry out a thorough analysis of the IT sector, it is essential not only to define the concept of "Information Technology" but also to determine what constitutes the "IT market." This is crucial because defining the market helps create a clear picture of the economic interactions within this sector, including its key segments, operating principles, and the factors that influence its development.

This theoretical basis provides the foundation for further research into managing marketing communications in the specific context of the IT market.

The IT market can be defined as a sphere of economic relations that encompasses the activities of companies engaged in developing, implementing, and maintaining software, information technologies and systems, as well as hardware for data processing, storage, transmission, and analysis.

Before conducting a comparative analysis of marketing communication channels in the IT market, it is necessary to identify the main types of companies that shape this market. Distinguishing between product-based and outsourcing IT companies is a justified approach, as they represent two key business models in the IT industry.

This approach allows the IT market to be considered in the context of both innovative development and the provision of specialized services, facilitating a comprehensive analysis of various communication channels. The differences between product-based and outsourcing companies create a complementary structure that ensures the market's adaptability and resilience to rapid changes and globalization.

Outsourcing IT companies specialize in delivering IT services, such as software development, infrastructure management, cybersecurity, and testing, to other businesses on a contractual basis. A key characteristic of these companies is their ability to manage full or partial IT operations for their clients, allowing the latter to concentrate on their primary business objectives.

For example, Cheon, M., Grover, V., and Teng, J.T.C. define IT outsourcing as the process of engaging IT services from external sources for organizations that require them, with the aim of executing software development and related activities. Outsourcing in business can generally be defined as a decision by an organization to transfer part or all of its IT functions to an external service provider, enabling the organization to achieve its goals or deliver comprehensive solutions that enhance its competitiveness in the future [15].

Similarly, Dibbern, Goles, Hirschheim, and Jayatilaka, in their work "Information Systems Outsourcing: A Survey and Analysis of the Literature," characterize outsourcing IT companies as entities that execute specific tasks or functions for other organizations, transferring their expertise and resources to enhance client performance and operational efficiency [16].

Product-based IT companies specialize in creating, deploying, and supporting their own technological offerings, such as software, hardware, or platforms, which they sell directly to end consumers or businesses. These companies allocate significant resources to innovation and manage their products throughout their entire lifecycle — from initial concept to release and ongoing maintenance.

According to Cusumano in his book "The Business of Software: What Every Manager, Programmer, and Entrepreneur Must Know to Thrive and Survive in Good

Times and Bad," product-based IT companies are defined as entities that develop software or hardware solutions for direct market sales. They focus on continually improving and expanding product functionality to maintain a competitive advantage [17].

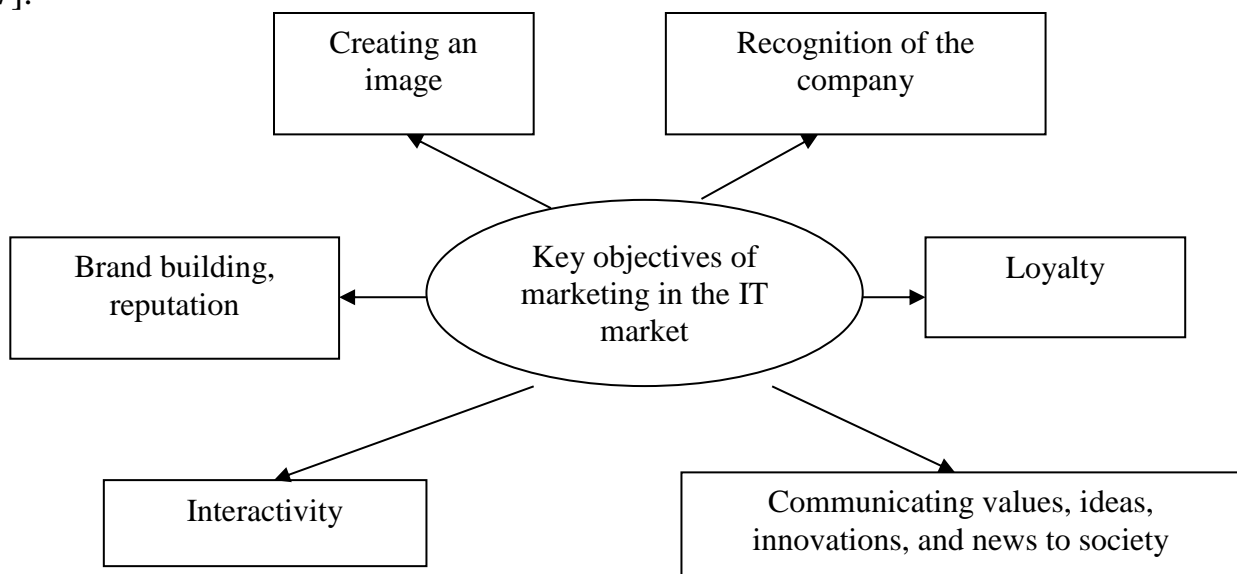


Fig. 1. Key Objectives of Marketing in the IT Market

*\*Systematized by the author*

Considering the unique features and tasks of marketing within the IT market (Fig. 1), it is crucial to choose communication channels and tools that align with strategic objectives. The marketing communication mix comprises several key elements, each targeting specific aspects of audience engagement — from awareness-building to fostering customer loyalty and creating long-term relationships.

Studying the elements of the marketing communication mix provides insights into how marketing strategies can be effectively implemented in the IT domain.

The main tools of marketing communications are advertising, public relations, sales promotion, personal selling, and direct marketing [13].

To highlight the pivotal role of advertising in the marketing mix, it is essential to recognize its function as a unifying communication tool that brings together various components of a marketing strategy. Advertising plays a dual role: it initiates the audience's first interaction with the brand and establishes a foundation for further engagement through complementary channels such as sales promotion and direct marketing. Kotler and Keller [18] emphasize that advertising, through its scale and influence, creates a brand image that serves as the basis for all subsequent communication efforts.

A comparative table featuring key definitions of "advertising" can further support the argument about its central role in the marketing communication mix. This table showcases different perspectives and interpretations of advertising from academic sources and authoritative organizations, providing a clear overview of its strategic

importance.

By comparing these definitions, one can better understand advertising's multifaceted role as a communication tool. This comparative approach also highlights its significance in unifying the elements of the marketing communication mix, ensuring coherence and alignment while contributing to the development of an effective communication strategy (Table 1).

Table1

Definitions of Advertising in the Context of Academic Research and Legal Regulations

Author	Definition
American Marketing Association	Advertising is the placement of announcements and messages in time or space by business firms, nonprofit organizations, government agencies, and individuals who seek to inform and/or persuade members of a particular target market or audience regarding their products, services, organizations or ideas. Here you will find the American Marketing Association's archive of articles regarding advertising[19]
Wells, W., Burnett, J., Moriarty, S.	Advertising is a paid, non-personal communication conducted by an identified sponsor who uses media, including interactive platforms, to persuade or influence an audience in a specific way [20].
Romat E.	Advertising is a type of social and media-based commercial communication created and paid for by a specific advertiser. Its purpose is to promote advertising objects (goods, services, images, ideas, individuals, companies, etc.) to potential buyers [21].
Popova N. V., Kataiev A. V., Bazalieva L. V., Kononov O. I., Mukha T. A.	Advertising is a dynamic sphere of human activity that is rapidly evolving. It is one of the most important components of marketing activity, and its role is determined by the enterprise's marketing strategy [13].
Law of Ukraine "On Advertising"	Advertising is information about a person, idea, and/or product disseminated for monetary or other compensation, or for self-promotion, in any form and manner. It is intended to create or maintain consumer awareness and interest in the person, idea, and/or product through direct (direct advertising, telemarketing) or indirect (sponsorship, product placement) means.
Practices in the USA and Other Developed Countries	The term "advertising" refers to advertising in mass media (press, radio, television, billboards) and does not include sales promotion activities, prestige events, or direct advertising [22].
Domestic Practice	Advertising includes exhibitions, business seminars, packaging, printed materials, distribution of souvenirs, and other tools to stimulate trade activity [22].

*Source: systematized by the author*

The main objective of advertising is to drive (increase) product demand, expand

(retain) market share, and enhance organizational performance. Advertising plays a crucial role in raising product awareness by informing consumers and other audiences about the company, product quality, and new offerings. It influences consumer behavior by encouraging purchases, serves as a reminder of the company's products over time, and builds loyalty toward the product or brand.

Advertising goals may involve creating a favorable image, strengthening purchase motivation, launching new products, entering untapped markets, expanding consumers' perceptions of product goals and uses, establishing positioning, and more [12].

Having highlighted the pivotal role of advertising within the marketing communication mix, it is equally important to focus on the relevance of other key communication tools, particularly in the specific context of the IT market. Communication channels and methods can differ in their impact and importance when addressing a target audience in a technologically driven environment.

As such, it is vital to examine how core marketing communication tools are tailored to the IT sector's unique requirements and determine which are most effective for crafting a successful communication strategy within this domain (Table 2).

Table 2

Relevance of Key Tools in the Marketing Communication Mix for General and IT Markets

Components of the Marketing Communications Mix	Relevant to the General Market	Relevant to the IT Market
Advertising	Advertising through media (television, print publications), digital ads, outdoor advertising (billboards)	Digital advertising, contextual advertising, banner ads, video ads, and social media advertising
Personal Selling	Sales through sales representatives, presentations, participation in trade shows	Personalized online presentations, product demonstrations via webinars and live streams
Sales Promotion	Discounts, coupons, promotions, contests	Free trial periods for software, discounts on service packages or subscriptions
Publicity and Public Relations	Press releases, events with media representatives, participation in trade shows and events	Publications in technical journals, partnerships with tech blogs, and building an online reputation
Direct Marketing	Direct mail campaigns, telemarketing calls	Email campaigns, personalized recommendations based on behavioral data, chatbots, and interactive messages

*\*Systematized by the author based on [23-30]*

We will delve deeper into the elements of the marketing communication mix and



explore how they are implemented in the IT market, focusing on their application by different types of IT companies — product-based and outsourcing. Our analysis begins with advertising, a cornerstone of communication strategies for both types of companies.

**Digital Advertising.** Outsourcing companies use digital advertising to boost brand recognition, attract global clients, and expand the geographical reach of their projects. The emphasis is placed on the corporate image and showcasing expertise through case studies. Conversely, product-based companies focus their digital advertising efforts on promoting specific products, targeting end consumers by highlighting the functionality, utility, and unique features that set their products apart from competitors [23].

**Contextual Advertising.** For outsourcing companies, contextual advertising targets potential clients seeking IT outsourcing solutions, focusing on queries related to software development and consulting services. In the case of product-based companies, contextual advertising aims to engage users searching for specific software or functionalities, with a strong focus on the product's benefits that meet the target audience's demands.

**Banner Advertising.** Outsourcing companies focus their banner placements on B2B platforms, professional forums, and business-oriented media, where the content highlights business cases and measurable outcomes. Product-based companies, by contrast, target broader platforms with banners that leverage striking visuals to emphasize product advantages or offer special deals to attract users.

**Video Advertising.** For outsourcing companies, video ads are a tool to highlight successful projects, illustrate development workflows, and showcase service capabilities. These ads target business clients and underline the value of long-term partnerships. Product-based companies use video ads to demonstrate product functionalities and unique features to end users, often incorporating feature demonstrations and customer reviews to capture interest [24].

**Social Media Advertising.** Outsourcing companies leverage social media platforms like LinkedIn to cultivate a professional reputation, sharing corporate updates, industry insights, and case studies to engage potential clients. In contrast, product-based companies aim at direct sales and brand loyalty among end users, creating interactive and feedback-driven content to actively engage their audience.

Advertising strategies differ significantly between outsourcing and product-based IT companies. For outsourcing firms, the focus is on corporate branding, demonstrating expertise through case studies, and appealing to international clients. Their advertisements underline the company's proficiency in delivering specialized services and fostering lasting partnerships. Product-based companies, however, prioritize promoting individual products, highlighting functionality, advantages, and unique features tailored to end users. This makes their advertising more suitable for engaging

broader audiences [25].

Personal selling is carried out through direct client interaction via online presentations, webinars, and live broadcasts.

Personal Online Presentations serve as a vital tool for outsourcing IT companies, enabling direct interaction with potential clients. These presentations allow representatives to detail their services, showcase case studies, and explain their work methodologies. The focus is on demonstrating expertise, addressing client inquiries comprehensively, and building long-term relationships. This strategy highlights the company's ability to deliver tailored solutions and adopt a client-centric approach to projects. For product-based IT companies, personal online presentations provide a platform to delve into specific product features, thoroughly explaining their functionalities and demonstrating how they address user needs. These presentations are often supplemented with practical usage examples and technical demos, helping clients appreciate the product's unique advantages.

Webinar-Based Product Demonstrations are equally effective for outsourcing and product-based companies. Outsourcing firms use webinars to share expertise, highlight industry trends, and present case studies from completed projects. This enhances their reputation as knowledgeable partners with a strong grasp of market demands. Product-based companies use webinars to introduce new features, train users, and discuss updates. This approach actively engages the audience in product exploration and increases the likelihood of turning potential interest into actual purchases.

Live Streams offer a dynamic way for both outsourcing and product-based companies to engage with their audience in real time. For outsourcing companies, live streams serve as a platform for hosting interactive Q&A sessions, discussing technological solutions, and connecting with potential clients through professional interactions. Product-based companies leverage live streams to showcase their products in practical use cases or announce updates, providing users with timely information directly from developers while allowing for immediate feedback and questions.

To conclude, personal selling fulfills distinct roles for outsourcing and product-based IT companies. Outsourcing firms utilize personal presentations, webinars, and live streams to highlight their expertise, establish trust, and develop long-term client relationships, primarily targeting business-oriented audiences. For product-based companies, these tools are instrumental in demonstrating product functionalities, enhancing user training, and strengthening audience engagement, which drives sales growth and expands the customer base.

Outsourcing companies leverage sales promotion to draw in new clients and strengthen existing partnerships. Given their focus on long-term projects and client relationships, such promotions often include discounts for extended contracts,

exclusive terms for bulk orders, or reduced rates for the initial months of cooperation. This strategy aims to lower entry barriers for prospective clients while fostering enduring partnerships by creating attractive value propositions.

Conversely, product-based companies prioritize sales promotion tools targeting a broader audience of end users. These initiatives often include free trials, discounts for first-time buyers, or special deals during new product or feature launches. Free trials and promotional campaigns allow potential customers to experience the product's value without upfront costs, driving user growth and engaging new audience segments. This tactic is particularly impactful for digital products, where sales promotions can yield immediate results in terms of downloads or subscriptions.

As a result, outsourcing companies focus on highlighting long-term client benefits, whereas product-based companies aim to provide consumers with an accessible and quick way to experience the product and make informed purchase decisions.

Publicity and Public Relations are essential tools for both outsourcing and product-based companies, although their goals differ. Outsourcing companies leverage publicity and PR to demonstrate their expertise in niche technological domains, attracting new clients and reinforcing their credibility in the market. Articles focusing on successful projects, industry research, and innovative solutions enhance their reputation as dependable partners for large-scale initiatives. Product-based companies, in contrast, prioritize publications that emphasize new product features or updates, as well as customer success stories. These efforts help increase product interest and strengthen brand recognition among the target audience [26].

Collaborations with technology blogs are another significant aspect of publicity for IT companies. Outsourcing firms collaborate with blogs to showcase their services, methodologies, and industry-leading practices, capturing the attention of businesses seeking outsourcing services. These partnerships broaden the company's reach and visibility among potential clients and a wider readership. Product-based companies, however, use blog partnerships to promote specific products, often engaging popular reviewers or industry experts. This approach enhances credibility and fosters greater trust in the product [27].

Developing an online reputation is vital for both outsourcing and product-based companies, as a strong online presence can greatly impact customer decision-making. Outsourcing companies prioritize building their reputation through client testimonials, case studies, endorsements, and high ratings on professional platforms such as Clutch and Upwork. This approach fosters trust and portrays the company as reliable and professional.

Product-based companies, on the other hand, emphasize user reviews, social media discussions, and forum engagement. This strategy helps them cultivate a loyal

customer base that actively advocates for their product.

In conclusion, outsourcing companies leverage publicity and public relations to build a trustworthy image and enhance credibility among business clients, whereas product-based companies focus on promoting their products and engaging end users.

Direct Marketing is a vital component of marketing communication for IT companies, as it enables them to establish a direct connection with clients by delivering personalized messages. This tool involves various methods of interaction.

Email marketing is one of the most widely used direct marketing tools for IT companies. For outsourcing companies, email campaigns are used to share updates about new services, company milestones, and industry insights. These campaigns help maintain relationships with potential clients and ensure consistent visibility. Common formats include analytical reports or case studies that highlight successful projects the company has delivered. For product-based companies, email campaigns are tailored to end consumers and often feature updates about the product, announcements of new features, and special promotional offers. They may also include guides, educational resources, or links to webinars designed to familiarize users with the product [28].

Behavior-based personalized recommendations serve as a key instrument for product-based companies. Through analyzing user activity on their platforms, these companies can provide tailored suggestions for additional features or new products. This strategy enhances the customer experience, boosts engagement, and raises the likelihood of conversions. While outsourcing companies utilize behavioral recommendations less extensively, they may leverage personalization to target clients with specific requirements, proposing services that align closely with their business model or sector [29].

Outsourcing companies deploy chatbots to streamline initial interactions with clients, handle common queries related to services and pricing, and gather contact details from prospective clients. This improves response speed and enhances operational efficiency in customer service. Product-based companies, in contrast, use chatbots extensively to provide real-time user support, assisting customers with product usage and collecting feedback after engagements. Interactive messaging allows them to promptly answer user questions and resolve issues directly through their applications or websites [30].

The use of direct marketing varies greatly between outsourcing and product-based IT companies due to differences in target audiences and business models. For outsourcing companies, direct marketing is a tool for sustaining ongoing communication with existing and potential clients. It emphasizes loyalty-building by informing clients about new services and showcasing successful projects. In contrast, product-based companies focus on personalization and interactive communication with end users. They increase user engagement by offering relevant content and

recommendations tailored to user behavior. This strategy enhances customer satisfaction and promotes repeat interactions with the company.

Following the in-depth analysis of the marketing communication mix components, we have developed a detailed understanding of the primary tools that enable effective audience interaction. The logical next step from this analysis is to organize and categorize the key communication channels that are most pertinent and impactful for the IT market (Table 3).

Table 3

Systematization of Marketing Communication Channels for the IT Market

General Channel	Channel Components	Example of Implementation
Digital Advertising	Contextual Advertising, Banner Ads, Video Advertising, Social Media Advertising	Advertising Banners in Search Engines, Video Ads on YouTube, Targeted Ads on Facebook
Personal Presentations	Personal Online Presentations, Webinars, Live Streams	Presentation of a New Software Product for B2B Clients, Demonstration Webinar
Sales Promotion	Free Trial Periods, Discounts on Services or Subscriptions	Free One-Month Trial of a SaaS Product, Discounts on Annual Subscriptions
Publicity and Public Relations	Publications in Technical Journals, Partnerships with Tech Blogs, Building Online Reputation	Articles in Technology Journals, Partner Reviews on Popular Blogs
Direct Marketing	Email Campaigns, Personalized Recommendations, Chatbots, Interactive Messages	Personalized Email Campaigns, Automated Chatbots for Customer Support
Social Media and Digital Platforms	Social Media, Video and Blog Platforms, YouTube, Live Streaming Platforms	Live Stream on YouTube, Posts on LinkedIn, Educational Content on Platforms
Affiliate and Partner Marketing	Collaboration with Brands and Influencers to Promote the Product	Affiliate Links, Reviews by Tech Bloggers
Content Marketing	Creation of Informational Content: Articles, Blogs, Infographics, Videos, Webinars	Blog on a Website with Helpful Materials, Videos on YouTube
Interactive Communications	Real-Time Interaction with Clients via Chatbots and Interactive Messages	Chatbots for Customer Support on the Website, Interactive Services for Engagement

*\*Systematized by the author*

Outsourcing and product-based IT companies, given their specific characteristics, utilize communication channels differently, tailoring them to their business models and target audiences.

The study analyzed the core components of the marketing communication mix in the IT market, revealing that outsourcing and product-based IT companies adopt distinct approaches to communication, adapting their strategies to their business models and audience needs. Outsourcing companies prioritize building a professional corporate image and attracting clients through case studies and strategic partnerships. In contrast, product-based companies focus on engaging end users by leveraging digital advertising, social media platforms, and content marketing initiatives. A holistic approach to marketing communications has demonstrated its effectiveness in achieving key objectives such as brand strengthening, client acquisition, and customer loyalty enhancement. The application of diverse communication channels enables IT companies to maintain successful audience engagement and adapt swiftly to market dynamics. The findings of this study can serve as a valuable foundation for developing marketing strategies tailored to specific segments of the IT market, as well as for further research and evaluation of individual communication channels for the IT market.

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# **TRANSFORMATION OF THE SUPPLY CHAIN MANAGEMENT SYSTEM: THEORETICAL AND PRACTICAL ASPECTS OF THE CASE STUDY**

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Logistics activities are gradually strengthening their position within the enterprise management system because logistics management, tools, and methods are utilised across various business sectors. The logistics department at a business entity has become a necessary element of the organisational structure of an effective enterprise. The field of competence for specialists working in logistics requires knowledge in managing various areas of activity – from information and personnel to finance and marketing. Accordingly, logistics is divided into procurement, warehousing and inventory, transport, production, marketing, and supply chain logistics (supply chain management).

As a result, enterprises that incorporate logistics into their activities should create an integrated supply chain management system that provides control over the "supplier-consumer" chain. This will directly impact the optimisation of goods movement, information flow, and finances, thereby achieving cost efficiency with the resources available to the enterprise. Simultaneously, such technology requires the enterprise to be appropriately informatized and to enhance the level of relationship development between organisations, particularly in systems and processes of the supply chain.

The practical implementation of this task depends on many factors: the size and capacity of the enterprise, the specifics of the industry, the level of development of marketing information systems, and existing problems and needs. Consequently, logistics is continuously developing and integrating modern management solutions into various supply chains, and studying international experience in this context is crucial

for the development of logistics in Ukraine. Therefore, for domestic enterprises, the supply chain management system remains a promising area of research. Primarily, this involves organising a unified information space within the enterprise, automating relevant processes, and accumulating and analysing the received information.

A significant number of scientific works are devoted to conceptual principles and scientific-methodical approaches to increasing the efficiency of management of logistics activities of enterprises of various sectoral orientations. As the analysis of scientific sources on logistics shows, prominent foreign (A. K. C. Beresford, S. J. Pettit, W. Whittaker (2005) [1]; P. Blaik (2010) [2]; D. J. Bowersox (2007) [3]; H. Dźwigoł (2019) [4]; A. Gunasekaran (2005) [5]; L. Huemer (2006) [6]; Kotler P., Keller K.L. (2014) [7]; D. M. Lambert, J. R. Stock, and L. M. Ellram (1998) [8]; J.-J. Lambin (2012) [9]; P. R. Murphy Jr., D. F. Wood (2014)) [10] and Ukrainian scientists (B. V. Burkynskyi, V. M. Lysyuk (2018) [11]; M. Hrygorak, V. Kulyk, L. Kostyuchenko (2013) [12]; O. Garafonova (2015) [13]; Ye. V. Krykavskyi, N. M. Vasylytsiv, V. A. Falovich (2015) [14]; V. Rudyka (2012)) [15] pay special attention to the justification and development of the logistic model; concepts, optimization models and supply chain management strategies; methodological approaches to determining the optimal volume of the delivery batch; measures to improve the level of customer service and logistics service.

D. J. Bowersox (2007) and some other scientists and experts in the field of logistics are of the opinion that the concepts of logistics and supply chain management are synonymous, identical in content [3].

O. V. Horbenko (2012), considering the terminological apparatus of logistics, notes that the concepts of "logistics" and "supply chain management" are also often equated in domestic literature, since both of them are to some extent related to the process of transformation of material resources and related processes [16, p. 423]. In this interpretation, logistics is given a very broad meaning – more for the management of flows of material resources. However, logistics is only one part of supply chain management. The researcher considers the flow of material resources as an object of logistics, and the management of supply chains – financial, informational, etc.

The National Physical Distribution Management Council (USA) defined logistics as “a broad range of activities related to the efficient movement of finished products from the end of the production line to the consumer, in some cases including the movement of raw materials to the source of supply to the beginning of the production line. Such activities include transportation, warehousing, processing of materials, protective packaging, inventory control, selection of production and warehouse locations, orders for production, demand forecasting, marketing and customer service”; The American Society of Logistics Engineers suggested that logistics should be understood as "the art and science of management, engineering and technological

activities that involve the planning, supply and use of means of movement for the implementation of planned operations in order to achieve a set goal".

The range of problems related to logistics is large. It includes aspects characteristic of various stages of commodity flow management. This determines the time and place of inclusion in the movement of goods of various types of logistics. The goals of the respective stages determine which area of logistics they belong to.

The literature on the problems of modern logistics shows different approaches to defining the essence of logistics. This is evidence that logistics has not yet fully become an educational, let alone a scientific discipline. To become such, it must possess a clear and consistent system of theoretical, methodological and practical knowledge.

The study follows the process proposed by Aria and Cuccurullo (2017), which includes bibliometric analysis, systematic literature review (SLR) [17, p. 969]. This methodology for the purposes of this study is supplemented by the case study method.

The process begins with the selection of data for research, including keywords and database selection. At the second stage, data collection takes place, and at the third stage, SLR and bibliometric analysis are carried out. After the systematization of the main concepts and the theoretical background, at the last stage of the research, the study of a specific example is carried out by the master of the case study.

For the bibliometric analysis, data were obtained from the Web of Science (WoS) and Scopus databases, which are leading sources of bibliometric data (J. Baas et al., 2020 [18, p. 380]; O. Ellegaard and J. A. Wallin, 2015 [19, p. 1823]). The study examines research articles on supply chain management and digitalization of logistics in different countries. All articles are from peer-reviewed journals covering a period of more than 20 years, from 2000 to 2024.

The research papers were classified based on the study period, sample data, sample country, methodology, research design and findings. The criteria for inclusion in the study were as follows:

1. Focus on peer-reviewed journals, excluding textbooks, dissertations, and working papers.
2. Inclusion of mostly empirical studies with some key qualitative studies.
3. Practical experience of international logistics providers using open data sources.

The SLR included three steps for selecting data sources and articles. Initially, databases such as ABI/INFORM, EBSCO, Elsevier's Science Direct, and Web of Science were searched using keywords such as "logistics," "logistics system," "environmental supply chain management," and "digital logistics solutions." The second step limited the research to the period from 2000 to 2024, focusing on authoritative journals in the fields of logistics, management, and marketing. The study also conducted a bibliometric literature review to confirm the SLR results.

The practical experience of international logistics providers using open data sources was studied by the case study method. Using the case study method involves a detailed study of a specific case or phenomenon in order to gain a deep understanding of its essence and context. At the first stage, a specific case or phenomenon to be investigated is selected. In this study, the main approaches to the management of the logistics support of the enterprise are studied on the basis of the projects of the enterprise "Witron Logistik + Informatik GmbH", in particular the project of transformation of the system of logistics support of economic activity for the E. Leclerc corporation, which was recognized as the best European logistics project of 2022. The method is based on real data and facts, which makes its results reliable and trustworthy.

The second stage involves collecting information from various sources, such as interviews, observations, documents and other materials. At the third stage, a detailed analysis of the collected data is carried out to identify key factors and patterns. Next, the results obtained are interpreted and conclusions are formulated, which are presented later in this study.

#### 1. Theoretical aspects of the logistics management system.

Logistics as an economic concept emerged in the second half of the 20th century. "The foundations of commercial logistics were laid in the late 1970s – early 1980s by American management specialists in the development of the EDIFACT system, an electronic system for exchanging data (information) on the financial situation, management, commerce (marketing), and transport maintenance of the company's activities in a competitive market" (V. Yu. Bozanova et. al., 2017) [20, p. 113].

The need to optimise the movement of goods became evident. "The possibility of end-to-end monitoring of all stages of the movement of raw materials, parts, and finished products made it possible to clearly see the huge losses inherent in traditional material flow management schemes. The clear economic gain from using logistics in the economy led partners to cooperate in the field of product promotion" (V. Yu. Bozanova et. al, 2017) [20, p. 119].

Table 1

Stages of the evolution of the concept of logistics

Stage	Period	Essence
AND stage	20-30s of the XX century.	the period of "fragmentation" of logistics, when there is a constant awareness of the importance of logistics for the economic life of the economic sectors; the prerequisites of the logistics concept are being formed: the growth of transport tariffs, the emergence and rapid development of the marketing concept, the growth of stocks and transport costs, etc. The appearance of logistics in business is connected with the sales and consumer (market) marketing concepts formed at this time, which are oriented towards the needs of consumers and solving their problems.
	50s of the XX century	subordinating production, trade and other activities of enterprises to the requirements of the market and consumers, creating and maintaining

		consumer satisfaction, which the enterprise has the opportunity to make a profit.
II stage	50s of the XX century.	the period of conceptualization of logistics is characterized by a wide distribution of marketing; the emergence of the concept of total costs, the meaning of which was that it is possible to regroup distribution costs so that the overall level of costs for the promotion of goods from the producer to the consumer is reduced; rapid development of computer technologies; changes in stock formation strategies; special attention to the issue of cost reduction; by increasing the production of transport and storage equipment, new types of containers, modern automated warehouse complexes.
	60s of the XX century.	the concept of business logistics arises, which considers logistics as the management of all types of activities that contribute to the movement and coordination of supply and demand for goods in a certain place and at a given time.
	70s of the XX century.	the fundamental principles of business logistics were formed: dynamism, complexity, flexibility, synergy, principle.
III stage	80-90s of the XX century.	the period of the integral concept of logistics (according to D. J. Bowersox, (2007) [3], the period of the "logistics renaissance") is characterized by a revolution in information technologies, which led to an understanding of the need to manage not only material, but also information flows. It was the progressive development of information technologies that transformed the approach to logistics, which, in addition to the process of planning, management and control of the effective flow of stocks of raw materials, materials, goods, services, requires the mandatory availability of accompanying information support on the way from the origin of the flow to the place of its consumption in order to satisfy consumer needs (Ye. V. Krykavskii, 2005) [21, p. 337].
IV stage	95s of the XX century. – until now	the latest stage of development of logistics is the stage of globalization (V. Omelchenko, 2008) [22, p. 223]. It was intense globalization that influenced further changes in the theory and practice of logistics. This contributed to the creation of national and international specialized logistics unions and associations, which, in addition to units engaged in the promotion of flows, have research centers, consulting departments, information banks, training centers, etc. Global trends in business made it possible to expand the list of logistics services (postponement, transshipment, mass production of products to order, direct delivery, seller's inventory management, synchronized movement of materials), reduce the number of suppliers and form long-term cooperation with logistics intermediaries, improve methods of managing logistics processes.

*Source: built by authors*

In the integrated strategy of distribution logistics, two fundamental aspects can be distinguished. In a simplified form, they can be presented, firstly, as a study of market needs, which is what marketing actually does, and secondly, as methods and methods of the most complete satisfaction of these needs through a more efficient organization of transport and forwarding services.

The development of logistics is inseparable from the development of related industries – transport, warehousing and equipment, procurement systems and

distribution of other elements that ensure the performance of one of the most important functions of marketing – the movement of goods.

In our opinion, it is a mistake to talk about logistics as the management of material flows, forgetting that material flows occur beyond the will of people (river flow, floods, avalanches, sunlight, mudflows and other natural phenomena). In real economic reality, especially in the conditions of commodity-money relations, no material, product, product will begin to move until it turns into a commodity, that is, until someone buys it and someone sells it.

So, let's give the following definition of logistics: logistics is a system of theoretical, methodological and practical knowledge about the management of commodity flows and related information and financial flows from the source and place of their origin to the intermediate or final destination (consumer, customer).

The most important goal pursued by the company when organizing a logistics service or setting tasks that are solved with its help is "economy of costs related to consumption, production and distribution of products" (O. V. Horbenko, 2012) [16, p. 426]. It is an important tool in the competitive struggle. The more favorable market positioning of the enterprise in comparison with competitors is greatly facilitated by the timely supply of goods in the optimal quantity and agreed nomenclature, at the required time, which is important and sometimes decisive for the consumer.

Undoubtedly, competition is the "engine" of production and trade. At the same time, the consumer always benefits from active competition between enterprises, and the enterprises themselves often go bankrupt and stop their business, due to the lower level of profitability or the inability to deal with the inefficiency of certain processes in the production or sale of products. Such inefficient processes often include the processes of transportation and movement of materials" (N. M. Vasylytsiv, 2010) [23, p. 270].

An enterprise that does not pay attention to logistics will certainly face the inevitable consequences of this:

1. A decrease in the profitability of production and an increase in the cost of production; high costs of non-production labor and all associated costs of operations.
2. Inconsistency of commodity stocks with production needs (symptoms are either too high or too low a level of stocks. The result is either idle production or sales due to a lack of stocks, or funds frozen in excessive stocks).
3. Low-quality customer service (the result is the loss of customers and, therefore, market share).
4. Increasing costs for equipment operation.
5. Large expenditure of time on cargo processing. Inefficient organization of material flows.

The overall result: due to the increase in the cost of production, the company loses its competitiveness, market share, and profit.

When developing models of logistics systems, users must remember the influence of a large number of objective and subjective factors operating at a certain point in time. The main ones are listed in the table. 2.

Table 2

Factors influencing the development of a logistics system model

A group of factors	Description of impact
1. Composition of subjects and their placement.	The system may include one or more legally dependent or independent organizations in the area of production and circulation. The need for material, economic and labor resources determines the choice of a logistics system model, as well as a marketing strategy on the market of goods and services. When organizing the logistics system, forming new production facilities, the availability and location of suppliers must be taken into account; they do not have the opportunity to effectively influence the localization of suppliers or consumers of most economic structures, therefore they have their enterprises at their disposal, taking into account the reduction of transport costs.
2. The number and placement of warehouses and transfer points	They can be installed directly at enterprises, connected to storage and processing systems of material resources received from suppliers, or to warehouse transformation centers focused on satisfying consumer requests. If necessary, intermediate warehouses can be created in the immediate vicinity of consumers.
3. Transport models	When forming logistics systems, several variants of transport models are developed. Each of them is distinguished by costs, type of transport, speed of delivery, reliability, rhythm, originality of packaging and storage. The optimal option under the currently formed conditions is determined and implemented. In the event of a change in conditions, which resulted in the transformation of calculated indicators, the subjects of logistics systems should be able to use other options of transport models.
4. Communication	Functional subdivisions of the logistics system at all levels are integrated not only by transport, control, but also communication links, forming complex subsystems. Communication between units and subsystems is implemented by telephone, telegraph, cable, computer network, and others. Each type of communication has its pros and cons. The factor of fast communication plays an important role in the functioning of the logistics system. It affects the level of adaptation of the system to the environment, has a direct impact on the decision-making and implementation processes.
5. Information system	When creating logistics systems, its presence is mandatory. Its structure depends on users, which include elements not only of a certain system, but also of the external environment. Verification of the latter is limited. The chosen approach to order processing has a great impact on the type of information system. Therefore, the system can be centralized and decentralized.

*Source: constructed by the author according to (V. M. Kisliy et. al., 2010) [24, p. 139]*

The process of development of logistics systems is based on logistics principles and involves the exact interaction and coordination of all the previously listed functional elements, taking into account the impact of influencing factors. Logistics

systems are characterized by polystructurality, which is expressed in the interpenetration of various subsystems that form several structures. A peculiarity of logistics systems is their relation to systems with a variable structure. They are not static and are organized taking into account the working conditions, and have the property of rapid restructuring.

The theory of logistics and the currently available practical experience allow us to reduce the variety of features of the movement of material, financial and other resources, as well as information in enterprises to a certain number of standard models. This approach reduces time and saves money for the formation of individual programs.

The essence of modeling is based on determining the similarity of the studied systems or processes, which can be complete or partial. According to this feature, all models of economic systems are divided into isomorphic and homomorphic. Isomorphic models include the characteristics of a real subject, and their correspondence is complete. Homomorphic models are based on incomplete similarity of the selected model, in other words, the similarity is partial. When modeling logistics systems, there simply cannot be complete similarity.

The most important characteristic of logistic models is their materiality. According to this feature, they are divided into two classes: material and abstract.

Material models reproduce the main geometric, physical and functional characteristics of the subject or processes under study.

In logistics, often the only modeling method is abstract modeling, it can be symbolic and mathematical in terms of expression.

Symbolic models are divided into two types.

1. Languages based on a certain set of words that are understood unambiguously.
2. Sign models, the essence of which is that certain concepts are assigned some conventional designations, that is, signs (A. G. Kalchenko, 2004) [25, p. 174].

Mathematical modeling is the most effective in logistics. Two types of mathematical modeling are most common in logistics: analytical and simulation.

Analytical modeling is a kind of mathematical approach in the process of researching logistics systems. Its purpose is to obtain the most accurate solutions. The analytical modeling process itself is divided into three stages. The first one formulates mathematical laws and dependencies that connect individual objects of the system. At the second stage, equations are solved and theoretical results are obtained. On the third, the obtained results are compared with reality, an adequacy check is provided. The advantages of analytical modeling are the great generalization potential and the possibility of repeated use.

Simulation modeling is used in those cases when analytical methods for researching one or another logistic model are not available or their search requires large costs. Simulation modeling is used both for analysis and optimization of logistics



systems and is the main method of flow process research. Simulation modeling is divided into two stages: the first is to construct a model of a real logistics system, the second is to conduct experiments on this model.

There are two main disadvantages to consider when using simulation modeling. First, it is the high cost of this research method. Secondly, there is a high probability of false imitation, since not only flow processes, but also other processes in logistics systems have an approximate nature.

A typical logistics system consists of a specific number of elements and certain relationships. Logistic modeling allows you to combine not only possible connections in the conditions of the development of the existing market, but also heuristic relationships in the forecasted market. This nature of logistics system management modeling takes place at both the macro and micro levels. The modeling of logistics systems is greatly influenced by differences in the operating conditions of enterprises and even similar divisions.

The use of outsourcing in logistics has recently gained considerable popularity.

Outsourcing involves the transfer to external organizations on the basis of a contract of functions that were previously performed in-house. The transfer of functions causes changes in material and human resources, and the right to make decisions is also redistributed. In addition to issues that may be stipulated in the contract (level of service, quality, price of services), the provider independently chooses technologies, resources, etc., with the help of which it will perform its functions (O. V. Yeletenko, 2008) [26, p. 495]. Outsourcing also means hiring third-party employees or companies that provide services to perform these additional processes. Currently, these services are used by millions of companies around the world in various fields of activity.

Outsourcing is especially often used in logistics, as its effective use allows to increase the competitiveness of the enterprise many times over. The use of outsourcing allows you to reduce the company's costs in the process of carrying out logistics activities thanks to the involvement of professional employees.

Outsourcing in logistics, assuming part or full implementation of functions, allows to increase the profitability of the enterprise due to the reduction of the cost of production and general expenses. The management of the company, in turn, can use the resulting time savings for more focused regulation and control of management activities. It also allows you to increase the concentration of staff efforts on improving the quality of their professional activities, which will have a favorable effect on profits. There are several more reasons to use outsourcing:

1. Insufficient qualification of personnel to carry out logistic activities. Outsourcers allow you to solve this problem by providing highly qualified specialists.

In addition to this, the customer's personal staff will have the opportunity to quickly acquire the necessary knowledge that will increase their competence.

2. The company's management is aware of the need to implement changes in its own activities, the exact definition of which can be found only with the help of outsourcing.

3. Improvement of performance indicators of the logistics department without the use of significant costs for personnel training.

4. Implementation of new ideas, for the implementation of which it is necessary to leave only the main activity and get rid of additional (V. I. Katsma, 2016) [27, p. 63].

The use of outsourcing in logistics activities has its advantages and disadvantages (Table 3):

Table 3

Use of outsourcing in logistics activities: advantages and disadvantages

Advantages	Disadvantages
1. Focusing on the main processes in connection with the transfer of secondary ones to the hands of professionals.	1. There is a possibility of increased costs if the company outsources too many processes.
2. Significant cost savings. It consists of the fact that the costs of transportation and warehouse activities are minimized; there remains an objective number of personnel necessary to solve the necessary tasks; investment costs are partially or completely reduced.	2. Possible loss of control over the execution of transferred processes, which in turn reduces managerial flexibility.
3. The qualification of the enterprise's own personnel in carrying out logistics operations is improved.	3. There is no clear legal framework for outsourcing. Many companies are afraid to outsource business processes due to the possibility of information leakage. However, with a competent use of outsourcing and a careful selection of the company that will undertake logistics activities, it is possible to significantly reduce costs and gain a significant competitive advantage.
4. The risks associated with the implementation of logistics processes due to the transfer of this form of activity to an outsourcer are reduced	
5. Operational control is improving.	
6. The quality of the services provided improves because the specialists involved are constantly developing and using the latest technologies.	

*Source: constructed by the author according to (M. Yu. Hryhorak et. al., 2013) [12, p. 177-179]*

As a conclusion, we note that the competent organization of the logistics operation from the purchase of raw materials, materials, components and to the delivery of finished products to the buyer allows to obtain a very noticeable saving of working capital and in this sense is an important tool in the management of the production and commercial activities of the enterprise.

The most popular modern methods of evaluating business performance is the key performance indicators (KPI) system, which is used by most large global companies. Key performance indicators (KPIs) are measurable company goals, usually related to

strategy, revealed by performance management tools such as the balanced scorecard (Ye.V. Krykavskiy, 2004) [28, p. 353].

Accordingly, global companies use a set of key performance indicators to evaluate the effectiveness of logistics management.

For now, having studied the theoretical aspects of logistics, in particular, defining the essence of this concept, as well as characterizing the logistics management system in the company's activities, as well as clarifying the essence of logistics approaches in the organization of sales channels, we will proceed to analyzing the practical experience of the transformation of logistics support of economic activity.

## 2. Practical experience of transformation of logistic support of economic activity

The company "Witron Logistik + Informatik GmbH" was founded in Germany in the middle of the 20th century [30]. Today, Witron Logistik + Informatik GmbH is a developer of dynamic and innovative logistics and order picking systems for retail and industry. A decisive factor in the success of Witron Logistik + Informatik GmbH projects is the overall responsibility for design, IT systems, control/PLC, mechanics, implementation, deployment and system maintenance. Therefore, "Witron Logistik + Informatik GmbH" relies on the triad of design, construction and operation (O. O. Kuchmeev, 2018) [29, p. 102].

Regarding the last stage – operation, thanks to innovative remote services such as IT support and maintenance, maintenance services, individual training, a global spare parts network, as well as supporting software tools (Witools), customers receive everything for daily success. In addition, the Witron service supports the customer with analysis, audit and modernization services.

For Witron Logistik + Informatik GmbH, system design is the first step in the client's project ("Design" stage of the strategic triad) [30]. Together with customers, the company's specialists develop a general concept of logistics and together clarify questions about warehouse equipment, assembly technologies, ergonomics, user experience and usability, we take care of energy efficiency. "Witron Logistik + Informatik GmbH" guarantees its customers constant functional responsibility and partnership throughout life. From the first data analysis of existing logistics processes to the classification and selection of suitable logistics personnel, "Witron Logistik + Informatik GmbH" means process knowledge in logistics planning. In addition to design experience, employees of "Witron Logistik + Informatik GmbH" also possess technological knowledge and integrate solutions into the customer's ecosystem to create ergonomic workstations and establish economic and ecological processes. In addition to building new logistics centers, "Witron Logistik + Informatik GmbH" also supports customers in creating future business models [30]. The assortment of logistics solutions of "Witron Logistik + Informatik GmbH" is given in the table. 4.

Table 4

## The assortment of logistics solutions "Witron Logistik + Informatik GmbH"

Type of logistics solutions	Logistics solutions and technologies	Brief description
Warehouse logistics	Logistics center	Design of warehouses, development of IT warehouse management systems
Transport logistics	Platforms for supply chain management	Development and maintenance of supply chains

*Source: by authors based on Witron Logistik + Informatik GmbH data [30]*

In fact, "Witron Logistik + Informatik GmbH" is not a logistics service provider in the classical sense of the word, but designs warehouses and completes value-added supply chains and strives for end-to-end optimization. The logistics center manages the material flow, so new tasks arise with new technology. Many want to continue to optimize machines, but much greater efficiency gains are achieved between transportation, the logistics center and the end consumer. It is possible to prepare the goods in the warehouse very quickly, but this does not benefit the customer if the trailer is not yet on the loading dock. It makes no sense either from an economic or an environmental point of view. Process intelligence will save money, increase flexibility and help manage business processes in a more sustainable way. This concept of the platform creates transparency and efficiency of processes.

New developments in the IT industry are also changing the warehouse management system (WMS). In addition to standard warehouse management functions, such as registration and management of all goods and stocks in one interface, flexible warehouse configuration, quality control and inventory, as well as extensive statistics, diagnostics, modeling and visualization functions, the Witron Logistik + Informatik warehouse management system GmbH" offers various performance features. Example: seamless connection of a wide range of subsystems. Whether it is portable radio terminals or voice picking systems, forklift control systems, automated material flow processes or lighting solutions, the Witron Logistik + Informatik GmbH warehouse management system combines a wide range of subsystems and warehouse types. platform. Witron Logistik + Informatik GmbH aims to become a logistics platform for its customers, set new trends in user experience (UX) and use data science for machine learning projects, as this requires knowledge of mechanics, controls and processes.

For the operation phase, thanks to innovative remote services such as IT support and maintenance, maintenance services, individual training, a global spare parts network, as well as supporting software tools (Witools), customers receive everything

for daily success. In addition, the WITRON service supports the customer with analysis, audit and modernization services.

Commitment and responsibility are key components of corporate culture at Witron Logistik + Informatik GmbH.

Planning and implementing the best solutions depends on various factors. Developing and implementing the best solutions requires being faster and better than the competition, taking responsibility, being predictable, delivering on promises and being inspired. These are the main pillars of the corporate culture of "Witron Logistik + Informatik GmbH" (Table 5).

Table 5

The main pillars of the corporate culture of "Witron Logistik + Informatik GmbH"

Elements of corporate culture	Implementation examples
Commitment is when a person takes responsibility	There is one phrase that our clients never hear from us: "I'm not responsible for this!" This does not mean that all our people can do absolutely everything. But every person at "Witron Logistik + Informatik GmbH" feels responsible for customers and will help them solve any problem. Given that teams often work together for years without any change, most can do a lot. Or they ensure that a colleague takes care of everything.
Commitment transcends borders	For many years, the company has supported work for children in Brazil in the field of education and training. In Africa, Witron Logistik + Informatik GmbH also supports the development of projects, as well as the construction of hospitals and educational institutes.
Responsibility has a future	"It is a shame on the part of society that fewer and fewer young people are getting educational opportunities." – Walter Winkler has a very clear view of social responsibility. That is why "Witron Logistik + Informatik GmbH" has been training more than 1,000 young people since 1971. Many small businesses in the region are unable to offer lifelong learning, so Witron GmbH has taken on some of these training costs.

*Source: Witron Logistik + Informatik GmbH [30]*

The company takes care of its partners, to whom it provides logistics service. Since 1990, separate territorial divisions of Witron GmbH have been operating in the Netherlands, Spain, Great Britain, France, the USA, Canada and Singapore (Fig. 1).

From the point of view of "Witron Logistik + Informatik GmbH", the decisive factor for a successful project is the overall responsibility for the design, IT systems, control/PLC, mechanics, implementation, expansion and maintenance of the system. Therefore, "Witron Logistik + Informatik GmbH" relies on a strategic triad. Thanks to the experts and solutions of Witron Logistik + Informatik GmbH, the customer can concentrate on the core business. This saves time and resources.

An enterprise as an open system bases its existence and development on interaction with the external environment. At the same time, a certain correspondence between the environment and the system is a condition for the existence of the system.

Any changes in the environment and (or) in the system itself lead to malfunctioning or destruction of this system. The system can adapt to changes in the environment in different ways. You can change the number or quality of the elements that make up the system. But you can change the connections between the elements to achieve a new synergistic effect. The interaction of elements within the system ensures the transformation of inputs into outputs.

#### ▪ **Subsidiaries :**



Fig. 1. Geography of separated territorial divisions of "Witron Logistik + Informatik GmbH"

*Source: Witron Logistik + Informatik GmbH [30]*

Analysis of the market situation of "Witron Logistik + Informatik GmbH" is of great importance, taking into account the fact that the company operates in a specific high-tech market of developers of logistics solutions with a high level of competition. The main competitors of "Witron Logistik + Informatik GmbH" in the field of logistics management are: Bringg Delivery Technologies, Bastian Solutions, Stord, Logistimo.

The main results of the activity of "Witron Logistik + Informatik GmbH" include both financial results and intangible assets in the form of patented developments of logistics management solutions.

The authorized capital of Witron GmbH is EUR 3,500,000. 2,200 employees work for Witron worldwide. 1,300 employees work in Parkstein, i.e. in the main company in Germany. 75% of all employees have undergone or are undergoing training within the company.

The main patented solutions for logistics management of Witron GmbH are listed in the table. 6.

Table 6

The main results among the logistics management solutions of "Witron Logistik + Informatik GmbH"

Acro-nym	Product	Description
OPM	Order picking machinery	it is a fully automated picking of boxes in the retail area food trade. Now this solution is implemented in the fifth generation and is in demand all over the world. It is used for storing dry, perishable and frozen products. OPM is currently proving its effectiveness in more than 90 projects in 13 countries. Some customers are already using the solution with its multi-channel features and the artificial intelligence behind it.
FPM	Flow picking machinery	is a highly efficient system for fully automated picking in distribution centers without stocks (Flow through) – an integrated end-to-end system from receipt to shipment. The FPM concept is thus a solution for fresh produce logistics, which are handled almost exclusively through warehouses without stock and place high demands on product assortment, product quality and storage time.
AIO	All-in-one	is a warehouse logistics solution suitable for systems of all sizes and industry sectors, for almost all business models, product structures and delivery channels, with short order fulfillment times, integrated returns processing, ergonomic, flexible, scalable and therefore very economic.
DPS	Dynamics picking system	Highly dynamic and automated selection of small parts in DPS is supported by the backlight system. DPS works on the principles of "goods to people" or "people to goods". Depending on the structure of the order, the items are placed permanently or on demand on the assembly front, which means that it is always optimized.
OPS	Order picking system	The OPS automated picking system is an integration of the automated small parts warehouse (AS/RS), distribution circuit and picking workstations. In OPS, goods are prepared for picking at picking workstations according to the "goods to person" principle for each order and in the correct sequence.
GTP	Goods to person	Thanks to the full integration of the newly developed Goods-to-person (GTP) solution into the overall OPM concept, it is now possible to pick and consolidate non-automated goods in an ergonomic, cost-effective and storable way directly at the delivery point. units that have already been preselected in OPM.
CPS	Car picking system	The CPS storage system is a manual order picking system for an optimized routing of boxes on pallets or roll containers, supported by radio frequency communication, voice picking and illumination technology.
ATS / ACS	Automatic tray / case system	ATS/ACS for fully automatic assembly of whole bags, carton trays (fresh produce, fruit, vegetables) and beverage cartons. This one the system is most commonly found in temperature-controlled food retail areas.
BOS	Box order system	A WITRON development that not only meets high expectations for product handling, but also sets new standards for efficiency, productivity and ergonomics in the fresh produce environment. Due to its high flexibility, the solution can also be used to transport beverage crates.
DPP	Display palette picking	The DPP solution is an integrated concept for the fully automated creation of store-friendly customer orders consisting of different quarter and half pallets. At the same time, the order can be completed with DPP both on pallets and on rolls.
MPS	Module picking system	Heavy, bulky goods are stored economically with the MPS order picking system and collected on pallets or mesh boxes. The user is supported by pick-by-light.



Shipping buffer	Conveyor storage technology is used for temporary storage of finished customer orders in double-depth warehouses for euro pallets and triple-depth for pallets of the roll system containers. To increase system availability, roll containers are always transported and stored on system pallets. Rolled containers are prepared for shipment without a system pallet on the lifting conveyor.
Witron conveyor system	The product range includes all key elements of the conveyor system for trucks, trays and pallets. Even Case order machine, central element of the OPM system as well as other visionary fully automatic assembly machines are designed and built in-house in a production area of 180,000 square meters.

*Source: by the authors based on Source: Witron Logistik + Informatik GmbH data [30]*

Therefore, solutions for logistics management developed by "Witron Logistik + Informatik GmbH" make up a single integrated system of logistics support.

Now let's analyze the projects of "Witron Logistik + Informatik GmbH" on logistics management.

A significant number of customers trust Witron Logistik + Informatik GmbH with their logistics processes as processes become more complex and customers often lack qualified personnel to service technically demanding machines. "Witron Logistik + Informatik GmbH" offers an individual solution for logistics, which promises the client a competitive advantage.

Logistics managers worldwide from various industries use Witron Logistik + Informatik GmbH solutions to optimize their processes, increase the flexibility of their material flows, save costs, liberate the environment and create ergonomic workplaces. The main data on the projects of "Witron Logistik + Informatik GmbH" are shown in fig. 2.

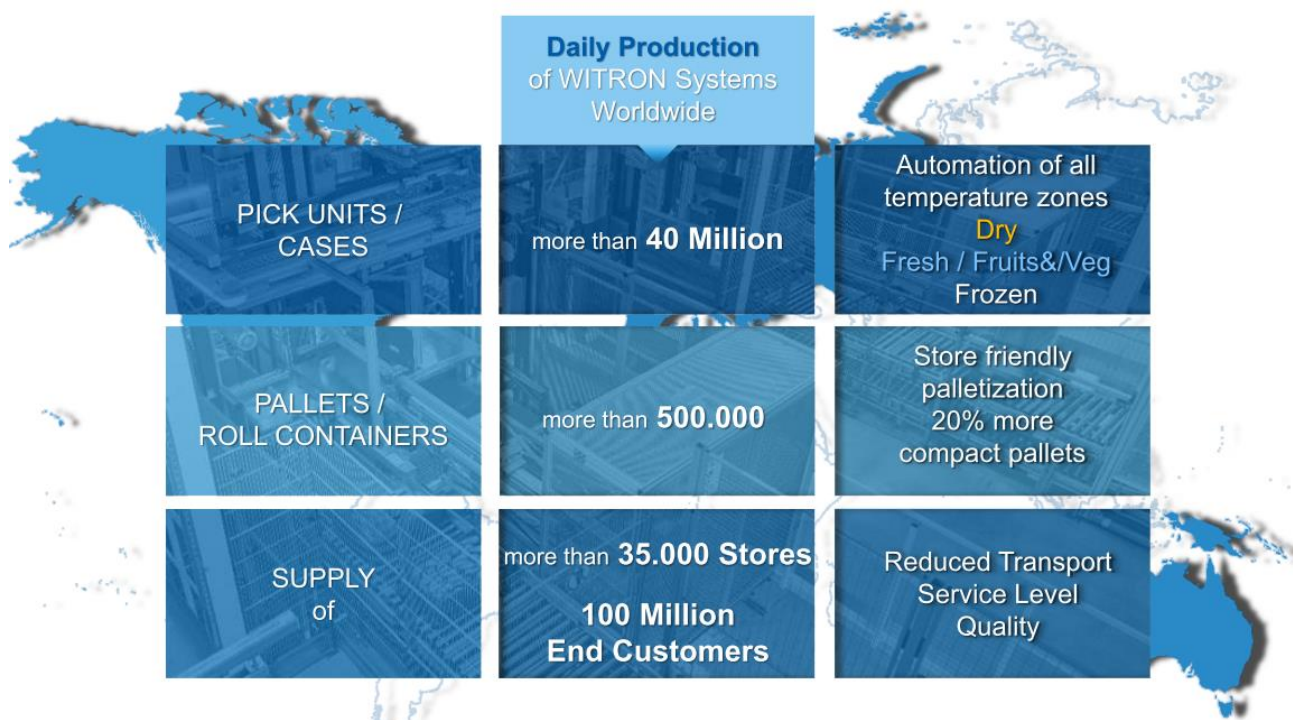


Fig. 2. Data on logistics projects "Witron Logistik + Informatik GmbH"

*Source: Witron Logistik + Informatik GmbH [30]*



The company ensures optimal material flow, guaranteed delivery performance and thus adds to logistics. Projects are implemented in North America, Europe, Asia and Australia. Well-known companies from trade, industry and services - corporations and medium-sized companies – trust Witron Logistik + Informatik GmbH with their logistics processes.

In particular, the Witron Logistik + Informatik GmbH project for Retailer Coop from Norway (Table 7) deserves attention, the essence of which was to solve the problem of expanding a very dynamic multi-temperature logistics center for 1,200 stores during current operations with an increase in picking productivity from 480,000 to 625,000. But when, on top of that, stores and online orders continue to grow due to various obstacles, and teams have to operate within certain constraints (as was the case with Covid-19), more than just technical and organizational knowledge is needed for all involved. for both parties.

Table 7

Overview of the "Witron Logistik + Informatik GmbH" project for Coop Norge Handel AS

Project elements	Description
Customer: Coop Norge Handel AS	From a highly automated facility (with 5 different temperature zones), COOP supplies approximately 1,200 stores located throughout Norway, from the metropolitan region around Oslo and the far north of Norway, with an assortment of 13,000 different products.
Location	Jessheim (near Oslo Airport), Norway.
Sector of activity	Retail trade / distribution.
Products	13,000 items in five different temperature zones - dry, fresh, fruits, vegetables, frozen.
Decision	OPM, DPS, CPS, maximum automation of the delivery buffer.
Amount	625,000 selected cases per day.
Features of the project	The task given to project manager Gaute Glomlien of COOP and project manager Holger Weiss of Witron was described as follows: expand the dry, fresh and frozen goods logistics complex from 52,000 square meters to 84,000 square meters, increase throughput by 30%, integrate 11 new of COM machines (in the dry, fresh and frozen area), install additional AS/RS aisles for pallets and trays, as well as various conveyor system components, increase the size of the fully automated transport buffer, and upgrade the relevant WMS system to the latest technology.
Challenges of the project	All components had to be integrated into the existing material flow during ongoing operations. Of course, without any loss of productivity – taking into account all safety measures (e.g. in case of Covid 19). The extension is probably the most complex built-up project in Witron's history to date, in which existing technologies have been upgraded and new modules have been integrated – both into the existing building and into the new extension facility. COOP is a demonstration project for Witron. Many international customers visit the facility. Witron has been able to demonstrate impressively how expansion can be carried out on budget and on time within ongoing operations despite challenging framework conditions.

Customer opinion	"The upgrade gave us a state-of-the-art solution that was refined during ongoing operations to an amount of throughput that could not even have been anticipated at the initial design stage. Previously, thanks to Witron systems, we could save millions of euros annually. Therefore, it was clear that we would also implement the expansion with the help of WITRON and their leading logistics technologies," explained COOP project manager Gaute Glomlien.
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*Source: Witron Logistik + Informatik GmbH [30]*

From a highly automated facility (with 5 temperature zones), Coop supplies about 1,200 stores located throughout Norway, from the metropolis around Oslo and in the north of Norway, from an assortment of 13,000 different products. A generalized description of the project and its result is given in the table. 7.

Let's analyze the following project "Witron Logistik + Informatik GmbH", implemented for Asko – the largest food wholesaler in Norway and part of the Norgesgruppen. A generalized description of the project and its result is given in the table. 8.

Table 8

#### Overview of the "Witron Logistik + Informatik GmbH" project for Asko (Norgesgruppen)

Project elements	Description
Customer: ASKO, Norway	WITRON implemented a 24,000 m <sup>2</sup> fresh produce warehouse for Asko. Asko is part of the Norges group. The company's clients include 14,000 hotels and restaurants, as well as 2,670 shop operators. Asko manages 12 regional warehouses.
Location	Vestby, Norway.
Sector of activity	Retail trade / distribution.
Products	> 4000 fresh products.
Decision	OPM with 18 COM machines, DPS with 28 pickers, OCB, MPS and consolidation system, HBW.
Amount	317,000 picks/peak day.
Features of the project	Picked fresh loads are transported using connected pallet lifts (the logistics center was built on a hillside - the ground had to be blasted) to another receiving area, where they are manually packed together with dry loads from another order placed on a forklift, and then leave a "warehouse within a warehouse" with its own fleet of Asko trucks.
Challenge	Three processes, three material flows, three vehicles, three delivery areas, three different distribution channels and three years were needed to implement the new fresh produce warehouse project – from the first mechanical installations to the full transfer in spring 2018 – a logistical masterpiece, according to employees of Asko.
Customer opinion	We did not exclusively ask for a technical expert for the project or look for technical systems, but we were looking for a company that understands the process and the dynamics, that can map these processes and develop or adapt technical solutions for them," explains Logistics Director Arild Osmul.

*Source: Witron Logistik + Informatik GmbH [30]*

Therefore, Asko provides efficient distribution of products to grocery stores, retail trade of goods of daily demand and public catering establishments. An effective distribution network is a necessary condition for consumers to receive products at the lowest price and best quality. Retailers across Norway benefit from competitive prices

and a wide range of products as Asko customers. "Witron Logistik + Informatik GmbH" implemented a project to create a new warehouse for fresh Asko products (+2 °C).

This was not too much of a challenge for the technical systems of "Witron Logistik + Informatik GmbH", and the logic and dynamics in the processes, the integration of technology and design were decisive for the successful implementation of this project.

"Witron Logistik + Informatik GmbH" is engaged in the management of logistics support not only for food parcelers, but also for industrial manufacturers. In particular, it was Witron Logistik + Informatik GmbH that implemented the project of the sports car manufacturer Porsche from Zuffenhausen to centralize its worldwide spare parts logistics service at the Sachsenheim plant. Now 3.2 million order lines are sent from there every year (Table 9).

Table 9

Overview of the "Witron Logistik + Informatik GmbH" project for Porsche

Project elements	Description
Customer: Porsche	Porsche, the manufacturer of premium sports cars, has invested more than 100 million euros in this huge project. More than 700 Porsche dealers worldwide are supplied with spare parts from Sachsenheim. We currently have around 85,000 different Porsche parts or material numbers in stock, from a single screw to a complete hard top.
Location	Sachsenheim.
Sector of activity	Automotive industry.
Products	85,000 different parts.
Decision	AS/RS, OPS.
Amount	3.2 million order lines per year.
Features of the project	To optimize processing, the spare parts warehouse in Sachsenheim is divided into an automated storage and picking system for small parts and a manual storage and picking area for medium and large parts. A variety of small parts in an automated small parts warehouse (AS/RS) are stored compactly and compactly using plastic containers of various sizes and dimensions. Medium-sized parts are stored in lattice boxes, large ones are stored on poles or wooden pallets. "This division into three units, which are also organizationally independent, allows us to have ideal process flows – from product to person or from person to product," Wells says. "It also allows orders to be placed in the warehouse at the latest possible time, according to the corresponding gap time." There is no need for intermediate reinforcement, which saves time and transportation, and ensures a direct flow of material. The train concept serves as an internal transportation system in the spare parts warehouse, helping to connect the three sections with the receiving area, the packing area and the shipping area. This technically simple and reliable solution ensures timely material flows according to a defined schedule and thus a constant flow of materials in the warehouse. The heart of the spare parts center in Sachsenheim is the highly dynamic automated small parts warehouse (AS/RS), developed and implemented by Witron. The decision in favor of logistics experts from Parkstein further expands the long-standing cooperation of trust between the two companies. As early as 2000, Witron implemented the TMS (Transport Management System) radio frequency system for Porsche at the former Ludwigsburg plant and at various external warehouses. It optimizes the material

	flow from receipt to shipment using the SAP LES warehouse management system. "We are focused on long-term partnerships. But a partner has to prove his worth again and again," says Jürgen Wels. In the summer of 2011, Porsche awarded WITRON with the "Porsche Supplier Award" in the category "non-production material". This award is presented annually to the sports car manufacturer's top ten suppliers and service providers.
Challenge	Two workshops with a total area of almost 113,000 m <sup>2</sup> were built in two construction phases over three years. "Our main concern at the spare parts center in Sachsenheim is to achieve excellence in physical logistics based on the principle of flow," explains Jürgen Wels. "To achieve this, we want to establish the optimal cost-benefit ratio in all processes." Time is a very important factor here. Today, when a retailer orders a part from Porsche, it is usually received within 24 hours in Europe and 48 hours elsewhere in the world. The portfolio does not only include all spare parts for current Porsche models, which has become an increasing challenge due to the increased variety of models in recent years. The stocked parts range also includes stock for classic cars, specialist aftermarket products (such as add-ons) and, more recently, parts for production prototypes in development.
Customer opinion	All strategic goals at the new location have been achieved. As far as the spare parts business is concerned, Porsche offers the cutting-edge optimum in spare parts logistics," says Jürgen Wels, Head of Logistics at Porsche, summarizing the positive achievements. We have high flexibility in all processes and benefit from even faster access. In By comparison, system availability in the overall process of over 99% is also in the absolute upper range The specifications for short distances and ergonomic processes at all workstations were consistently implemented.

Source: Witron Logistik + Informatik GmbH [30]

A project that needs attention is the development of the Corrugated packaging management system (CPMS), which is a business application for the production of corrugated cardboard worldwide (Fig. 3).

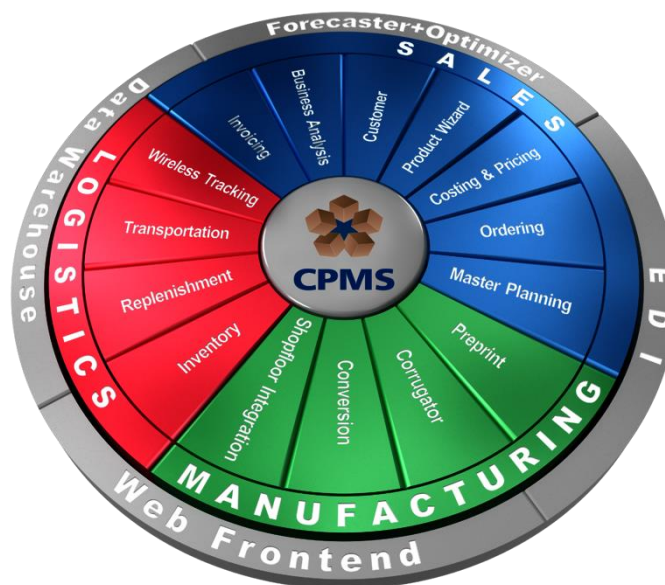


Fig. 3. Structure of a business application for manufacturers of corrugated cardboard

Source: Witron Logistik + Informatik GmbH [30]

The standard version of CPMS is extended by the CPMS Multiplant module, which extends all CPMS functionality to multiple company production sites for centralized use of CPMS functions (national sales organization, interplant planning) in a region for mutual benefit. For example, CPMS Multiplant allows you to logically centralize sales teams for multiple plants. Customer orders may be transferred to port routes subject to appropriate user authorization. The expected difference in the cost of the move will be displayed to the user in the company's currency before a final decision is made.

The modular software supports 250 corrugated plants from customer request, production to invoicing. The basis for this wide range of products was the participation of "Witron Logistik + Informatik GmbH" in the development of management applications in industry in the 1980s and 1990s. Based on this competence, the first control centers and planning systems with an industry focus were developed. The first Witron mes applications were enhanced with extensive functions for sales and delivery.

Thus, CPMS from "Witron Logistik + Informatik GmbH" displays in digital form the entire value chain of a corrugated board manufacturing plant (Fig. 3). The configuration options allow the CPMS to be used in the production of any product, from classic transport packaging to multi-component displays with digital printing for points of sale. Companies with multiple production sites benefit from the CPMS Multiplant option, which provides centralized capacity management with harmonized data.

The industrial sector, as well as many other areas of business, increasingly rely on the automation and digitization of production and logistics processes. CPMS is a future-proof platform that shares big process data with machines and supply chain partners for overall optimization.

The CPMS logistics module includes functionality for efficient inventory management, as well as transportation planning and shipment processing. All relevant material types, such as paper rolls, tools, auxiliary materials, as well as semi-finished and finished products, are managed by standard basic functionality. Material- or industry-specific functions, such as registration of paper rolls on the corrugator or recording of tool usage, etc., complement inventory management. CPMS transportation planning provides advanced algorithms for automated generation of shipments within defined delivery windows based on electronic road maps. Loading is monitored by radio frequency terminals that notify the forklift driver of loading and create all transport documents based on this information. Customer-facing external warehouses, or a central warehouse in the case of multiple locations, can be configured in CPMS and provide industry-specific delivery processes.

The CPMS Sales, Manufacturing, and Logistics modules form the core of the CPMS suite of packages. It connects to other Witron Add On modules using the Digital

access layer, which is also the basis for connecting third-party software. Additional CPMS modules are available: CPMS Data Warehouse: Business data from all areas of the CPMS Packaging core is available in a dedicated data structure that provides high-performance access using standard BI tools. CPMS EDI messaging: Customers and partners can exchange data with CPMS bi-directionally through electronic channels. CPMS Forecaster + Optimizer: an add-on module supports forecasting of paper and finished product's needs. It uses self-defined or customer-supplied forecasts to determine optimized replenishment batch sizes. Optimization is based on total costs and takes into account constraints such as capacity and warehouse size. CPMS mobile app: Mobile browser-based operations are enabled by the CPMS mobile app, which exchanges data with the Packaging core. The scope of functions covers the fields of sales, production and logistics, which benefit particularly from this technology.

So, we characterized the essence of managing the logistics support of the enterprise. It was found that logistics is a system of theoretical, methodological and practical knowledge about the management of commodity flows and related information and financial flows from the source and place of their origin to the intermediate or final destination (consumer, customer).

In addition, it was established that the use of outsourcing allows to reduce the costs of the company in the process of carrying out logistics activities due to the involvement of professional employees.

So, having studied the theoretical aspects of the logistics management system and the essence of logistics approaches in the organization of sales channels, the essence of sales logistics was determined, which is an integral part of the logistics system, which in turn is a component of the distribution system of the enterprise. Also, the essence of planning and organization of sales at the enterprise is analyzed, which includes the organization of sales of finished products, planning of product assortment, planning of product sales.

The investigated company, "Witron Logistik + Informatik GmbH," is a developer of innovative solutions for logistics management. Witron Logistik + Informatik GmbH develops highly dynamic and innovative logistics and order-picking systems for retail and industry. According to Witron Logistik + Informatik GmbH, the decisive factor for a successful project is the overall responsibility for the design, IT systems, control/PLC, mechanics, implementation, expansion, and maintenance of the system.

In general, the projects of Witron Logistik + Informatik GmbH on logistics management for the Norwegian retailer co-op, Asko (NorgesGruppen), and Porsche were analysed. It was also noted that Witron Logistik + Informatik GmbH has been engaged in the optimisation of processes in the field of corrugated board production for more than 30 years, with clients such as International Paper, DS Smith, Smurfit Kappa, Dunapack, Stora Enso, Model, THIMM Group, Delkeskamp

Verpackungswerke, and many others. With the help of CPMS, you can coherently combine all areas of business into one system. The connection of systems such as financial accounting, CAD, machines, conveyor systems, as well as map material for route planning, becomes possible through the digital access layer.

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# **OPTIMIZATION OF LOGISTICS FOR PHARMACEUTICAL MARKET ENTITIES BASED ON THE USE OF DIGITAL TECHNOLOGIES**

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In connection with significant restrictions in the usual life of the population as a result of the global pandemic of COVID-19, it has become important for society to transfer many business processes to the online environment. Since the main priority of any state is the life and health of its citizens, pharmaceutical activity also requires a quick transition to a digital format. Another important reason for the integration of pharmaceutical business processes into the digital environment was the full-scale military invasion of Russia into Ukraine and the need to organize proper pharmaceutical provision of the population even in such extremely difficult conditions.

In addition, pharmacy in Ukraine is a system-forming branch of the economy; digitalization is also an opportunity to ensure the conditions for the uninterrupted functioning of pharmaceutical market entities (PME) as significant taxpayers, which is a rather important factor in connection with the need to finance the country's defense costs.

For a potential client (consumer), digitization means saving time, convenience, and the opportunity to get the desired service online in any territory of the state and beyond. In the modern economic space, it is not so much the right to own a resource that is important, but the availability of the necessary information for its prompt use. In this way, the digital economy brings changes to the activities of the PME, which concern, first of all, logistics activities, in particular, in the formation of relations for the processing, storage, transfer, and use of the growing amount of data about the resources that the PME owns or in which they are interested. Under such conditions, the development of digitization of logistics activity, which focuses on the use of digital technologies (DT) and, currently, is developing at an extraordinary speed, becomes a priority for the PME. It acquires the most important importance in the process of

forming economic relations between participants of pharmaceutical supply chains (PSC) with the active use of DT, electronic communication channels, online modes of the Internet, etc. Thus, in modern conditions, PME are forced to develop in accordance with new guidelines, according to which the traditional methods of carrying out their activities are replaced by more progressive ones. The implementation of digital technologies ensures an increase in the productivity of personnel and contributes to the optimization of material and labor costs for the production and sale of pharmaceutical products, improving their quality and timeliness of order fulfillment, which ultimately increases the competitiveness of pharmaceutical enterprises (PEs) on the domestic and foreign markets.

The purpose of the study is to analyze trends in the development of DT in pharmacy, assess the actual state of digitization of the domestic pharmaceutical industry, and determine the impact of the implementation of DT on the effectiveness of the functioning of PSC and the ability of the latter to perform their socio-economic functions in new complex economic conditions.

The study of issues related to the development of pharmaceutical logistics remains a constant focus of many domestic researchers, including B.P. Hromovyk, S.H. Ubobov, V.V. Trokhymchuk, L.M. Unguryan, M.V. Bilous, O.P. Shmatenko, and others [6-7; 19; 37-38].

Applied aspects of the impact of DT on the functioning of the pharmaceutical industry in the conditions of digital transformation of pharmaceutical production were studied by M.V. Bilous [5], N.Ya. Dondyk, N.I. Sintcha, O.V. Lytvynenko [14], and others. While acknowledging the valuable research conducted by these scholars, it should be noted that the methodological aspects of the impact of DT on the functioning of pharmaceutical logistics enterprises require further in-depth analysis and research.

The conducted analysis of the scientific literature shows a sufficiently strong theoretical and methodological justification of the problems related to the application and development of various innovative technologies in the field of pharmaceutical logistics. However, the issues of the impact of digitalization on the logistics activities of domestic PEs and the reliability and efficiency of the functioning of PSC remain practically unexplored and, therefore, are relevant and require further study.

Research was conducted using databases on the Internet: the European Center for Information Systems Research, the European Medicines Agency, and scientific and metric databases such as Scopus and Web of Science. The search was conducted using the following keywords: digitalization, digital maturity, digital technologies.

Research on the use of DT at domestic PEs is given as of 2023 based on data provided by the studied PEs - PJSC "Farmak", PRJSC "PP Darnytsia", and LLC "PC Zdorovye". The choice of these PEs is based on the fact that these enterprises are the leaders in terms of sales of drugs on the domestic pharmaceutical market for many years

[15; 21; 25], and are also leaders in the field of pharmaceutical logistics. When conducting research, methods of information search, systematization, comparison and generalization were used, as well as a graphic method for visualizing research results.

As world practice shows, DT in pharmaceutical logistics play an extremely important role and contribute to the development of the pharmaceutical industry. Pharmaceutical logistics has become an integral part of life in the modern world, where the efficiency and speed of the supply of pharmaceutical products are important for the quality of life of the population.

With the rapid growth of the Internet trade segment and the systematic expansion of logistics networks, the tasks of PME in the field of logistics are becoming more and more complex. Based on this fact, the need to implement modern digital solutions in the logistics activities of the PME to optimize and increase the quality of services is becoming more and more relevant.

In addition, the trend towards digitization of the pharmaceutical business continues on world markets. In fact, PEs have long entered the competition in this segment. The modern development of technologies in the digital segment directly affects the nature and efficiency of business processes throughout the world, which becomes another factor of competition and requires the implementation of innovative solutions and approaches to the creation of effective management systems.

DT are becoming one of the key tools for achieving current goals for the development of domestic pharmaceutical logistics. Technologies such as the Internet of Things (IoT), blockchain, artificial intelligence, and others make it possible to transform pharmaceutical logistics, significantly increase the performance indicators of pharmaceutical companies, improve the quality of logistics service for customers, make relations with partners more transparent and convenient, etc. Digitization of logistics activities also contributes to more efficient use of PE resources. The implementation of DT provides an opportunity to optimize most of the logistics processes and increase their safety. In recent years, such solutions as Smart-logistics, which are based on automated technologies, work with large volumes of data, and cloud computing, have been rapidly spreading. Also, it is worth considering that the management of logistics activities is a rather complex process, which includes establishing relations with suppliers, conducting quality control of pharmaceutical products and route safety. Due to unfavorable geopolitical factors, sharp changes in the vectors of development of transnational pharmaceutical companies, which control most of the pharmaceutical markets, the need to implement DT in pharmaceutical logistics is of particular importance.

In Ukraine, the PME, which has its own transport units, continues to work in conditions of extremely high risks due to the full-scale invasion of Russia. In addition, a significant number of PEs were forced to build new PSC, including for the supply of products from EU countries. The demand on the domestic pharmaceutical market and

the purchasing power of the population of Ukraine have also decreased significantly, in addition, there are problems with the export of pharmaceutical products. Therefore, the introduction of new DT and methods of conducting logistics activity today becomes an important condition for adapting the PME to modern Ukrainian realities. In addition, one of the primary tasks today is the attraction and retention of customers, which can also be improved using the latest solutions [23; 30].

The analysis of scientific sources [26-27; 35-36; 40] allows us to develop certain trends in the development of logistics that will shape the future of the pharmaceutical industry:

1. Further digitization of pharmaceutical logistics, which is a necessary condition for increasing transparency, control and optimization of the functioning of the PSC. Such DT as cloud computing, artificial intelligence, blockchain, the Internet of things, automated processes allow PME to collect, analyze and exchange data in real time, as well as to automate and improve various operations, such as: planning, selection, delivery, tracking loads, inventory, etc. Digitization also contributes to the creation of digital doubles, which are virtual models of real objects or processes, whose behavior cannot be simulated, predicted or optimized. The digitalization of pharmaceutical logistics also promotes the implementation of electronic document flow, which reduces work, ensures speed and accuracy of information exchange, and also reduces the risks of errors, fraud and data loss.

2. The sustainable development of pharmaceutical logistics is a response to the growing demands and expectations of customers, regulators and society regarding environmental responsibility and social justice. Logistics is one of the most polluting industries, responsible for approximately 8% of global greenhouse gas emissions [27]. Therefore, PEs are looking for ways to reduce the negative impact on the environment and increase their own energy efficiency. Such measures include: the use of alternative energy sources, such as solar, wind, hydroelectric, biomass, etc.; the use of electric or hybrid vehicles, the optimization of vehicle routes and their loads; the use of environmentally friendly materials for packaging and recycling, the reduction of waste and losses, promoting the circular economy; and social inclusion.

3. Increasing the significance of the "last-mile delivery" problem, which is one of the most difficult and important stages of the logistics process, which includes the delivery of pharmaceutical products from the nearest distribution center to the final consumer. This phase requires high speed, quality, accuracy, and flexibility of operations, as well as taking into account various factors such as traffic, weather, safety, regulations, etc. Last-mile delivery is also one of the most competitive and innovative segments of pharmaceutical logistics, which is constantly evolving and adapting to changing customer needs and expectations. New trends in this field include the use of

technologies such as drones, robots, autonomous vehicles, artificial intelligence, blockchain, the Internet of Things, augmented reality, etc.

Experts note that active digitalization will be the defining trend in pharmaceutical logistics for the coming decades. According to the Global Industry Report, the projected size of the global digital logistics market in 2021 was USD 18.10 billion, and it is expected to reach USD 77.52 billion by 2030 [13].

As world practice shows, the DT of PSC management is an effective process of creating added value, implementing innovative approaches using technological and analytical methods, obtaining new forms of profit by rationalizing logistics processes, reducing the time of these processes, and minimizing the costs required for processing, exchange, and information analysis [36].

So, the digital PSC is an improved version of the traditional PSC, which includes various DT. Digital PSC involves the use of innovative technologies for the processing and analysis of data flows both within the PEs and outside its boundaries (between other PEs). Thanks to DT, it is possible to identify new potential opportunities and general trends in the development of PSC. By combining and integrating new technologies, PEs have the opportunity to gain a broader view of internal and external data and as a result, to eliminate redundant services while not reducing the quality of PE work as a whole.

The trend is predicted that in the next three years, the potential impact of the digitalization of PSC on the efficiency of PEs will increase, which will increase the flexibility of their activities, contribute to the reduction of operating costs, the reduction of lost sales, as well as the significant reduction of warehouse stocks.

It is appropriate to note the main components of a digital PSC, thanks to which PEs are able to function transparently and effectively, creating added value for potential clients and increasing their own investment attractiveness - this is integrated planning; digital procurement; intelligent storage; effective stock management, autonomous pharmaceutical logistics; thorough analysis of PSC; means of digital PSC, etc. [34].

However, the spontaneity and unpreparedness of the processes of implementation of individual digitalization tools without meaningful and systematic conceptual development of business processes and preparation of the corresponding basic software platform can lead to the appearance of certain problems and risks related to the implementation of DT and even to the growth of "digital chaos" , which threatens the loss of controllability of the logistics system (LS). According to the report of the international consulting company Deloitte, more than 60% of top managers of manufacturing and trading companies indicate that the threat of such risks in PSC is high enough [1].

Based on the results of the analysis, we have identified potential risks associated with the implementation of DT in the logistics activities of the PEs (Table 1) [11; 22; 32; 35].

Table 1

Potential risks associated with the implementation of DT in the logistics activities of the PEs

Risk	Characteristic
Technological	Insufficient security of the information system LS: in case of failure of the information system, a complete collapse of the system may occur since all processes in the conditions of digital logistics are not only interconnected but also integrated into the general information system. There is also a threat of possible leaks of information, unauthorized access to information, etc.
Financial	Digitization of logistics can "absorb" a significant budget of the PEs, while not guaranteeing the desired result. Certain very promising ideas can "fail" simply because they are ahead of the market; others, on the contrary, will become morally obsolete by the time of launch; and still others will simply not be able to provide the expected economic effect.
Staff	Due to the high speed of changes in logistics (especially digital), there is a possible shortage of personnel with certain qualifications, rapid aging of knowledge, etc. Insufficient motivation of IT team members to achieve a positive result is also possible.
Uncertainty of the future	In the conditions of uncertainty of the future trajectory of the development of economic and technological processes, it is necessary to develop and implement appropriate mechanisms and models that will allow all participants of the digital PSC to work effectively even in conditions of uncertainty.
Use of blockchain technology in logistics	Digital blockchain technology will mean that even if a transaction was incorrect, or was caused by a glitch, error, or fraudulent intervention but was confirmed, it cannot be corrected.
The emergence of problems when synchronizing the work of various participants of the digital PSC	Achieving consensus among large PEs, which are often direct competitors, is a particular challenge that needs to be addressed during the transition to the digital economy.
Use of cloud technologies in logistics	The use of cloud technologies leads to a number of risks for the logistics activities of the PEs, related to the need for a stable and high-speed Internet connection, the existence of problems of the cloud's vulnerability to various unauthorized attacks, and ensuring information security (third parties are responsible for it, not the PEs itself). This determines the dependence of the PEs on the services of the cloud technology provider, complicates the planning process (changing the conditions for obtaining cloud services: transition from the availability of cloud services on a free basis or at an acceptable price to payment of their full cost). In addition, there are no relevant national standards in Ukraine that would establish appropriate requirements for the quality and reliability of cloud technologies and services.
Lack of proper balance in the development of the elements of the LS of the PE during digitalization	If one of the elements of the LS will be significantly improved and it will be able to work quickly and efficiently, and the other will remain unchanged, then the result may be unsatisfactory operation of the system as a whole.
Staff resistance to active digitization of logistics processes	At the stage of implementation of DT, it is necessary to timely identify and stop sources of unjustified resistance on the part of various categories of personnel. Justification of benefits and effective motivation can significantly contribute to preventing or minimizing the occurrence of such risks.

*Source: elaborated and supplemented by the authors based on [11; 22; 32; 35]*

As the analysis of literary sources showed, the activity of digitalization processes of pharmaceutical logistics is influenced by various factors: the state of the digital infrastructure of the PEs, the qualification of logistics personnel and their awareness of DT, the level of costs associated with their implementation, the effectiveness of the organizational structure of logistics activities at enterprises, the state of organizational cultures, etc. [18-19; 30].

DT is the main driver of digital transformation. Therefore, the availability and effectiveness of the use of these technologies in many ways determine the level of digital maturity (DM) of the logistics activity of the enterprise.

Industry standards in pharmacy (good pharmaceutical practices, GxP) make high demands on the competence of PE personnel, as this factor directly affects the quality of all business processes and, accordingly, the quality of medicines. Therefore, the appropriate level of digital literacy of logistics personnel is certainly an important condition for the effectiveness of the logistics activities of PEs and their DM.

Cost management related to the implementation of DT in the PEs is also of particular importance for the realization of the digital transformation strategy, as unjustified and uncontrolled cost increases lead to higher prices for pharmaceutical products, thereby reducing the price accessibility of medicines for end consumers.

An indication of the DM of PEs is also the effectiveness of digital channels of interaction with customers, who are considered digital partners. Building such channels helps to fully meet the needs and demands of customers (consumers) and ensures the profitable operation of the PEs.

As is well known, the active implementation of DT requires significant financial resources and investments, which highlights the importance of their efficient use, largely depending on the rationale behind the PE choice of digitalization strategy. Selecting an appropriate digitalization strategy for the logistics activities of a particular PEs is not possible without a prior assessment of the company's level of DM.

The DM of PEs is characterized by the level of implementation and development of DT within the company, the degree of their integration into business processes, the efficiency of digital asset utilization, the type of computing systems used, and the modes of data processing. Ultimately, these factors determine the company's ability to quickly respond to environmental changes and continuously improve its operations. Therefore, it can be said that the level of DM is defined by the accumulated digital potential of PEs, which in turn determines the future digital transformation strategy of the company, particularly its logistics activities, and the effectiveness of that strategy.

The main goal of increasing the DM of PE logistics activities is to create additional value for the customer by improving the physical availability of medicines at the right place and time, enhancing the quality of logistics services, reliability, timeliness, and uninterrupted fulfillment of orders, reducing the risks of poor order execution, increasing



transparency in the activities of participants in the pharmaceutical supply chains, and fostering sustainable partnerships between them, among other objectives.

It should be noted that carrying out the evaluation of the DM provides the PEs with the opportunity to obtain specific advantages on the path of digital transformation of logistics activities, in particular: it allows a reasoned approach to the determination of the desired level of the DM; to formulate recommendations for choosing a strategy for the digital transformation of logistics activity, based on the conditions and features of a specific PEs and the calculated integral indicator of the DM level of the PE logistics activity; determine the unused reserves of the digital potential of the PEs, etc.

The algorithm proposed by the authors for evaluating the DM of the logistics activity of the PEs is shown in Figure 1.

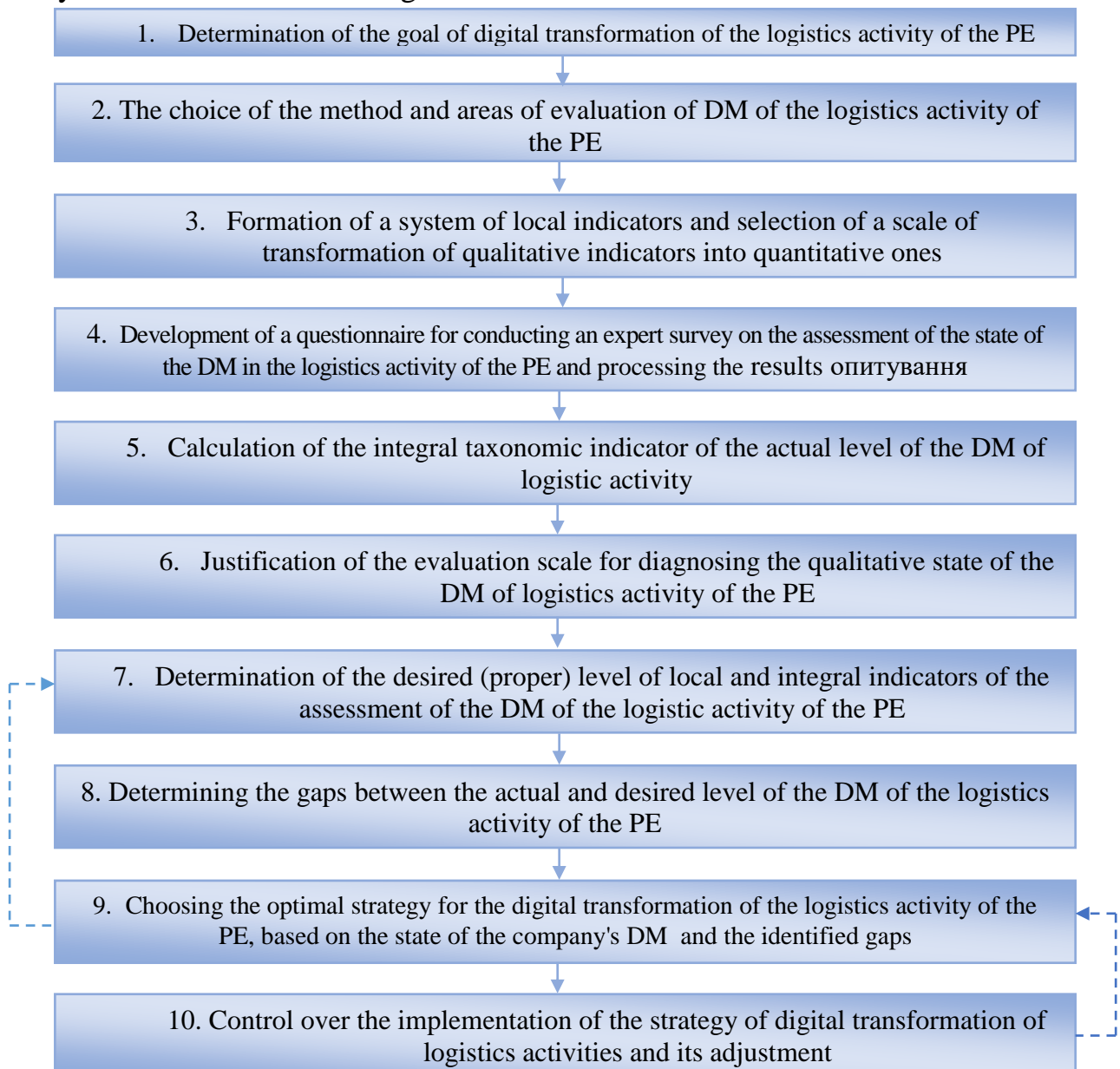


Fig.1: The proposed algorithm for evaluating the DM of the logistics activity of the PE

*Source: generated by the authors*

For the purpose of practical application of the given algorithm, we will consider in more detail the content of its stages.

Based on literature data [9; 28-29], the main factors that directly affect the success of the digital transformation of the logistics activity of the PEs are identified, in particular: digitalization strategy, digital competence of personnel, organizational culture, DT, organization of sales activities, organizational structure of digital management. Therefore, in order to assess the level of DM of the logistics activity of an enterprise, first of all, it is necessary to assess the presence of a digitalization strategy at the enterprise and the degree of its integration with the logistics strategy.

Next, it is necessary to form a list of local indicators that are appropriate to use for assessing the DM of the logistics activities of the PEs. It should be noted that the selection of indicators is one of the most crucial stages of the proposed algorithm, as the accuracy and completeness of the DM assessment of the company's logistics activities depend on the comprehensiveness and rationality of this list. The list of indicators selected during the first stage of filtering, based on a previously conducted content analysis, served as the foundation for the developed questionnaire. For the subsequent filtering of the selected indicators, experts such as scientists, managers, and specialists from logistics departments of the PEs were involved.

According to the results of experts' evaluations, indicators were selected, the average rating of which has the largest number of points within each direction of research.

In order to form the final list of evaluation indicators of the DM of the logistics activity of PEs, the pairwise correlation coefficient was calculated at the next stage. Indicators with a pairwise correlation coefficient of more than 0.9 were excluded from the list. Values of pairwise correlation coefficients that are close to unity indicate the presence of a strong relationship between the indicators and the probability of the occurrence of the autocorrelation effect. Values close to zero indicate either the absence of any relationship, or the absence of a relationship of the type for which the corresponding coefficient was developed [24].

Subsequently, on the basis of the calculations, the values of the weighting coefficients were determined for the indicators characterizing the level of the DM of logistics activity of the PEs.

The formed list of indicators for evaluating the DM, which reflects the specifics of the logistics activity of the PEs, includes:

1. According to the direction (component) of the evaluation of DM "Strategy": the presence of a clearly formulated digital strategy; the level of staff awareness of the digital strategy and its goals; taking into account the logistics component in the digital strategy, which involves the use of digital logistics tools, etc.

2. According to the direction (component) of the assessment of DM "Personnel": the level of implementation of measures for the development of digital skills and abilities

of logistics personnel; proficiency level/proportion of employees with basic skills in the application of DT.

3. According to the direction (component) of the evaluation of DM "Organizational culture": the level of coordination and interaction of management levels during the digital transformation of logistics activities; availability of measures to overcome (prevent) employee resistance that arises in the process of digitalization of logistics activities of the PEs; the level of inconsistency of the digital competence of employees with the tasks performed, etc.

4. According to the direction (component) of the assessment of DM "Digital Technologies": the level of providing the enterprise with computers and other equipment necessary for the digitalization of logistics processes; the level of implementation of effective modern security systems for ensuring the cyber security of the PEs; the level of use of technologies of automated vehicles and drones, sensors and sensors that monitor the movement of pharmaceutical products online, etc.

5. According to the direction (component) of the evaluation of the DM "Sales Logistics": the presence of a modern interface of the PE website, the use of SEO-optimization technologies; level of use of digital distribution channels of pharmaceutical products; the availability of an application for mobile devices to improve the efficiency of work with PSC participants, etc.

6. According to the direction (component) of the assessment of the DM "Structure": the level of flexibility of the organizational management structure and its ability to adapt to changes occurring in the external environment of the PEs (including changes related to digital transformation); the level of use of modern architectures (API, cloud, etc.) to increase the speed and flexibility of PE work; the presence of a position or department in the structure of the PEs, which are assigned the functions of digital management, etc.

A three-level scale was used to transform the experts' qualitative assessments (answers) into quantitative indicators of the evaluation of the DM logistics activities of PEs, according to which: a high assessment is equal to 1.5 points; an average grade is 1 point; a low score is 0.5 points.

At the fifth stage, an integral taxonomic indicator of the actual level of DM of the logistics activities of the PEs was calculated using the Statistica software package.

Next (at the sixth stage), an evaluation scale was formed to diagnose the qualitative state of the DM of logistics activity of the PEs (Table 2).

At the seventh stage, the desired (proper) level of local and integral indicators of the DM of the logistics activity of the PEs was determined on the basis of a previously conducted analysis of the state of implementation of the DT in the logistics activity of the PEs.

Table 2

The scale of quantitative and qualitative assessment of the level of DM of the logistic activity of the PE

Qualitative evaluation of the integral indicator of the DM	Quantitative assessment of the integral index of the DM	Description of the state of the DM
Low	0-0,25	PE is skeptical of DT and does not consider their impact on logistics activities to be serious enough. The management of the PE investigates only the practice of digital transformation of logistics activities at competitors or other PE.
Satisfactory	0,25-0,50	PE perceives DT very slowly. The process of digital transformation of logistics activity stretches for a long time, and the digitalization itself is quite superficial and does not cover all directions of the logistics activity of the PE.
Average	0,50-0,75	PE supports DT and invests in innovation and digital logistics. The guidance focuses on the implementation of DT, but there is no performance measurement and analysis of these innovations. Also, insufficient attention is paid to planning, development of digital strategy and formation of digital competences of employees.
High	0,75-1	PE uses all the opportunities provided by DT. The process of digital transformation is systemic and covers all areas of logistics activity. Monitoring and evaluation of innovations is carried out, a digital strategy of the PE has been developed.

*Source: elaborated and supplemented by the authors based on [8; 39]*

In the following (eighth stage), the gaps between the actual and the desired level of indicators of the DM logistics activity of the studied PE were evaluated.

At the ninth stage, the priorities for implementing DT in the logistics activities of the PE were determined based on the degree of their DM (see Figure 2). The scheme presented in the figure was constructed based on the proposals of experts from the European Medicines Agency [8; 16] and supplemented by the authors' vision regarding the selection of priorities for implementing DT in the logistics activities of the PE according to the degree of their DM.

The tenth stage involves control over the implementation of the strategy of digital transformation of the logistics activity of the PE and its adjustment.

The results of a preliminary express analysis of the assessment of the implementation of DT in the logistics activities of the PEs, conducted using open information sources and, in particular, the websites of the studied PEs and information provided by the PEs themselves, showed that the studied PEs have already accumulated a certain potential and experience in

the use of DT. This opens up serious innovative perspectives for the further improvement of logistics processes and the creation of conditions for ensuring the reliability, safety and efficiency of the activities of the PSC formed by them.

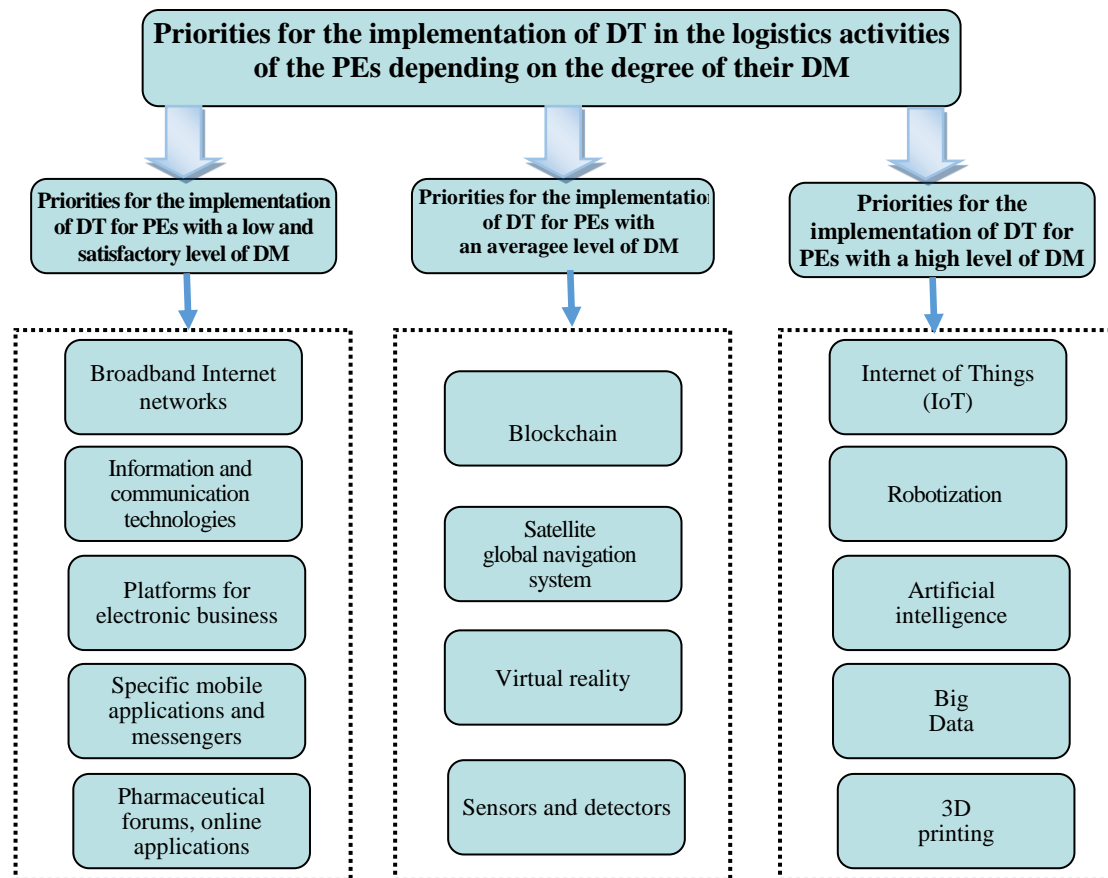


Fig. 2: Priorities for the implementation of DT in the logistics activities of the PEs depending on the degree of their DM

*Source: elaborated and supplemented by the authors based on [8; 16]*

The results of the quantitative assessment of the existing level of digitalization of logistics activities in the studied pharmaceutical enterprises (PJSC "Farmak," PRJSC "PP Darnytsia," and LLC "PC Zdorovye") are presented in Table 3. According to the data provided, the level of local digitalization indicators for the logistics activities of LLC "PC Zdorovye" is significantly lower compared to PJSC "Farmak" and PRJSC "PP Darnytsia" (in almost all areas). The highest level of assessed local indicators is observed in PJSC "Farmak."

Therefore, the analysis shows that the available material, technical, and informational resources for carrying out the digital transformation of logistics activities at the researched PEs are different, and this difference is largely due to the amount of investment in DT and the level of provision of the PEs and staff with digital infrastructure, the level of digital competence of employees, etc.

However, the obtained results do not provide a clearly defined general quantitative assessment of the satisfaction (dissatisfaction) with the level of digitalization of logistics activities in PEs and are insufficient for forming a systemic understanding of the state of DM of a specific enterprise's logistics activities and for selecting further development priorities. The calculation of the mentioned local indicators allows for obtaining only localized comparative information regarding the state of DT usage and does not enable conclusions about the presence or absence of the necessary digital potential for further digital transformation in a specific PE. To achieve a more objective and systemic assessment of the state of DM, various methodologies are employed by foreign researchers and consulting companies [2-4; 12; 17; 20; 41].

Table 3

Assessment of the digitalization level of logistics activities of PEs using traditional local indicators

Indicators for assessing the level of digitalization of logistics activities	PJSC "Farmak"	PRJSC "PP Darnytsia"	LLC "PC Zdorovye"
<b>Digital infrastructure indicators</b>			
Number of computers used in logistics activities at PE per 100 employees, pcs./100 people	37	21	11
Number of specialized programs at PE, pcs.	22	14	13
<b>Material and technical support indicators</b>			
Share of equipment with internet access in the total equipment volume, %	2,58	1,06	0,88
Share of equipment with artificial intelligence in the total equipment volume, %	0,05	0	0
<b>Labor resource indicators</b>			
Share of employees with IT education, %	13,9	8,5	8,1
Share of employees using digital technologies in logistics activities at PE, %	5,6	4,9	4,6
Share of employees who have undergone digital literacy training, %	11,2	6,3	-
<b>Financial indicators</b>			
Share of expenses on digital technologies in the total expense structure, %	7,7	3,4	2,6
Share of expenses on professional development and training employees in digital literacy in the total training expenses structure, %	46,2	63,1	-
<b>Organizational and managerial indicators</b>			
Share of managers with IT education in the management structure of logistics activities at PE, %	6,1	3,5	4,6
Share of digital document flow in the logistics activities of pharmaceutical enterprises, %	38	33	29

*Source: generated by the authors*

Based on the analysis of existing methodologies for assessing DM, it can be concluded that most of these methodologies have a structure that aligns with the

Capability Maturity Model Integrated (CMMI) and allow for the identification of bottlenecks for conducting the digital transformation of the logistics activities of enterprises. However, they also have certain limitations that make them insufficiently effective for diagnosing problems and developing a digitalization growth plan at PEs.

The conducted analysis has demonstrated the necessity to adapt (improve) the existing methodologies for assessing DM specifically for the logistics activities of PEs. The methodology, refined and adapted by the authors, involves determining the level of DM in the logistics activities of PEs across six dimensions: strategy, personnel, structure, digital technologies, distribution logistics, and organizational culture, using a developed system of indicators selected based on a two-stage filtering process.

To interpret the results of the assessment of DM in the logistics activities of PEs based on the calculated integral indicator, a scale has been used that allows for determining the qualitative level of DM (low, satisfactory, average, and high). According to the defined level of DM, an appropriate strategy for the digital transformation of logistics activities can be selected.

The results of the calculation of the integral indicator of DM in the logistics activities of the studied PEs are presented in Table 4.

The assessment of the level of DM in the logistics activities of the studied PEs using the refined methodology allows for the following conclusions: LLC "PC Zdorovye" has a satisfactory level of DM (0.274), indicating that the enterprise realistically evaluates the importance of using DT and their advantages over comparable technologies but is very slow to implement them in its logistics activities. The enterprise dedicates sufficient time and resources to establishing the structure of information communications; however, its digitalization in the area of distribution logistics and operational activities is not sufficiently developed and requires improvement in strategic planning in the context of the development of the digital economy.

The research results indicate that PRJSC "PP Darnytsia" has a satisfactory level of DM, similar to LLC "PC Zdorovye." The calculated value of the integral indicator of DM in logistics activities is somewhat higher compared to LLC "PC Zdorovye" (0.366), but it also indicates limited digitalization of logistics activities, which does not cover all areas of the pharmaceutical enterprise's operations. The enterprise has diagnosed a sufficient level of organizational culture, which suggests that further digital changes will be well-received and resistance from staff will be minimal. More attention should be paid to the development of a digital strategy and its integration with the overall development strategy of the PE. It is also necessary to focus on defining and forming the digital competence and digital literacy of personnel, as well as assessing the prospects for using digital distribution tools.

Table 4

The results of the expert assessment of the DM of the logistics activities of the studied PEs

Elements of PEs	Values for each subsystem		Integral index	
	Calculated value	Level of DM	Calculated value	Strategy
LLC "PC Zdorovye"				
Strategy	0,268	Satisfactory	0,274 Satisfactory level of DM	Activating efforts and attracting the necessary additional resources to accelerate the digital transformation of logistics activities
Personnel	0,289	Average		
Organizational culture	0,364	Average		
DT	0,327	Satisfactory		
Sales logistics	0,241	Low		
Structure	0,374	Satisfactory		
PRJSC "PP Darnytsia"				
Strategy	0,283	Satisfactory	0,366 Satisfactory level of DM	Activating efforts and attracting the necessary additional resources to accelerate the digital transformation of logistics activities
Personnel	0,513	Satisfactory		
Organizational culture	0,427	Average		
DT	0,384	Average		
Sales logistics	0,494	Satisfactory		
Structure	0,428	Average		
PJSC "Farmak"				
Strategy	0,525	Average	0,621 Average level of DM	Adoption of the best global experience in digitalization of logistics activities
Personnel	0,597	Average		
Organizational culture	0,624	Average		
DT	0,561	Average		
Sales logistics	0,496	Low		
Structure	0,518	Average		

*Source: generated by the authors*

Compared to other studied pharmaceutical enterprises, PJSC "Farmak" has an average level of DM in its logistics activities. The enterprise skillfully utilizes the opportunities presented by the implementation of DT, has a digital strategy, and invests in this direction. Certain measures for digitalization can serve as an example for other pharmaceutical enterprises. However, there is also a need to intensify efforts in the area of digital transformation of distribution logistics.

As already mentioned, determining the level of DM in the logistics activities of PEs is necessary for forming a justified and coherent strategy for the digital transformation of logistics activities and for the effective utilization of the resources needed for this (see Table 5).

Table 5



Matrix of suitable strategies for the digital transformation of logistics activities of PEs  
based on the level of the integral indicator of DM

Level of DM	Characteristic behavior	Strategy	Range of change of the integral indicator of DM
High	PEs demonstrate mastery in digitalization	Development and implementation of an innovative strategy for the digital transformation of logistics activities	0,75-1
Average	PEs implement DT	Adoption of best global practices for the digital transformation of logistics activities	0,50-0,75
Satisfactory	PEs are exploring digitalization	Activating efforts and attracting the necessary additional resources to accelerate the digital transformation of logistics activities	0,25-0,50
Low	PEs ignore digitalization	Local implementation of digital technologies in the logistics activities of PEs	0-0,25

*Source: generated by the authors*

Despite numerous studies [10; 31; 35; 42] on the issues of digital transformation in enterprise activities, its practical implementation remains quite problematic. Problems arise both in the construction of a theoretical and conceptual basis for the mechanisms of developing a digital strategy for the enterprise and in assessing its DM. In particular, significant issues exist regarding the selection of factors for digital transformation to evaluate its effectiveness and the consideration of industry-specific features.

The analysis of the state of DT implementation in the logistics activities of the studied domestic PEs has led to the conclusion that a certain potential and experience in utilizing digital technologies in managing logistics activities have already been accumulated in the domestic pharmaceutical industry, indicating that stakeholders recognize the importance of leveraging the advantages of digital transformation.

It has been established that the analysis and diagnosis of the level of DM in the logistics activities of PEs in Ukraine are currently not being conducted, as there are no methodologies adapted to the specific nature of logistics activities in the pharmaceutical sector. This lack of similar studies makes it impossible for PEs to form a justified and coherent strategy for the digital transformation of their logistics activities and to effectively utilize the necessary resources.

Based on these considerations, the authors have developed and elaborated methodological approaches for assessing the DM of logistics activities in PEs. The proposed methodology takes into account the features of managing logistics activities

in the context of digitalization and allows for abstraction from the specifics of organizing logistics business processes across different PEs. A key feature of this methodology is that, unlike most other methodologies aimed at assessing the overall DM of enterprises, it allows for the evaluation of the DM specifically of logistics activities in PEs. Moreover, the methodology includes a structural approach to evaluating digital transformations and is sufficiently comprehensive in covering all aspects of the digital transformation of logistics activities in PEs. In addition to the traditional areas of assessing the DM of enterprises (strategy, personnel, structure, digital technologies, organizational culture) provided in other methodologies, an important component of the proposed methodology is the evaluation of the DM of distribution logistics, which is a critically important process for fulfilling the social function of PEs — ensuring timely access for the population to necessary and quality medicines.

The improved methodology, adapted to the specifics of PE operations, allows not only for determining their DM potential and readiness to implement DT in logistics activities to enhance the reliability, safety, and efficiency of logistics processes for individual PE as well as for the PSC, but also, based on the calculation of an integral (taxonomic) indicator of DM and the proposed qualitative interpretation scale for this indicator, to select an appropriate strategy for further digital transformation of logistics activities that aligns with their potential. This will contribute to increasing the effectiveness of investments directed toward the digital transformation of PE operations.

1. It is justified that the digital transformation of the pharmaceutical industry offers significant economic and social benefits, especially in complex and unstable economic conditions

2. The trends in the development of DT in the pharmaceutical industry have been studied, and their classification concerning the impact on the activities of PSC has been conducted. It has been established that DT significantly enhance the effectiveness of their functioning by influencing the configuration of PSC.

3. An analysis of the state of implementation of DT was carried out on the example of PEs, which have been the leaders of the domestic pharmaceutical industry in recent years. On the basis of the conducted analysis, it was concluded that the leading domestic PEs have already accumulated some experience in the use of DT, in particular: software has been implemented to manage the PE logistics activities; DT is used in working with clients; and other measures are taken to use DT, which demonstrates the PME understanding of the importance of using the benefits of digital transformation.

4. It is substantiated that the evaluation of the level of the DM is a mandatory prerequisite for the digital transformation of the PEs. The existing methods (models)

for assessing the DM of enterprises in the world practice were analyzed, and the need for their adaptation was determined for the purposes of assessing the level of DM of the logistics activity of the PEs.

5. The main areas of assessment of the DM of the logistics activity of the PEs are determined: strategy, personnel, organizational culture, DT, structure, sales logistics.

6. An algorithm for assessing the DM of logistics activities in PEs has been proposed, which is adapted to the specifics of pharmaceutical operations. A system of evaluation indicators has been substantiated and processed using the examples of three domestic PEs that possess sufficient logistical potential and experience in implementing DT.

7. The calculation of the integral indicator of digital maturity in the logistics activities of the studied PEs — PJSC "Farmak," PRJSC "PP Darnytsia," and LLC "PC Zdorovye" — has been conducted. A scale for determining the zones of qualitative assessment of the calculated integral indicator of DM in the logistics activities of these enterprises has been proposed.

8. Based on the quantitative and qualitative assessment of the level of DM in the studied PEs and the determination of the deviation of the actual level of their DM indicator from the desired state, a suitable strategy for digital transformation has been justified for each of the enterprises.

9. The practical significance of the conducted research lies in creating conditions for more effective utilization of resources aimed at improving the logistics activities of domestic pharmaceutical manufacturers, enhancing their competitiveness, and ensuring sustainable development, which is an important factor in improving pharmaceutical provision for the population in Ukraine.

In further research, it is planned to substantiate the mechanism for managing the risks of digital transformation in logistics business processes, develop a methodology for assessing the effectiveness of managing digital risks in the logistics activities of PEs, and so on. This is a necessary condition for forming effective and safe PSC in the context of the unpredictability of changes in the external environment.

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# **CHANGE MANAGEMENT IN INTERNATIONAL SUPPLY CHAINS ACCORDING TO INDUSTRY 5.0 AND SDGs REQUIREMENTS**

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Globalization and the rapid development of technologies, in particular the transition to industry 5.0, have led to a significant complication of international supply chains (ISCs) [1]. At the same time, the growing interest in sustainable development puts new demands on the management of these chains on the basis of logistics. Therefore, there is a need to analyze the challenges and problems that arise in the management of changes in the ISC in the context of achieving the Sustainable Development Goals (SDGs) among Ukrainian companies.

The UN SDGs envisage the achievement of economic growth, social justice and environmental sustainability. Globally, ISCs play a key role in achieving these goals, as they cover the entire product life cycle from raw material extraction to waste disposal.

European industry is a key driver in the economic and societal transitions that we are currently undergoing. In order to remain the engine of prosperity, industry must lead the digital and green transitions. This approach provides a vision of industry that aims beyond efficiency and productivity as the sole goals, and reinforces the role and the contribution of industry to society. It places the wellbeing of the worker at the center of the production process and uses new technologies to provide prosperity beyond jobs and growth while respecting the production limits of the planet. It complements the existing "Industry 4.0" approach by specifically putting research and innovation at the service of the transition to a sustainable, human-centric and resilient European industry [2].

Industries can play an active role in providing solutions to challenges for society including the preservation of resources, climate change and social stability.

According to J. Sunanda the Industry of the Future approach brings benefits for industry and for society. It empowers workers, as well as addresses the evolving skills and training needs of employees. It increases the competitiveness of industry and helps attract the best talents. It is good for our planet as it favors circular production models and support technologies that make the use of natural resources more efficient [3].



Revising existing value chains and energy consumption practices can also make industries more resilient against external shocks, such as Covid-19 crisis or war conflict [4].

Industry 5.0, with its emphasis on human-centricity, sustainability, and resilience, aligns strongly with the United Nations Sustainable Development Goals (SDGs). So, the key alignments are [5]:

- SDG 9 (Industry, Innovation, and Infrastructure): industry 5.0 directly contributes to this goal by promoting innovation, fostering sustainable industrialization, and creating resilient infrastructure;
- SDG 11 (Sustainable Cities and Communities): industry 5.0 can help build smart cities that are more efficient, sustainable, and inclusive;
- SDG 8 (Decent Work and Economic Growth): by emphasizing human-centricity, Industry 5.0 can lead to the creation of high-quality jobs and promote economic growth;
- SDG 12 (Responsible Consumption and Production): industry 5.0's focus on sustainability can drive responsible production practices and reduce waste;
- SDG 13 (Climate Action): industry 5.0 can contribute to climate action by promoting energy-efficient and low-carbon technologies.

Strange R. notes that in the general civilizational context, it is clear that since 2020 the world has faced the opportunities, challenges and imperatives of the fifth industrial revolution. The genesis of the fifth industrial revolution (Industry 5.0) goes back to the end of the 18th century - the beginning of the first industrial revolution (production of mechanical energy from steam), as well as the beginning of the 20th century (use of electricity on assembly lines in Industry 2.0.). From the middle of the 20th century automation tools that partially free people from routine production processes (Industry 3.0) have become widespread, and since the 1970s – network information technologies (Industry 4.0) [6].

Nahavandi S. also emphasizes that with the development of Industry 2.0, the level of negative impact of industry on the environment has increased; Industry 4.0 does not provide adequate protection for it. Therefore, a real transition to sustainable development is expected from Industry 5.0 due to the reduction of waste generation in the bioeconomy, the growth of the role of human intelligence in production, the joint work of people and robots (cobots) [7].

Let's consider different methodological approaches and scenarios for the development of the fifth industrial revolution. However, based only on theoretical ideas, differentiated according to the practical needs of today, it is not possible to clearly and unambiguously define the economic, social and environmental parameters of Industry 5.0. This is due to the variability of views of scientists regarding the essence and features of the modern industry. Therefore, according to study of Longo F.,

Padovano A., Umbrello S. the ambiguity of the definitions of the fifth industrial revolution lies in the fact that Industry 5.0 has such features as [8]:

- industrial evolution, not revolution, which is based on revision, reduction and recycling;
- the development of industry under the influence not of robots, but of human, who transfers not intelligence to production, but creativity;
- emergence of "synergistic plants" remotely controlled by cyber-physical systems (synthesis of artificial and human intelligence);
- a new philosophy of social development in conditions of coexistence of people and machines;
- transition to an industry in which enterprises are managed not by people, but by social networks;
- constant design of reality in which people and technologies mutually complement each other.

The strategy of Industry 5.0 still has a fragmentary character and is manifested only in a number of countries (for example, the European Union program "Industry 5.0", "Made in China-2025" and the Japanese concept "Society 5.0") [9].

Maddikunta P.K.R., Pham Q.-V., Ba P. expect that Industry 5.0 will contribute to solving this problem due to the formation of human-centered innovative technologies [10].

Leong Y.K., Tan J.H., Chew K.W., Show P.L. claim that Industry 5.0 is comprehensive and universal and has progressive development potential [11].

Industry 5.0 according to sustainable development is still emerging, but here are some specific examples of how it's being applied [12]:

- 1) Human-Centricity: Industry 5.0 prioritizes human well-being by creating collaborative work environments, enhancing worker skills, and promoting work-life balance. This aligns with SDGs related to health, education, and social equity.
- 2) Sustainability: Industry 5.0 emphasizes resource efficiency, circular economy principles, and sustainable production practices. This directly contributes to SDGs related to climate action, responsible consumption, and clean water and sanitation.
- 3) Resilience: Industry 5.0 builds resilient systems that can adapt to changing circumstances, such as pandemics or natural disasters. This aligns with SDGs related to disaster risk reduction and sustainable cities and communities.

Overall, Industry 5.0 represents a significant opportunity to drive sustainable development and contribute to the achievement of the SDGs. By embracing human-centricity, sustainability, and resilience, industries can create a more equitable, prosperous, and environmentally friendly future. At the same time we should consider

some challenges: technological barriers (implementing Industry 5.0 technologies can be costly and complex), skill gaps (there is a need to upskill and reskill workers to adapt to the new technological landscape), data privacy and security (ensuring the security and privacy of data generated by Industry 5.0 systems is crucial), ethical considerations (addressing ethical concerns related to the use of AI and automation is essential), infrastructure (developing the necessary infrastructure to support Industry 5.0 can be a significant challenge), global collaboration (international cooperation is needed to ensure a coordinated and equitable approach to Industry 5.0 implementation) [13].

Industry 5.0 has the potential to revolutionize manufacturing and drive sustainable development. By addressing the challenges and embracing the opportunities, we can create a future where technology and human ingenuity work together to build a better world.

The methodology of the study of Industry 5.0 in the context of achieving the goals of sustainable development in the field of international logistics, as a relatively new direction, is interdisciplinary in nature and involves the analysis of economic, social, informational and environmental globalism differentiated by the tools of analysis.

It is especially important to take into account the scope and dynamics of the process of formation of a system of global resource management and income redistribution during this study.

Industry 5.0 becomes, on the one hand, a source and stimulator of competition, providing new opportunities for development, and on the other hand, it creates contradictions and challenges of a local and civilizational scale.

In our opinion, in theoretical and methodological terms, there is a systematic asymmetry of socio-ecological economic development, caused by the growing interdependence between economic entities of the macro- and micro-levels.

A systematic study of the origins and manifestations of the fifth industrial revolution in the field of international supply chains involves the analysis of the main trends that characterize Industry 5.0.

In order to solve problems and explain the scientific phenomenon of Industry 5.0 an empirical hypothesis is formulated, which is a "working hypothesis". It has been verified through observation and an online survey.

This is an explorative and descriptive research study. This research paper primarily draws on secondary source for collection of data. The applicable information for the paper was derived from diverse publications, namely, research papers, blogs, online reports, etc.

Industry 5.0 is the next stage of development of smart manufacturing after Industry 4.0 and a new phase of industrialization, where the focus shifts from the

aspects of digital technologies to the factors of sustainable development, circular production and strategic management (Fig. 1).

The challenges of managing changes in the ISCs in the context of achieving the SDGs are: reducing the carbon footprint, preserving biodiversity, fair working conditions, fighting poverty, reducing inequality, etc. [14].

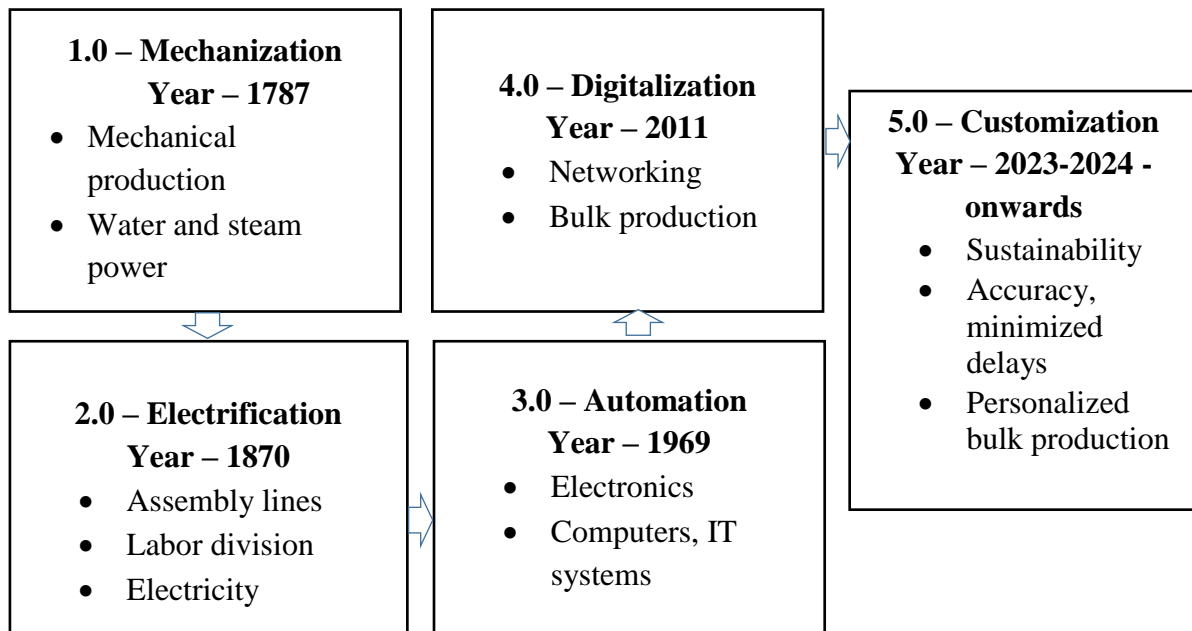


Fig. 1. Industry Revolution from 1.0 to 5.0 [15]

The five main drivers of change typically include [16]:

1. Technological advances: developments in technology often necessitate changes in processes, products, and strategies.

2. Market dynamics: changes in consumer preferences, competitive forces, or market conditions can drive change.

3. Regulatory and legal changes: new laws or regulations may require changes in operations or business practices.

4. Economic factors: changes in economic conditions, like a recession or economic boom, can drive change.

5. Social and environmental factors: shifts in societal values or environmental concerns can also necessitate change, such as the increasing focus on sustainability.

The main trend of Industry 5.0 is the introduction of a joint working environment of human and robot, as well as the creation of a smart society.

Industry 5.0 is based not only on technology, but also on such principles as human-centeredness, environmental protection and social benefit. This reorientation is based on the notion that technology can be adapted to promote values, and that technological innovation can be based on ethical goals rather than the other way around.

With the right mix of automation and human involvement, Industry 5.0 helps provide the customer with the right products and services that meet their specific requirements.

The introduction of AI, 3D printing, virtual reality and adaptive manufacturing, which are part of the current industrial revolution, realize the concept of personalizing products and services according to the requirements of customers or enterprises, allowing the industry to follow the correct production process.

Advanced manufacturing capabilities help make manufacturing processes more automated and allow products or services to be more personalized and customizable, which is based on the concept of "freedom of design."

This new revolution, with the introduction of new and advanced technologies, helps production processes in ISCs and society to produce more specialized, personalized, individual products and services with better working conditions, using interactive interaction between human and machine.

Among the key advantages of Industry 5.0, the following are highlighted [17-18]:

- Collaboration between humans and machines. Unlike Industry 4.0, which focused on complete automation, Industry 5.0 emphasizes the importance of collaboration between humans and robotics. Robotic systems are becoming more adaptive and flexible, able to work alongside humans without risking safety.

- Sustainability and responsibility. Industry 5.0 emphasizes the need for responsible use of resources and sustainable development. This means not only minimizing the impact on the environment, but also developing products that can be reused or recycled.

- Personalization of production. Thanks to technologies that allow rapid reconfiguration of production lines, Industry 5.0 enables the mass production of personalized goods. This not only increases consumer satisfaction, but also opens up new opportunities for niche marketing.

- Use of Big Data and AI. Data and artificial intelligence continue to play a key role in Industry 5.0, allowing not only to optimize production processes, but also to predict market trends and adjust production to consumer needs.

A key benefit of Industry 5.0 is the creation of higher-value workplaces that provide greater personalization for customers and improved design freedom for employees. By automating production processes, workers can focus more of their time on providing improved, personalized services and products.

This already started with Industry 4.0, but Industry 5.0 takes it even further with improved automation and feedback to create a service-based model where people can focus on adding value to end users.

Businesses are becoming nimbler and more flexible, and have a positive impact on society, rather than simply mitigating any negative impacts. Our research shows

that according to TOP management representatives of Ukrainian companies the main benefits of implementing the integrated principles of SDGs in Industry 5.0 are: clever use of data, automation of processes, elimination of waste, socially conscious behavior, SDG achievement, resilience, better communication within ISC (Fig. 2).

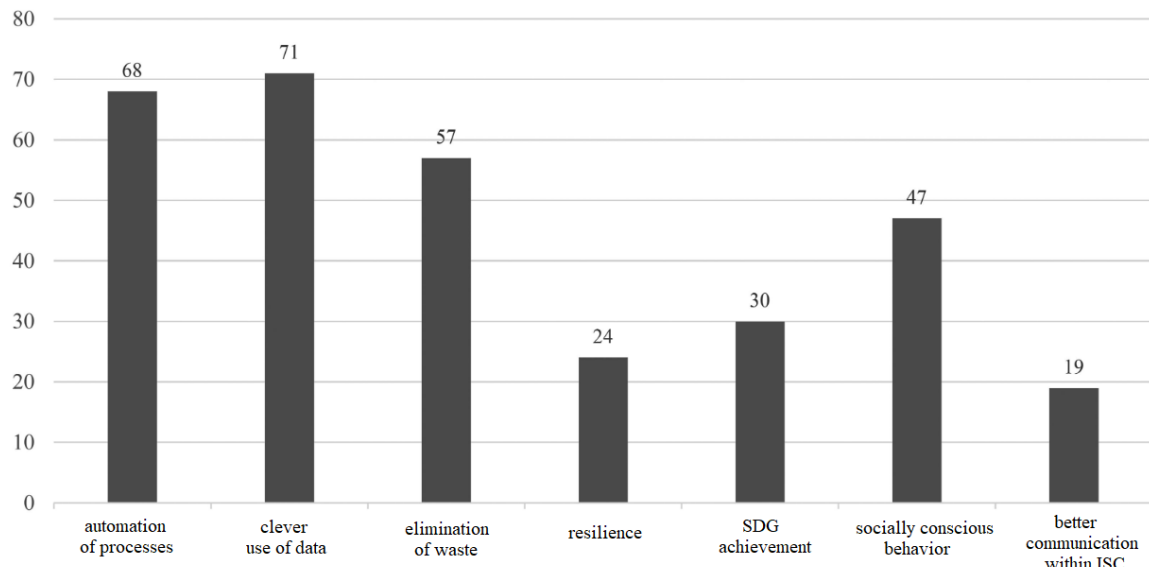


Fig. 2. Distribution of answers of the TOP management of Ukrainian companies regarding the benefits of implementing the integrated principles of SDGs in Industry 5.0 (up to 3 most relevant responses could be chosen in the questionnaire)

*Source: own research*

Despite the numerous advantages, Industry 5.0 also faces challenges. The most important of them is the need to develop skills among the workforce, because cooperation with intelligent machines requires new knowledge and skills. In addition, data privacy and security issues remain relevant due to the increasing use of digital technologies.

However, the opportunities that emerge with the advent of Industry 5.0 outweigh these challenges. From personalized medical devices to environmentally friendly manufacturing processes, the potential for innovation is enormous. Above all, the upward integration of man and machine promises not only to increase productivity, but also to make the workplace safer.

Industry 5.0 is not just the next step in the development of technology, it is a new paradigm that reflects a change in our attitude to work, production and the world around us. It promises not only technological innovation, but also a deeper harmony between human needs and the possibilities of technology.

Accordingly, we can consider the problems associated with the change management in ISCs:

1) complexity and scale of ISCs (a large number of participants, geographical dispersion, diversity of cultures and regulatory requirements);

2) resistance to change (conservatism of participants, fear of the unknown, short planning period);

3) lack of a unified understanding of sustainability and circularity principles (different interpretations of the SDGs, lack of agreed metrics and KPIs);

4) technological barriers (high cost of innovations, insufficient integration of information systems);

5) lack of transparency of supply chains (difficulties in monitoring the impact on the environment and social aspects).

The ways to solve the mentioned problems are to ensure effective cooperation of all ISCs participants by creating joint e-platforms for information exchange, development of joint strategies for sustainable development, risk management; investing in innovation (development of new technologies to reduce harmful impact on the environment, implementation of data-based supply chain management systems); increasing transparency (using the blockchain to track the origin of goods, publishing sustainability reports); development of human capital (training of employees in the principles of sustainable development, improving the qualifications of managers in the field of change management); creating a favorable regulatory environment by developing incentives for the introduction of environmentally friendly technologies, harmonizing national and international standards.

We are particularly interested in stimulating research that demonstrates how recent technological advancements can be harnessed to realize the principles of net-zero economy, social justice, EDI, and/or responsible data science, thereby shaping a better future for our society. The following examples represent some of the topics of interest, although this list is not exhaustive:

1. Sustainable warehousing: Optimizing energy consumption and waste management in Industry 5.0. For example, how Industry 5.0 technologies can be leveraged to create energy-efficient and environmentally sustainable warehouses. It may focus on strategies and/or frameworks for resource optimization, waste reduction, and implementing circular economy principles;

2. Net-zero transport: Advancing sustainable solutions in intelligent transport systems. For example, how Industry 5.0 technologies can contribute to a net-zero economy in the transportation sector by employing better human-machine collaboration. It may explore innovative approaches, such as AI-enabled traffic management and electric and autonomous vehicles, to reduce fuel consumption, emissions, and traffic congestion.

- Sustainable production and supply chain. Maximizing the use of material and creating zero waste in production. For example, how Industry 5.0 technologies can help to coordinate the whole supply chain to minimize the use of raw materials and achieve net zero. It explores the

strategies and/or framework for production/logistics/supply chain processes optimization, waste/carbon emission reduction technology, and collaborative product design.

3. Ethical decision-making: Responsible for data science and AI in logistics and operations. It may focus on the development of ethical AI algorithms and transparent decision-making processes in Industry 5.0. It examines the strategies and/or framework of human-machine collaboration to address biases, ensure data privacy, and incorporate ethical considerations in logistics and operational decision-making.

4. Inclusive workforce: Promoting social equity through human-machine collaboration in logistics. For instance, how Industry 5.0 can foster social justice by creating inclusive work environments and equal opportunities using human-machine collaboration. It can investigate the role of remote operation technologies, adaptive interfaces, and skill development programs in bridging workforce disparities in operations and logistics.

5. Optimizing the EDI-embedded work environment in Industry 5.0. For example, it may focus on promoting EDI principles through human-machine reconciles in Industry 5.0. Furthermore, it can explore how technology can enable equal opportunities, accessibility, and participation for people with diverse abilities, older adults, and marginalized groups in the context of logistics and operations.

6. Enhancing social work practices: Human-machine collaboration in Industry 5.0. For instance, how Industry 5.0 can support social work initiatives through human-machine collaboration. It examines the role of AI-powered tools and platforms in improving service delivery, data-driven decision-making, and remote assistance for social workers in the context of logistics and operations.

7. Securing Industry 5.0: Addressing cybersecurity challenges in logistics and operations. For instance, it may investigate the cybersecurity risks and vulnerabilities associated with Industry 5.0. It can examine strategies and/or frameworks with human-machine reconciles to protect data, systems, and critical infrastructure, ensuring robust cybersecurity frameworks in logistics and operations.

- Integrating human factors into operations and organizational performance management in the transition towards Industry 5.0. For instance, how to design and launch the human-machine interaction initiatives and strategies of workforce diversity, empowerment, equality and inclusion to achieve superior organizational performance. It can examine the effect of this human- and value-centric paradigm in Industry 5.0 on organizational performance, such as operational efficiency and resilience, sustainable productivity and innovativeness, in the context of logistics and operations.



8. Production scheduling in Industry 5.0: developing efficient production scheduling methods to enable human-machine collaboration in Industry 5.0. For instance, how to schedule production tasks for machines and workforces to maximize production efficiency and worker satisfaction. It can explore production scheduling solutions to achieve objectives including, but not limited to, production efficiency enhancement, worker well-being promotion, production resilience, and flexibility, agile and real-time responses, and other society- or ecosystem-oriented goals.

9. Resilience and Risk Management in Industry 5.0: Exploring how human-machine collaboration can enhance the resilience of logistics and operations against disruptions such as supply chain interruptions, natural disasters, and global pandemics.

10. Customization and Personalization in Supply Chain: Examining how human-machine collaboration can drive customization in the supply chain to meet specific customer demands. This could include the use of AI and robotics in creating personalized products and services while maintaining operational efficiency.

- Digital Twins and Simulation in Logistics Planning: Exploring the use of digital twins – virtual replicas of physical systems – in optimizing logistics and operational planning. This topic could cover how simulations can aid in decision-making and scenario analysis in complex supply chains.

So, it is reasonable to use various rigorous methodological approaches, such as mathematical modeling, computer simulation, data-driven modeling, algorithmic decision-making, online learning, reinforcement learning, machine learning for causal inference, econometrics with secondary data, controlled laboratory experiments, field experiments, large-scale surveys, case studies, operations research studies, and more.

In this study, the peculiarities of the functioning of modern international supply chains are determined and the requirements for them are formulated according to Industry 5.0 and the Sustainable Development Goals (SDGs). It presents unprecedented challenges and opportunities for international supply chains. That's why successful change management is crucial to navigate this complex landscape and ensure the long-term viability and sustainability of these networks.

Successfully integrating Industry 5.0 technologies and practices with SDG principles is essential for building resilient, sustainable, and human-centric supply chains. A collaborative approach involving all stakeholders, including suppliers, manufacturers, distributors, and customers, is vital for effective change management. Leveraging digital technologies, such as AI, IoT, and blockchain, can streamline processes, improve visibility, and enhance decision-making in supply chains. Embracing sustainability as a core value throughout the supply chain can lead to reduced environmental impact, improved social responsibility, and enhanced brand reputation. Robust risk management strategies are crucial to mitigate disruptions and

build resilience in the face of unforeseen challenges. A culture of continuous learning and adaptation is necessary to stay ahead of evolving trends and emerging technologies.

Based on this, the following recommendations are appropriate:

- develop a comprehensive change management strategy – create a well-defined change management strategy that aligns with the organization's overall business objectives and sustainability goals;
- invest in workforce development – provide training and upskilling opportunities to equip employees with the necessary skills to navigate the complexities of Industry 5.0 and sustainable supply chains;
- foster strong partnerships – build partnerships with suppliers, customers, and other stakeholders to collaborate on sustainable initiatives and share best practices;
- measure and monitor progress – establish key performance indicators (KPIs) to track progress towards sustainability goals and make data-driven decisions;
- embrace innovation – encourage innovation and experimentation to identify new solutions and opportunities for improvement.

By adopting these conclusions and recommendations, organizations can successfully navigate the challenges of Industry 5.0 and the SDGs, creating more sustainable, resilient, and human-centric international supply chains.

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# **INTERNATIONAL BUSINESS INNOVATIONS IN MARKETING AND LOGISTICS AS A RESPONSE TO GLOBAL CHALLENGES**

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In the new millennium of geopolitical upheavals, businesses are compelled to adopt a broader vision of their role within industrial and consumer markets, as well as the evolving behavior of consumers and industry trends. Businesses need to make significant efforts to develop innovative solutions to address the fundamental discrepancies between the nature of global challenges and real actions in the fields of marketing and logistics to respond adequately.

Practice outpaces theory in the applied aspects of enterprises adapting to contemporary challenges and implementing digital transformation processes. These processes are associated with the functional overhaul of businesses under strict constraints on critical resources, as well as the search for potential new sources of value creation and societal benefit. In the 21st century, informational resources have emerged as a powerful production factor, driving market research and the activities of global players within them.

Innovative tools and the international transfer of technologies have led to the emergence of a qualitatively new socio-economic and communicative environment. This environment includes diverse stakeholders for funding research and development (R&D), expands the number of entities managing innovative development, and reshapes the roles of key players in marketing and logistics. It also affects their rankings in high-tech markets amid the digitalization of global economies.

The challenges of developing sustainable business models are particularly pressing under force majeure circumstances.

For marketers and logisticians, understanding the imperatives of innovation and innovative approaches adopted by 21st-century organizations is crucial. This includes understanding the directions of functional transformations in current organizational structures and networks, which are interconnected by various nodes, such as political-legal and contractual obligations, including investment commitments – especially after transactions like buyouts, mergers, and acquisitions (M&A).

Particularly relevant are issues concerning the influence of driving forces on business development and the growth of its value. The inherent multi-optionality of economic development diversifies metrics for managing marketing and logistics, as the tasks of forming active marketing strategies evolve, especially when the prospects of capital reproduction depend on the intellectual potential and initiative of the producer.

Technological business innovations possess varying life cycles, determining the dynamics of competitive advantages across industries and innovative projects. Emerging technologies, such as Robotic Process Automation (RPA), virtual reality (VR), and blockchain, even in their nascent stages, have begun transforming sectors like manufacturing, healthcare, transport, and logistics. These technologies influence business operations, reshape spatiotemporal coordinates of value creation, and redefine alignment with societal values during the implementation of socially-oriented, community-focused, or innovative marketing principles.

The current structure of logistical and marketing assets, as well as the constraints imposed on achieving strategic goals of innovative development, reflects not only external factors but also the intellectual level of management and its agility in unpredictable situations. Practical interest lies in new approaches to the influence of logistics communications on enterprise investment activities in the context of capital movement [1].

In the context of the digitalization of global economies, the range of objects for managing a company's innovative development and its business units expands to include:

- Development Criteria: Systems based on value- and cost-oriented management approaches.
- Smart Specialization Levels: Deciding between developing logistical and marketing outsourcing processes or dismantling traditional value chains through partnerships.
- Human Capital Value: Motivation systems for productive intellectual work and indicators of employees' quality of life.
- Business Risk Assessment: Analyzing the structure of assets and liabilities.
- Core Competencies of Enterprises: Including IT technologies, informational resources, e-business, innovation, technological expertise, experience, and patent activity.
- Customer Potential and Competencies: Strengthening customer relationships and loyalty.
- Trade Collaboration Forms: Enhancing loyalty through effective partnerships.
- Environmental Requirements and Constraints: Addressing ecological regulations.

- Governmental Preferences: Leveraging state support for strategic initiatives [2, 3].

The functional reboot of businesses occurs during a recession when capital is depleted, and opportunities to attract external financing, including venture capital, are limited, alongside restrictions on paying technical workers in high-tech industries. In 2023, technology companies worldwide laid off over 260,000 employees [4]. The primary reason for such layoffs was the reassessment of their strategies in forecasting growing demand for digital services, taking into account market conditions during the Covid-19 pandemic.

According to Jonathan Z. Zhang and George F. Watson [5], companies' strategies should be developed through the lens of a marketing ecosystem that accounts for interrelated and dynamic megatrends, fostering ecosystem thinking and collaboration with various stakeholders when creating innovative ecological solutions [6].

Similar issues are explored in the research of Vekić A., Borocki J., and Dordić K., which highlights the development of business relationships with startups at different stages of their operation [7]. Ecosystem marketing is crucial for "selling" the ecosystem to international workers. A successful example is the La French Tech state initiative, aimed at creating a unified brand for French startups, making them more recognizable abroad.

The purpose of this study is to analyze the impact of strict limitations on critical resources in technology companies and their choice of priority directions for innovation in consumer and industrial markets. This necessitates technology transfer, the formation of sustainable business models, and the search for new sources of value creation and societal impact over the long term.

The research used the methods of PESTEL- analysis, marketing analytics, methods of factor analysis and graphic methods. Their combination makes it possible to identify the key issues related to the creation of conditions for the development of international business innovations, taking into account the risks in the innovative activities of technological companies in conditions of market uncertainty.

Due to the effects of global conflict, supply chain disruptions, the European energy crisis, inflationary pressures, and rising interest rates, uncertainty and instability have increased in markets, including in the selection of innovation-investment projects and funding targets. This is evidenced, in particular, by the decrease in venture funding for innovation-active startup companies since early 2022 [8]. Venture capital investors are increasingly focusing on smart specialization policies and providing seed funding, as they seek innovations in new startups [9, 10]. In North America in 2023, early-stage financing saw a decline of 26% – the steepest drop across all regions. Here, a large

percentage of mature ecosystems exist, leading investors to prefer funding well-known companies rather than taking risks on new startups.

Innovation activities of startup companies and collaboration with them make it possible to enhance the elasticity of production resources. Based on the analysis of innovation-related issues in the U.S. industrial sector [11], changes in technology are examined using the Fechner-Thurstone production function (GFT) with four patent variables: the number of patent applications, the total number of granted patents, unsuccessful patent applications, and granted foreign patents. This approach assesses the elasticity of resources through the technical substitution of various means of production.

The analysis showed that issued foreign patents were the most effective in terms of elasticity growth. For example, in Amazon, out of 32,328 patents worldwide, only 25,362 patents are active, or 78% (compared to 3,260 patents filed by the company in 2014 and 284 in 2023) [12]. For IBM in 2023, out of 122,110 patents, 72,696 patents are active (or 59%) [13]. This shows that readiness of clients to consume innovative products in international business is a significant factor in increasing the patent activity of innovators (see Fig. 1).

Uncertainty in the global technology business remains high, as it's unclear how progress in artificial intelligence (AI) will impact layoff trends in the technology sector and the optimization of supply chains in global markets [14]. Under pressure from force majeure circumstances (such as the pandemic, the Russian war against Ukraine, the environmental crisis, etc.), non-traditional suppliers from the country's defense sector are rapidly developing, promoting innovative products in global and commercial markets. Global marketing cannot advance without effective interaction with international logistics.

Commercial product manufacturers use their own global supply chains and operational scale and have become major suppliers of military and dual-use products:

- Global IT equipment companies, like Cisco, have replaced traditional defense suppliers, especially for network servers, which are usually configured with additional memory and capacity to handle customer service loads.
- Commercial truck manufacturers, such as Navistar and Oshkosh, have increased their economic growth rates due to defense procurement, sometimes outperforming suppliers of outdated protective equipment.
- Commercial IT and service companies that don't necessarily report business units in defense markets can still earn over \$1 billion [15].

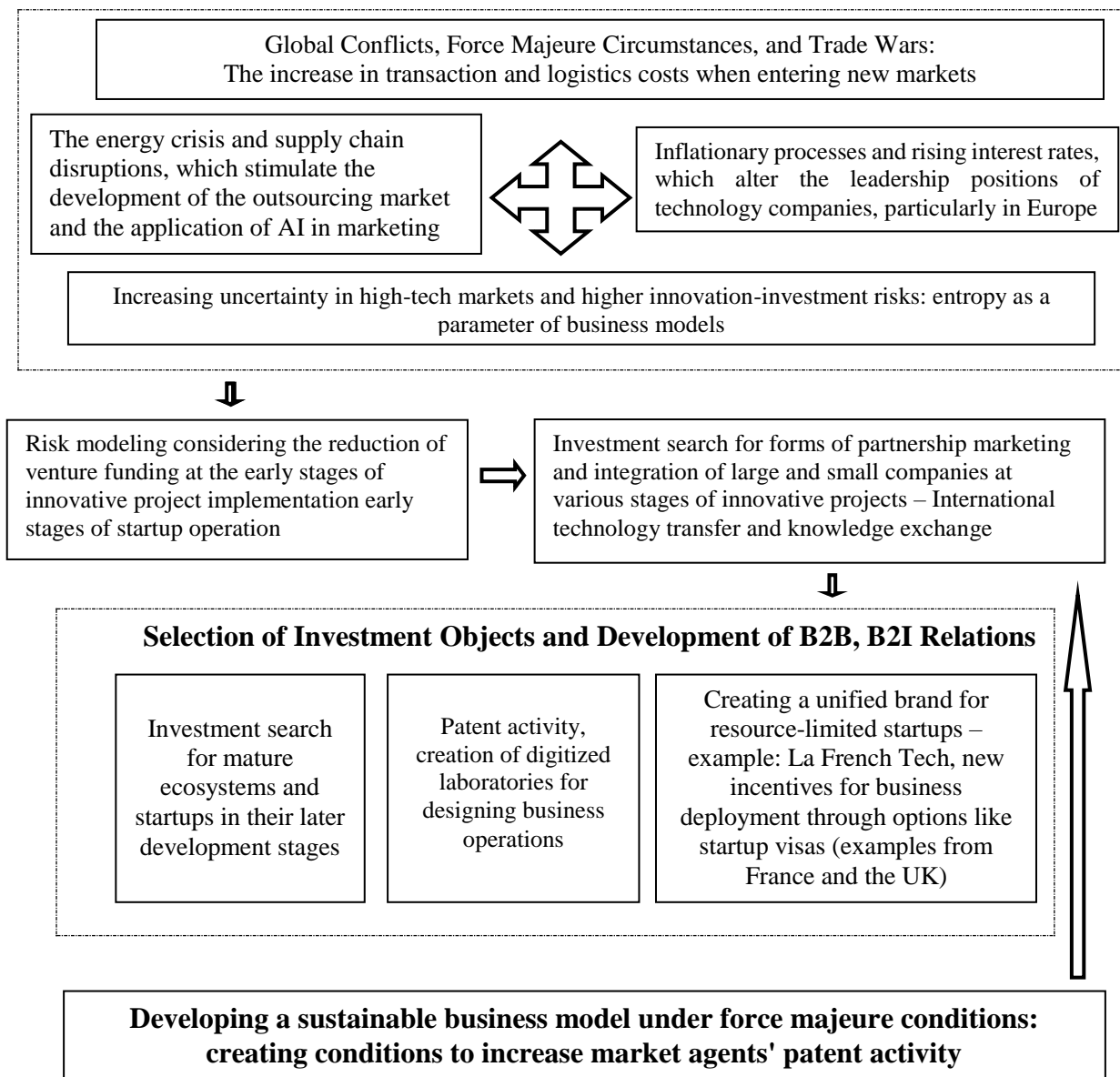


Fig. 1. Developing a sustainable business model under force majeure conditions as a response by enterprises to modern challenges

*Source: constructed by the authors*

The duration of the business and strategic innovation project cycles depends on how effectively the components of the industrial base, which are not sustainable in terms of added value and potential value, are identified – especially where new technology undermines the roots of the old economy and the reproduction of capital (investment, human, and intellectual). Digitization in various spheres of life in the 21st century enables control over marketing, cost and result centers, capital freeze areas, communication, and the operation of global material-financial flows. However, the modern world is experiencing deep systemic crises, accompanied by a rise in loss-making global companies in consumer, industrial, and financial markets, with unpredictable environmental and social consequences due to the high rates of



uncontrolled exploitation of natural resources by the state and society, and the constant increase in demand for material resources [16].

The fully digitized Emerald Cloud Lab laboratory offers access to over 200 instruments, all fully managed and automated by software, allowing scientists to design, conduct, and analyze experiments remotely from anywhere on Earth. Company leaders around the world (over 1,000 top managers participated in the survey) place great hopes on breakthrough innovations in the next 35 years, with most seeing the highest value not so much in technological innovations, but in innovations that have a social and economic impact on significant portions of the world's population [17].

Many low-tech industries, such as printing and beverages, have achieved moderate growth. Meanwhile, high-tech industries, currently facing intense competition, are seeking innovative solutions, particularly in the automotive market (see Fig. 2).

Major automobile manufacturers have registered significant production declines, including those in China, Japan, and Germany, as they face global challenges in an environmentally-oriented economy. The shift towards producing electric motors and other new technologies, along with companies' ambitions to reduce emissions, will shape the future of the sector in both the short and long term.

Global industrial production shows diverse growth patterns: a decrease in manufacturing activity in high-income industrialized countries, while a group of mid-income industrial economies (including China) has achieved production growth. Current trends in industrial production indicate a possible convergence process underway. Industrial countries with developing economies (a group of low- and middle-income countries) have demonstrated significant dynamism in recent years due to technological development.

The sharp increase in energy prices in 2022 due to the war in Ukraine had a significant negative impact, particularly on Siemens' energy-intensive production facilities. Siemens is a global leader in engineering, electronics, and advanced technologies [18]. The surge in inflation prompted the European Central Bank to raise the base interest rate to 4.5%, affecting investments in fixed assets.

While Europe has the largest government R&D spending, its private R&D investment accounts for only 19% of the global total, lagging behind China's 24% and the U.S.'s 28%. Europe (EU members) lacks the dense American venture capital network for funding new innovative projects, as institutional investors (pension and mutual funds) are less willing to take on the risks associated with radical innovations [19].

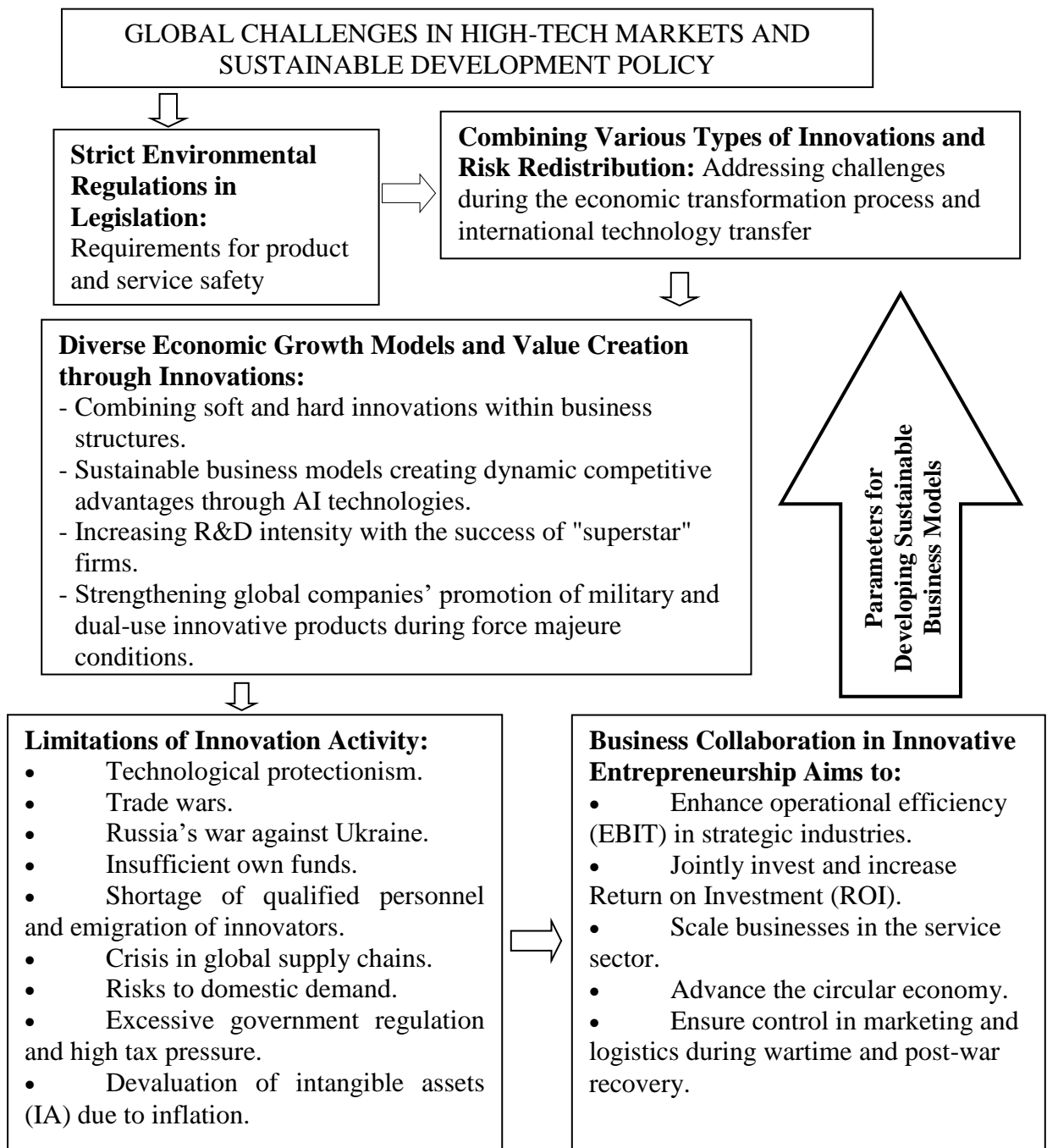


Fig. 2. Search for Sources of Value Creation Based on Innovations and the Development of Sustainable Business Models

*Source: constructed by the authors*

Delegating project management decisions to leading scientists, ARPA (Advanced Research Projects Agency of the U.S. Department of Defense) has helped the government continually foster breakthrough innovations in strategic sectors.

European R&D remains concentrated in the mid-tech range, absorbing over 50% of private R&D (one-third in the automotive industry), although it generates few breakthrough innovations. In the U.S., the investment-innovation priorities and capital

concentrations differ: 85% of private R&D is directed toward more intensive R&D areas with higher returns, such as biotechnology, software, hardware, and AI.

In Japan, automotive giants are expanding into the smart and financial services market. For example, Nissan Motor Co., Ltd., part of the Renault-Nissan-Mitsubishi alliance, offers financial services through its subsidiary, providing auto loans and leases to consumers and financing sales to its dealers. Additionally, the alliance agreement between Nissan and Renault includes cross-shareholding with a 15% voting rights cap for each company. Nissan's ESG principles transform its automotive business. However, credit markets signal growing concern over Nissan's financial position, one of Japan's largest automakers, which announced plans to lay off 9,000 employees and cut one-fifth of its production capacity [20].

The development and implementation of advanced energy storage systems, such as lithium-ion batteries, solid-state batteries, and flow batteries, are trends in the 21st-century innovation economy. The Dogger Bank Wind Farm in the UK, set to become the world's largest, illustrates the rapid expansion and potential of offshore wind energy.

Certain industries closer to consumer spending impact EBIT and ROI metrics more strongly than project-based processing industries. Major car manufacturers, including those in China, Japan, and Germany, reported significant production declines as they face global challenges in the eco-oriented economy. The transition to electric motors and other new technologies, alongside ambitions to reduce emissions, will shape the sector's short- and long-term future.

The global and European automotive industries are undergoing fundamental transformation. For multinational corporations like Volkswagen, this entails increased risks in customer/market areas, technological advancement, and political-legal matters. One risk is the introduction of increasingly stringent emissions and fuel consumption standards from 2025, such as China's C6 or Europe's EU7. Volkswagen's biggest innovation risks stem from its inability to develop products in line with demand and requirements, especially in e-mobility and digitalization. According to the National Highway Traffic Safety Administration, Volkswagen recalled 114,478 vehicles in the U.S. in fall 2024 due to airbag safety issues [21].

Back in 2016, Honda announced its goal to replace two-thirds of its sales with zero-emission vehicles by 2030, including hybrids, fuel cell vehicles (FCVs), and battery electric vehicles (BEVs); in April 2023, the company presented plans to produce over 2 million electric vehicles annually worldwide. Even technology companies like BMW struggle to quickly adapt to stringent vehicle safety standards, recalling nearly 721,000 vehicles in 2024 due to fire hazards. In 2022, Germany invested around 1.5 billion euros in energy sector R&D, driving electric vehicle production. Close collaboration with partners in e-mobility through partnerships and

joint ventures supports technological shifts in developing comprehensive charging infrastructure.

The success of new product and service implementation depends on various factors, including the successful development of a circular economy, market acceptance, and the company’s risk management capabilities. Innovation risks are rising for those who lag as the global economy enters a "superstar" era, with technological companies’ innovation and productivity closely tied to digital technologies. Managers face the necessity of implementing digital technologies and innovations not only for internal but also for external business processes, assessing the restructuring of the production mechanism's original structure, and transitioning its internal structure to a new state regarding products, technology, and production means [22].

The 2024 Digital Economy Report emphasizes the urgent need for ecologically sustainable and inclusive digitalization strategies [23]. The production and use of digital devices, data centers, and ICT networks account for approximately 6% to 12% of global electricity usage, resulting in increased digital waste. E-waste from screens and small IT equipment grew by 30% from 2010 to 2022, reaching 10.5 million tons; environmental harm occurs throughout the entire lifecycle of digital devices and ICT infrastructure, including through e-commerce. Rising demand for data transfer, processing, and storage for new technologies, such as blockchain, AI, 5G mobile networks, and IoT, also increases greenhouse gas (GHG) emissions (see Fig. 3). Hence, the issue of developing a circular sustainable economy based on innovation remains unresolved.

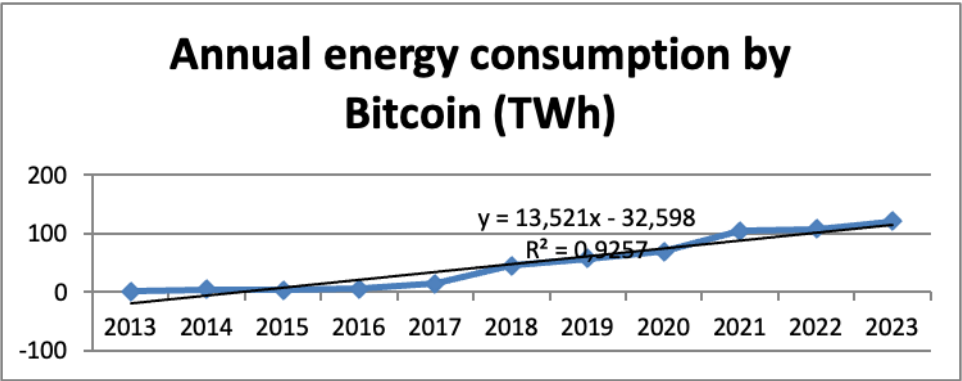


Fig. 3. Dynamics of Annual Energy Consumption by Bitcoin from 2013 to 2023

*Source: constructed by the authors*

Between 2013 and 2023, the annual energy consumption of Bitcoin increased by an average of 13.521 TWh each year. These examples highlight the need to enhance collaboration with diverse stakeholders, attract talent, conduct thorough pre-investment research involving specialists from various fields, and carry out rigorous pre-sale testing of innovative products utilizing digital technologies. For comparison,

in 2022, data centers worldwide consumed as much energy as France – 460 terawatt-hours (TWh) of electricity. However, only 7.2% of the global economy is considered circular, and this share is decreasing due to increased extraction and use of materials. Therefore, innovative strategies for economic and company development must align with the principles of responsible consumption and the support of sustainable business models.

International business innovations under stringent environmental constraints, limited financing sources, and rising energy tariffs impact the foundations of the circular economy, compelling management to accelerate macroeconomic and microeconomic transformation processes. The combination of organizational, managerial, and technological changes is accompanied by shifts in business functionality and the search for new value-creation centers and capital flows. These are reflected in business models through the allocation of outsourcing functions and international technology transfer, including in marketing and logistics.

Accordingly, the planning horizon must extend to assess the impacts of innovation-driven enterprises in the near and distant future. This requires structural reconfiguration and a strategic vision from management to seize new opportunities and effectively respond to contemporary threats.

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## **AFFILIATE MARKETING: KEY APPROACHES AND ORIGIN OF THE CONCEPT**

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Affiliate marketing is an essential tool for businesses as it enables them to increase sales and expand their audience without significant upfront costs. By partnering with affiliates who earn a commission for each successful transaction or customer acquisition, businesses can efficiently grow their sales while only paying for specific results. This makes affiliate marketing less risky and more cost-effective compared to traditional advertising methods, as it focuses on performance.

Affiliate marketing has become standard practice for successful businesses and encourages company growth. Its importance lies in creating close connections between business counterparts aiming to stand out among competitors in crowded markets. It benefits not only businesses but also customers, who often rely on it as a way to learn about a company, its products, location, and more.

Moreover, affiliate marketing helps businesses leverage the trust that partners have already established with their audience. Since partner recommendations are often perceived as more reliable and honest, this increases the chances of successful conversions. This approach aids businesses in building their brand and enhancing product recognition, using the resources and influence of affiliates, which is especially valuable for small and medium-sized companies seeking rapid growth. This underscores the relevance and timeliness of further research on the topic.

A significant contribution to the development of affiliate marketing has been made by both domestic and foreign researchers, among whom the works of O. Bochko [1], O. Boyenko [2], N. Hlynskyi [3], M. Oklander [4], S. Kovalchuk [5], N. Chukhrai [6], and others deserve special mention. These scholars have developed theoretical and practical approaches to the functioning of affiliate marketing in modern conditions, with a focus on current challenges and the most critical aspects of contemporary marketing.



Researcher Tsybko N. [7] systematized metrics for evaluating the effectiveness of marketing partnerships in the B2B market, highlighting ROMI (Return on Marketing Investment), LTV (Lifetime Value), and ROAS (Return on Advertising Spend) as key indicators. Zablotska Y. [8] explored the concept of affiliate marketing in depth, detailing its definitions and operational directions. N. S. Struk [9], through an in-depth study of marketing concepts, emphasized affiliate marketing, shaping its conceptual foundations.

However, despite a substantial body of research on the development of affiliate marketing, gaps remain in studying the origins of the concept and various approaches to affiliate marketing.

The aim of this study is to clarify the concept of “affiliate marketing” and to investigate modern approaches to its interpretation.

In processing the material, various scientific research methods were used. The method of abstraction was applied to identify non-essential properties and connections within affiliate marketing. The method of critical analysis was used to examine scientific and methodological literature, as well as practical experience related to the principles of affiliate marketing. The grouping method was employed to substantiate the author’s interpretations and the origins of the concept of “affiliate marketing,” based on an analysis of scientific approaches and its historical development. Graphic methods were applied to study and systematize the advantages and disadvantages of affiliate marketing.

Affiliate marketing is a key tool for modern businesses, enabling companies to effectively promote their products and services through partnerships with other businesses or influencers. It is based on mutually beneficial relationships, where partners receive a commission or fixed fee for each customer acquisition or completed purchase. This allows companies to reduce marketing expenses and focus on other strategic goals.

Using affiliate marketing also helps expand audience reach and increase brand recognition. Partners with an established customer base or followers can introduce the company’s products or services to their audience, thereby increasing the chances of attracting new customers. This approach is particularly effective for startups and small businesses, which often have limited resources for traditional advertising campaigns.

Finally, affiliate marketing allows businesses to build stronger connections with other companies and influencers, fostering mutual growth and development. Such partnerships can lead to new opportunities for collaboration, innovation, and business expansion. Additionally, it helps build consumer trust, as customers see endorsements from individuals or entities they already know and respect. Thus, affiliate marketing becomes an indispensable tool for modern businesses seeking success in a competitive market.

Zablotska Y. argues that affiliate marketing enables companies to effectively promote products and services by leveraging partners and affiliated resources. It is a powerful tool in the modern world of online business, allowing companies to expand their audience reach and achieve higher sales performance [8].

Struk N. S. states that “affiliate marketing will be effective if the right methodological approach to its management is chosen and its long-term effectiveness is determined” [9].

Kniazuk Y. M. points out that the main idea of affiliate marketing is to create a favorable environment based on principles of enduring commitments (guarantees), mutual respect, and trust [10].

Tsybko N. contends that affiliate marketing involves establishing strategic alliances with other companies or institutions to promote and sell each other’s goods and services, ultimately ensuring growth and profit for both organizations [7, p. 158]

In her study of the concept of “affiliate marketing,” Zablotska Y. [8] demonstrates that it is a system allowing companies to effectively promote their products and services using partners and affiliated resources. This approach proves to be a potent tool in the modern online business world, enabling companies to expand audience reach and achieve higher sales metrics [8].

In practice, affiliate marketing is implemented as a method of promoting web-based businesses, where a partner’s compensation is calculated based on each individual visitor, subscriber, and/or customer. It is important to note that this topic remains under-researched by domestic scholars. Today, the concept of affiliate marketing is crucial in the field of marketing, as its core focuses on the relationships between both producers and consumers of goods and services. Affiliate marketing directs a company’s marketing efforts toward establishing long-term, constructive, and preferential relationships with potential clients [11, pp. 103–105].

Affiliate marketing is the process of creating, maintaining, and expanding close cooperation with clients and other business partners, emphasizing individualized service for each customer, considering their specific needs and characteristics [12, p. 32]. Implementing the principles of affiliate marketing in practice requires a collaborative effort across all functional units of the company, working together as a marketing team. The primary goal of affiliate marketing is to provide long-term value to the consumer, with consumer loyalty being the key to a company’s success [13].

Moroz L. A. and Kniazuk Y. M. argue that an essential component of relationship marketing is building loyalty and increasing value for both consumers and partners in the market [14].

Pavlenko M. S. highlights several advantages of affiliate marketing, including increased reach, workload distribution, word-of-mouth promotion, and enhanced value for consumers. The scholar identifies the key tools of affiliate marketing: affiliate

partnerships, content partnerships, sponsorships, product-based, distribution, and retail partnerships, product placement, loyalty programs, licensing, outsourcing, and joint ventures [15].

At the same time, Tsybko N. defines affiliate marketing as a type of partnership marketing and also emphasizes distribution, dealership, and joint marketing [16].

We believe that affiliate marketing is based on collaboration between a company and its partners (affiliates), who attract new customers to the company in exchange for commissions or other rewards.

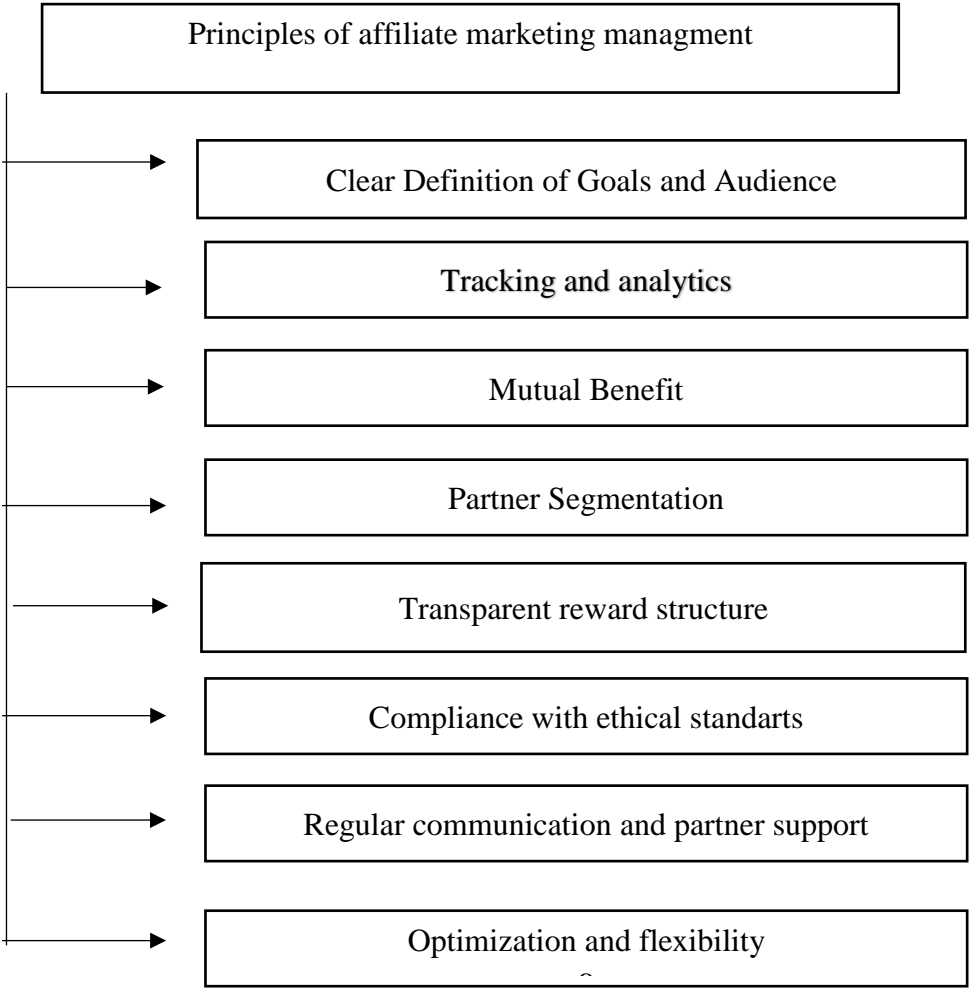


Fig. 1 Principles of Affiliate Marketing Management

The main principles of effective affiliate marketing are summarized in Figure 1:

1. Clear Definition of Goals and Audience. For successful affiliate marketing, a company must establish its goals (such as increasing sales or acquiring new users) and understand its target audience. This allows the company to attract relevant partners who have access to the desired audience and can effectively communicate the product’s value.

A clear definition of goals is a fundamental step in any successful marketing or business strategy. Goals provide direction, focus, and measurable benchmarks for

evaluating success. These objectives can vary widely, such as increasing brand awareness, boosting sales, improving customer retention, or driving website traffic. Well-defined goals should follow the SMART framework — they need to be Specific, Measurable, Achievable, Relevant, and Time-bound. This ensures that every action taken aligns with the broader strategic aims and can be assessed effectively.

Equally important is the clear definition of the target audience. Understanding who the audience is — their demographics, interests, behaviors, and pain points — enables businesses to tailor their messaging and offerings to meet specific needs. Segmenting the audience into distinct groups allows for a more personalized approach, improving engagement and conversion rates. This process involves collecting and analyzing data through market research, surveys, and digital analytics tools. Together, well-defined goals and a deep understanding of the audience form the backbone of any impactful strategy, ensuring efforts are both targeted and effective.

2. **Transparent Reward Structure.** It is important for partners to understand how their commissions are calculated and what customer actions (purchase, subscription, download) will earn rewards. The reward structure can vary: per click (CPC), per action (CPA), per sale (CPS), or per impression (CPM). Transparency in terms strengthens partner motivation and fosters trust in the company.

3. **Tracking and Analytics.** To monitor partner effectiveness, tracking systems and analytical platforms are used. This helps the company see which partner brings in customers, which traffic converts best, and which strategies are the most effective. Reliable analytics enable quick campaign adjustments and enhance performance.

4. **Mutual Benefit.** Successful affiliate marketing relies on mutually beneficial collaboration. The company gains new customers, while partners earn commissions for each successful conversion. This motivates partners to attract more customers, as their reward directly depends on results.

5. **Partner Segmentation.** Partners may have different channels and strategies, so it is beneficial to segment them (e.g., bloggers, content platforms, comparison sites) and tailor specific terms of cooperation for each segment. This allows the company to leverage each partner's strengths.

6. **Regular Communication and Partner Support.** Providing partners with up-to-date product information, promotional materials, and support at every stage is essential. Regular communication keeps partners informed about new promotions or changes in commission structure, increasing their interest and engagement.

7. **Compliance with Ethical Standards.** Partners should adhere to ethical standards and avoid prohibited advertising methods, such as spam or misleading marketing. This helps maintain the company's positive image and avoids reputational risks. The company should monitor partners' actions to ensure adherence to these standards.

8. Optimization and Flexibility. Affiliate marketing requires continuous optimization. Analyzing results allows the company to track which campaigns and partners perform best and make adjustments to improve performance. Flexibility in approaches helps the company adapt to market changes and sustain growth. Optimization involves continuously improving strategies, processes, and tools to achieve the best possible outcomes. In digital marketing, this means analyzing performance data, identifying areas for improvement, and implementing changes to enhance efficiency and effectiveness. Key areas of optimization include website performance (e.g., speed and mobile-friendliness), conversion rates, and campaign performance through A/B testing and audience targeting refinement. By leveraging analytics and feedback, businesses can ensure their efforts yield maximum return on investment (ROI) and meet evolving consumer demands. Flexibility complements optimization by allowing businesses to adapt quickly to changes in the market, technology, or customer preferences. In a rapidly evolving environment, rigid strategies can lead to missed opportunities or inefficiencies. Flexible approaches enable organizations to pivot based on real-time insights, competitor actions, or unforeseen events. For instance, agile marketing teams can rapidly adjust campaign messages, experiment with new channels, or explore emerging trends to stay ahead. Together, optimization and flexibility create a dynamic framework that supports sustained growth and competitiveness.

Thus, affiliate marketing can become a powerful tool for attracting new clients and increasing profit, provided the outlined principles are followed. It is essential to prioritize honesty, transparency, and flexibility in partner relations.

The primary objectives of affiliate marketing are to increase brand awareness and attract new clients through a network of partners. The core idea of this marketing approach is to engage third parties interested in promoting the company's products in exchange for a reward. This allows brands to reach a broader audience by leveraging partners' channels, which already have loyal subscribers, readers, or clients. As a result, the company can reduce direct marketing expenses, as a significant portion of promotional efforts is delegated to partners.

A second key objective is creating and maintaining a robust reward system that motivates partners to actively promote the company's products. Rewards can include sales commissions, fixed payments for specific actions (such as registrations or subscriptions), or a combined system where partners earn bonuses for completing multiple tasks. It is essential for the reward system to be clear and transparent for all parties, as this helps avoid misunderstandings and ensures long-term collaboration. An optimal reward system should be flexible and adapt according to partners' effectiveness and their contribution to achieving the company's goals.

The third objective is providing quality communication and support for partners. For successful collaboration, the company should inform partners about new products, promotions, marketing materials, and guidelines. Established communication allows partners to access up-to-date tools for promotion and to respond quickly to market changes. Many companies provide partners with informational support through regular newsletters, webinars, or dedicated support managers who help resolve issues in the work process. This not only enhances campaign effectiveness but also strengthens relationships between the brand and its partners.

The fourth objective is quality control and performance analysis of marketing campaigns. Since partners have significant freedom in choosing promotion methods, it is crucial to ensure they operate within the brand's ethical standards and do not harm its reputation. The use of tracking systems and analytical tools helps the company monitor the results of each partner, evaluate conversions, customer acquisition costs, and return on investment (ROI). This allows the company to adjust campaigns, improve efficiency, and filter out underperforming partners.

The fifth objective is the development of long-term relationships with partners, which contributes to the stable growth of the company. Affiliate marketing is most successful when partners feel like a part of the company and are invested in its long-term success. To achieve this, companies often implement loyalty programs for partners, organize events where partners can exchange experiences, and create opportunities for development, such as through specialized training sessions. Supporting and nurturing partnerships not only enhances marketing campaign results but also helps attract new clients through the reputation and professionalism of the partners.

Affiliate marketing encompasses various approaches that help brands effectively collaborate with partners to increase sales and attract new clients. One of the primary approaches is content sharing. In this case, companies provide partners with promotional materials, such as banners, text, or videos, which they can use on their platforms. This approach helps maintain brand consistency and ensures high-quality content that aligns with the company's style and tone. Partners, in turn, use these ready-to-use tools to engage their audience, simplifying their work.

Another approach is the use of marketplaces and platforms, where companies can register to participate in affiliate programs. This approach allows companies to attract a large number of affiliates on a different platform that offers various monetization programs. Companies can select partners based on specific criteria, such as niche, audience, and success history. This creates a convenient ecosystem where all participants can benefit from the collaboration.

Finally, another approach is the individualized adaptation strategy for each partner. This involves close communication with partners to understand their specific

needs. Companies can offer tailored conditions or tools that enhance partners' motivation and engagement. Personalizing relationships with partners also helps in building long-term partnerships, which is critical for success in affiliate marketing.

Thus, the primary approaches to affiliate marketing include content sharing, utilizing platforms for collaboration, and individual adaptation strategies, all of which help in effectively attracting new clients and achieving business goals.

Additionally, Lavrova Yu.V. [17] mentions the following types of marketing: product, consumer, and mixed. Product marketing focuses on promoting a specific product or service. The main goal of this type of marketing is to communicate the unique benefits of the product to the consumer and convince them of the need for that particular product. Product marketing includes market research, product positioning, the development of an effective communication strategy, and launching campaigns to stimulate demand. For example, mobile phones, cars, or software can be the subjects of product marketing campaigns.

The essence of consumer marketing lies in focusing on the end consumers of goods and services. Its goal is to meet the needs of buyers and persuade them to choose a specific product or brand over many others. The focus of consumer marketing is often on the psychology and behavior of buyers, which includes studying their motives, needs, and perceptions.

Mixed marketing uses several types simultaneously.

The study of the essence of affiliate marketing has led to the identification of advantages and disadvantages for different participants, which we will present in Table 1.

Table1.

Advantages and disadvantages of affiliate marketing.

Type of subject	Advantages	Disadvantages
For the seller	Increase in audience reach, spread of information about brands, growth in the number of customers.	Risk of fraud
For the partner	Quick earnings without significant investments.	Risk of being deceived by the seller and ending up without financial resources.
For the consumer	Detailed information about the product, purchasing the desired product	False or exaggerated information, hidden interests of the partner, limited access to information about alternatives

*Formed by the authors based on [18]*

Affiliate marketing is a powerful tool for increasing sales volume and promoting brand awareness. Collaborating with partners enables companies to reach new audiences, increase customer trust, and effectively manage their marketing budget.

As a modern form of marketing development, affiliate marketing is becoming increasingly significant as part of the overall corporate strategy for both international and domestic enterprises. All participants benefit from participating in affiliate programs: the main brand, the affiliate brand, and the consumers.

As a result of collaboration, new products are created, companies enter new market segments, develop new markets, and better meet the needs of consumers. The use of certain tools enables small and medium-sized businesses to make their mark on the market and significantly increase their revenue.

The general advantages of affiliate marketing include:

- Increasing reach by gaining access to the partner's customers, doubling market representation among existing and potential clients;
- Distributing the workload by doubling the marketing budget for the entire project duration and having the opportunity to work with fantastic talent without engaging in the hiring process;
- Spreading information through word of mouth by collaborating with loyal customers of a popular brand and having them share information about the product or service;
- Increasing value for their audience by introducing additional products and services that may appeal to them.

Small and medium-sized businesses can initiate partnerships by developing affiliate marketing programs, content partnerships, distribution partnerships, retail partnerships, and licensing.

With the growth of online commerce, affiliate marketing becomes even more relevant. Social media platforms (Instagram, TikTok, YouTube) continue to expand, allowing brands to collaborate with influencers in affiliate marketing formats. This type of collaboration enhances brand trust, as recommendations from thought leaders are perceived by consumers as more authentic.

AI and automation allow for more effective analysis of consumer behavior, tracking the success of affiliate programs, and optimizing commissions for affiliates. AI-based tools help forecast sales, personalize offers, and improve customer interaction.

Mobile apps are becoming an important platform for affiliate marketing. Developers integrate affiliate links and ads directly into apps, which allows for effective monetization of mobile traffic.

Brands are expanding their markets beyond national borders, stimulating the creation of global affiliate programs. Multilingual affiliate platforms allow brands to target different regions while considering local consumer preferences.



New technologies, such as blockchain, can provide more transparent tracking of sales and commission distribution. This reduces fraud risks and increases trust between brands and partners.

The development of affiliate marketing also depends on cooperation with platforms that cater to specific audiences. For example, niche websites or forums can attract loyal customers and offer more relevant content.

Thus, affiliate marketing has every chance of remaining one of the most effective customer acquisition strategies in the coming years, provided it adapts to new technologies and market changes.

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# **THE INTEGRATION INTERACTION ESSENCE BETWEEN MARKETING AND LOGISTICS IN ENTERPRISE ACTIVITIES**

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The integration of marketing and logistics is critical in today's competitive business environment, where high consumer demands drive companies to enhance operational processes. Companies strive to attract customers with effective marketing strategies while optimizing logistics costs, increasing delivery speed, and ensuring continuous product availability. Synergy between marketing and logistics not only improves customer satisfaction but also strengthens a company's market competitiveness, emphasizing the need for an integrated approach to managing these functional areas.

With globalization and digital transformation, coordinating marketing and logistics processes is increasingly essential for modern enterprise management. Effective integration of these functions enables companies to adapt quickly to demand changes, allocate resources efficiently, and optimize costs. Collaboration between marketing and logistics departments helps forecast consumer demand accurately, improve inventory management, and respond promptly to market fluctuations—key factors for success in highly competitive environments.

This study aims to analyze the effectiveness of marketing and logistics integration in companies and to determine its impact on customer satisfaction and business competitiveness.

To achieve this goal, the following tasks were set:

1. To analyze current trends in the integration of marketing and logistics within the context of globalization and digital transformation.
2. To examine interactions between marketing and logistics departments to ensure optimal customer service.
3. To investigate the role of integration in enhancing customer satisfaction and the company's competitive market position.

Studying the integration of marketing and logistics processes helps identify mechanisms that companies can use to enhance competitiveness and optimize business processes. This integration creates synergy, contributing to the enterprise's strategic

goals by coordinating efforts at all stages of product development and delivery. Close cooperation between marketing and logistics also enables quick decision-making, effective response to market changes, and efficient control over production and operating costs. Understanding the interdependence between marketing and logistics is crucial, as their integration accelerates deliveries, optimizes pricing policies, and increases customer satisfaction.

To conduct the research, modern scientific works devoted to the integration of marketing and logistics were analyzed. Among them is the work of O. Drobot, which explores the theoretical foundations and provides practical recommendations for improving the effectiveness of this integration [1]. Another notable contribution is the study by V. Lytvyn, which systematizes the conceptual foundations of marketing and logistics process integration [2]. A. Hnatyuk focuses on the impact of digitalization and innovative approaches to coordinating marketing and logistics functions [4].

V. Shevchenko examines key aspects of integration strategies and their role in ensuring competitiveness [5]. Meanwhile, S. Tymoshenko investigates how the integration of marketing and logistics influences the overall sustainability of enterprises [6]. O. Melnyk's research delves into the managerial aspects of integration [8], while A. Moroz emphasizes its critical role in enhancing company competitiveness[9].

These academic sources contribute to forming a comprehensive understanding of the role of marketing and logistics integration in improving the efficiency and competitiveness of enterprises. They also highlight the necessity for further research to refine integration processes, especially concerning the adoption of digital technologies and the ability to adapt to the dynamic shifts in market environments.

The methodology for researching the integration of marketing and logistics functions in enterprises comprises several key stages aimed at a comprehensive study of their interaction and impact on the efficiency of business processes.

The first stage involved conducting a systematic review of scientific sources and empirical studies dedicated to the integration of marketing and logistics. This stage made it possible to identify key concepts, theoretical approaches, and critical aspects of integration processes, such as the management of information flows, coordination between departments, and adaptation to internal and external challenges. Special attention was paid to modern approaches to digitalization and innovations in this field, which strengthen the synergy between marketing and logistics functions.

The next stage included a qualitative analysis of integration practices across enterprises in various industries. This involved case studies, examination of corporate reports, and analysis of data that reflect practical aspects of marketing and logistics interaction. This approach allowed for the identification of key factors affecting the efficiency of integration processes. Among these were corporate culture, the level of

digitalization of the enterprise, the adoption of modern technologies, the maturity level of management processes, and staff readiness for change.

Additionally, the analysis of practices helped identify the main challenges enterprises face when integrating marketing and logistics functions. These challenges include coordination issues between departments, insufficient adaptation of information systems to integration needs, and limited resources for implementing innovations. The findings served as a foundation for developing recommendations to improve the integration of marketing and logistics functions, aimed at enhancing operational efficiency and the competitive position of enterprises.

The study concluded that the enterprise operates through two key areas: marketing and logistics, both critical to business success. Marketing focuses on understanding consumer needs and preferences through processes like product promotion, market research, branding, and customer relationship management. The primary goal of marketing is to build consumer value and strengthen the brand by ensuring product availability in high-demand markets.

Logistics, in turn, focuses on efficiently managing the movement of materials from origin to end consumer, covering processes such as procurement, storage, transportation, distribution, and delivery. Its objective is to execute these processes swiftly while maximizing resource utilization.

Integrating marketing and logistics optimizes production cycles by shortening intervals between stages and lowering production costs. Moreover, effective integration supports strategic decisions regarding warehouse capacity management, determining optimal warehouse number and locations, and managing sales volumes and distribution channels. [1]

It is worth noting that the development of economic science took place under the influence of significant socio-economic transformations, which were characterized by a high level of instability and significant technological changes. These factors contributed to the dynamic renewal of approaches and methods in business management. The division of management concepts into marketing and logistics is due to the fact that for a certain period of time, logistics exerted a greater influence on the operational activities of enterprises, while marketing was considered an additional, less critical function. However, with the development of economic science, it becomes obvious that marketing and logistics are interdependent areas that cannot function effectively in isolation. The main task of logistics is to manage the flow of goods, services and information in the course of the company's activities. Logistics provides planning, execution and control over the movement and storage of goods and services from their place of origin to their final destination, focusing on meeting the needs of consumers. Logistics functions include inventory management, transportation, storage, order processing, and supply chain management, which are key to the efficient

operation of a business. Ensuring the smooth and timely movement of goods and services throughout the supply chain contributes to increasing customer satisfaction and loyalty, which strengthens the competitiveness of the enterprise. [2]

The main aspects of marketing and logistics integration are presented in (Table1).

Table1

Main aspects of integration of marketing and logistics

Component	Description	Measurement Methods	Key Indicators	Impact on Efficiency
Information Exchange	Interaction between marketing and logistics for demand forecasting and supply control.	Forecast accuracy, data exchange speed	Percentage of accurate forecasts, processing time, supply accuracy	Improved demand accuracy, reduced storage and transportation costs
Integrated Planning	Alignment of marketing and logistics goals for effective demand and supply management.	Comparison of planned and actual results	Percentage of on-time orders, warehousing costs	Cost optimization, improved planning accuracy
Supply Chain Management	Coordination of all supply chain participants, from suppliers to end consumers.	Monitoring order lead times and supplier interaction	Delivery time, warehouse fill rate, supply accuracy	Reduced delivery time, increased supply chain flexibility

*Source: Developed by the author based on [3]*

The evolution of marketing and logistics functions shows a clear convergence of these two spheres, which leads to their convergence. This process is based on mutually beneficial effects that arise when marketing strategies are integrated into logistics operations. The importance of such integration lies in the ability to optimize operational efficiency and business processes, which in turn contributes to increasing the overall effectiveness of the organization.

The integration of marketing strategies into the logistics structure allows achieving a double benefit: strengthening competitive positions and reducing costs, while simultaneously creating additional value for the end consumer. The combination of these two functions leads to the development of the ability to better understand the needs of customers, which allows to adapt the product offering according to the specific requirements of the market. This approach not only effectively attracts customers, but also builds loyalty, thanks to the individualization of service.

Thanks to such initiatives, it becomes clear that organizations can not only satisfy the current needs of customers, but also ensure the formation of long-term relationships supported by brand loyalty. A customer relationship-oriented approach usually also

involves proactively soliciting feedback from customers about their experience after completing pre-promised requests.

The integration of marketing and logistics also effectively extends to the field of logistics processes, which allows optimizing material handling and creating highly efficient warehouse supply chains. This, in turn, helps reduce the costs of storage, transportation and delivery of raw materials, which directly affects the reduction of the final cost of the product. In addition, integration allows logistics organizations to increase operational efficiency, which makes products more economically profitable and attractive to consumers. The maximum use of the logistical potential of each participant in the supply chain contributes to achieving optimal results and ensures comprehensive satisfaction of the interests of all parties involved. [3]

The results of the study show that the integration of marketing and logistics is based on theoretical principles that emphasize the creation of integrated systems, where system-forming relationships play a crucial role in ensuring effective interaction between the components and subsystems of these functions. Such connections ensure the integration of marketing and logistics processes into a single system, which allows the organization to achieve optimization of operations, improve internal communication and synchronize actions between functional units. In particular, this contributes to increasing operational efficiency and meeting consumer demands, which are key factors for ensuring the competitiveness of the organization. The integration of marketing and logistics provides more consistent decision-making, effective allocation of resources and contributes to the development of a strategy, which increases the organization's adaptability to changes in market conditions.

In the activities of enterprises, the concept of "supply chain" is widely used, covering all stages related to the production of a specific product. This includes processes starting from the procurement of raw materials and their transportation to production facilities, to the final stage — delivering finished products to the end consumer. Each stage is an integral part of the supply chain, and it can be argued that every action, from the delivery of raw materials to production facilities, is essential. The supply chain consists of numerous small operations that work together to form a complex process of producing and delivering finished products, ensuring their efficient movement through all stages of the production and logistics cycle.

The supply chain is a complex and multifaceted system that includes numerous interrelated processes. These processes are influenced by various external and internal factors, adding complexity to supply chain management. In today's conditions, the influence of globalization is particularly significant, not only contributing to market expansion but also creating new challenges related to integrating contractors and suppliers from different parts of the world.



The main components of the supply chain include raw material procurement, production and operational processes, logistics and delivery, information technologies and communication systems, as well as risk management and security. Each of these elements plays a critical role in ensuring the smooth operation of the chain and requires careful analysis and strategic management.

Raw material procurement involves the processes of purchasing materials and resources needed for production. Effective management of this component includes selecting reliable suppliers, monitoring quality, and ensuring timely delivery, which is crucial to avoid delays in the production cycle. Production and operational processes are responsible for transforming raw materials into finished products. This stage includes planning, quality control, resource optimization, and the implementation of modern technologies to improve productivity and reduce costs.

Logistics and delivery ensure the movement of goods between various links in the supply chain—from suppliers to end consumers. Efficient logistics includes optimizing transport routes, managing inventory, and minimizing transportation costs. Information technologies and communication systems form the foundation for supply chain management, providing transparency, accuracy, and speed of data transfer between all participants in the chain. The use of modern systems, such as ERP or blockchain, allows for better control over processes and faster responses to changes in market conditions.

Risk management and security involve identifying potential threats, planning actions in case of unforeseen circumstances, and protection from both external and internal risks. This also involves compliance with regulatory requirements, data protection, and transportation security, which ensures the resilience of the supply chain even in crisis situations.

The interaction of these components ensures the integrity and effectiveness of the supply chain, creating value for the business and meeting consumer needs. Historically, the supply chain function has undergone significant transformations, evolving from the concept of isolated components to the modern model of integrated and interconnected elements, where inefficiencies in any link can lead to substantial losses, both in additional costs and time. The implementation of advanced technologies, such as inventory management systems integrated with software solutions for transportation optimization, including real-time tracking capabilities, has made logistics operations more controllable. This enables efficient management of supplies at all stages, from dispatch to delivery to the final consumer, ensuring a high level of customer satisfaction and contributing to the development of loyalty. [5]

Research findings indicate that the relationships between marketing and logistics departments are critically important and interdependent, necessitating close cooperation to achieve maximum efficiency in organizational activities. The success

of marketing strategies is unattainable without adequate product supply, as marketing's role involves shaping market demand, which in turn directs logistics to plan deliveries accordingly. When the two functions are integrated and work in tandem, the synergy between them generates significant benefits: marketing departments can support logistics processes by determining delivery timing and volume to meet market demands, while logistics provides marketing with crucial information about inventory levels that can inform the planning of advertising campaigns or the introduction of new products.

The graph below illustrates a study of trends in the integration of marketing and logistics from 2001 to 2024. I developed a coefficient that reflects the degree of adoption of integrated approaches by enterprises in each respective year. This ratio is defined as the percentage of enterprises that have implemented the integration of marketing and logistics through the adoption of advanced technologies, information systems, and joint supply chain management strategies.

In 2001, integration between marketing and logistics was virtually non-existent, with only a small number of companies beginning to utilize basic technologies for inventory management and distribution. By the early 2000s, only approximately 10-15% of enterprises had implemented information systems for managing inventory and logistics processes, though integration remained limited, even at the level of individual departments.

From 2010 onwards, the integration of marketing and logistics gained significant momentum, with around 40% of enterprises adopting ERP systems, CRM, and WMS solutions. This shift contributed to improved coordination and planning between departments. By 2015, most companies involved in warehousing and transportation began utilizing big data analytics and forecasting systems, which enhanced the accuracy of demand forecasting and resource optimization.

In the past decade, since 2020, integration has advanced significantly, with approximately 80% of enterprises actively adopting new technologies, such as artificial intelligence and automated management systems, which have enabled more efficient and adaptive supply chain management. By 2024, nearly all enterprises operating in logistics and marketing are expected to use integrated digital platforms that provide continuous real-time data exchange, enabling quick responses to demand fluctuations and enhancing competitiveness.

The display of marketing and logistics functions in enterprise activities is shown in Figure 1.

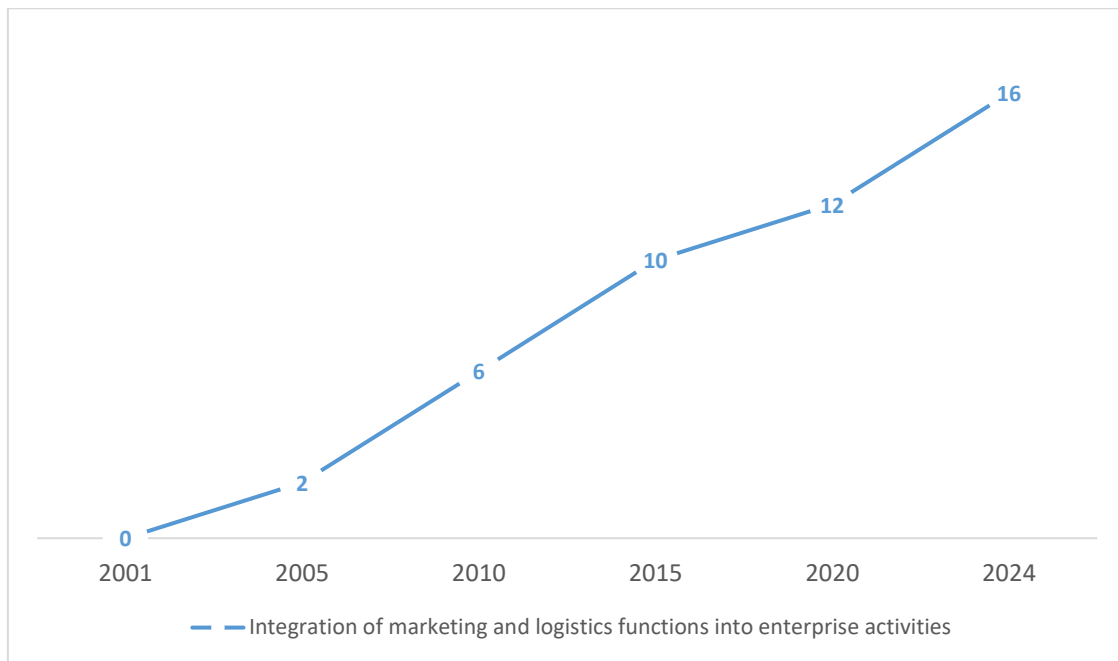


Fig. 1. The Importance of Marketing and Logistics Functions in the Activities of Enterprises

*Source: own research*

The integration of marketing and logistics significantly enhances the flexibility of an organization, enabling it to quickly respond to changes in the market environment and consumer demands. This integration allows enterprises to effectively adapt to new conditions, which would otherwise require substantial costs and time. It creates a dynamic system that facilitates operational adjustments not only in production processes and inventory management but also in distribution strategies. In this context, decisions made within the marketing and logistics functions directly or indirectly impact all aspects of the business due to their interdependence.

For instance, changes in consumer demand directly influence production volumes and inventory requirements, which in turn necessitate adjustments in logistics strategies and the distribution of goods. Therefore, integrated approaches enable high efficiency in managing all stages of the supply chain, optimizing both costs and time at each stage.[6]

In any business organization, supply chain management (SCM) is a fundamental component, as it ensures the integration of the flows of goods, information, and finances, functioning as a unified process that enhances value for the end customer. This level of integration is crucial in the context of today's market dynamics, where the efficiency of product and service delivery to consumers directly influences their satisfaction, loyalty, and ultimately, the profitability of the business. In the face of rapidly changing market conditions, globalization, and technological innovation, supply chain management becomes a key tool for maintaining a company's competitiveness.

SCM encompasses not only the management of supply and logistics but also coordination with partners and suppliers, the development of production and sales strategies, order processing, and efficient financial management. This process requires alignment and interaction across different business functions, such as marketing, sales, finance, production, and distribution. An important aspect is the ability to quickly respond to shifts in demand or unforeseen situations, such as disruptions in supply or logistical chains.

This integration enables organizations to optimize their operations, thereby enhancing competitiveness and customer satisfaction. Effective management of the flow of goods, information, and finances helps businesses reduce excess, low-value inventory and minimize costs typically associated with delays in delivering products from suppliers to consumers. Such delays often hinder the timely fulfillment of customer needs. The ability to deliver product functionality and benefits also enables rapid adaptation of production cycles, incorporating feedback on the effectiveness of implemented strategies. This adaptation occurs at the early stages of the process, allowing for timely adjustments and the optimization of operations to enhance both customer satisfaction and production efficiency. [7]

My analysis confirms that supply chain management (SCM) plays a crucial role in harmonizing marketing strategies and logistics processes. Effective SCM ensures that marketing strategies are developed not only based on the needs of the end user but also in alignment with material and technical capabilities, providing a foundation for swiftly and efficiently meeting market demands. For instance, the implementation of a same-day delivery strategy is directly dependent on logistics capabilities, highlighting the importance of integrating these two functions. This illustrates that SCM not only plans but also executes these strategies, adapting to shifting consumer expectations, thereby enhancing customer satisfaction and loyalty. SCM theories serve as vital tools for achieving synergy between marketing and logistics, which, in turn, act as key drivers of overall organizational performance. [8]

The integration of SCM facilitates effective collaboration between marketing and logistics functions, preventing their isolated operations. Such integration minimizes redundancy and conflicts between these functions, ultimately increasing the overall effectiveness of the organization. Moreover, it enables the enterprise to respond more rapidly and precisely to changes in market conditions, ensuring the timely and effective fulfillment of customer needs. This contributes to enhancing competitiveness and sustaining high levels of customer loyalty, factors that are crucial for ensuring long-term success in the market. [9]

Strategic business models in closed supply chain management play a critical role in ensuring the continuity of processes, starting from the development and production of a product to its delivery to the end consumer, including feedback. Such a model is

the basis for creating a sustainable and integrated business system, in which the integration of each stage of the supply chain ensures a high level of efficiency. The closed-loop system supports not only environmental sustainability, but also forms a competitive advantage by focusing on meeting the needs of environmentally conscious consumers.

Ensuring an efficient and stable supply of products and services that meet consumer requirements contributes to increasing consumer value. The client, as the end user of the product, evaluates it according to such criteria as quality, timeliness of delivery and availability, which determines the level of satisfaction of his needs. Logistics in this context plays a key role, as it ensures timely and efficient delivery, which is a necessary condition for the creation of added value. Marketing efforts, by promising these factors, serve as a benchmark for evaluating whether these promises meet the demands of consumers, thus ensuring their satisfaction and loyalty.[10]

The harmonious integration of marketing and logistics functions creates conditions for cost optimization at all stages of the supply chain, which, in turn, contributes to increasing resource efficiency and reducing overall costs. Companies are able to maximize the use of their resources, enabling them to achieve an increase in operational efficiency and a reduction in costs.

This, in turn, contributes to the effectiveness of wholesale purchases, production processes, as well as the optimization of transportation routes and product distribution. The use of storage facilities allows companies to significantly reduce product stock levels while ensuring full satisfaction of demand. With an integrated approach to supply chain management, businesses can achieve greater accuracy in forecasting consumer needs, allowing them to minimize costs associated with storage and handling, while reducing the risks associated with overstocking or understocking.

Inventory management through warehouses not only helps reduce logistics costs but also provides flexibility in responding to changing market conditions, increasing the ability to quickly adapt to shifts in demand or unforeseen circumstances. This approach helps optimize resource utilization, shorten transportation times, and reduce overall supply chain costs, ultimately improving the efficiency of delivering products to end consumers.

Monitoring the movement of goods at all stages — from production to final delivery — in real-time is a critical component of marketing and logistics integration, as it significantly increases supply chain transparency. This level of oversight provides companies with the ability to effectively manage customer service levels by proactively responding to possible errors or deviations in processes. If any delays or inconsistencies occur, they can be detected immediately thanks to real-time tracking systems, allowing for timely corrective action to be taken.[11]

The most effective tracking systems are presented in (Table 2).

Table 2.

## Key technologies for integration

<b>Tool</b>	<b>Functionality</b>	<b>Methods of Efficiency Evaluation</b>	<b>Key Indicators</b>	<b>Integration Outcome</b>
<b>ERP Systems</b>	Integrate all business processes: marketing, sales, production, finance, logistics.	Order processing time, forecast accuracy	Processing time, forecast accuracy, data integration	Reduction in processing time, improvement in planning and order execution accuracy
<b>CRM Systems</b>	Manage customer relationships to increase loyalty and improve demand forecasting accuracy.	Customer loyalty measurement, campaign effectiveness	Loyalty index (NPS), number of repeat purchases	Increased loyalty, improved demand forecasting accuracy
<b>SCM Systems</b>	Manage the supply chain to optimize deliveries and reduce transportation costs.	Evaluation of order execution time and accuracy	Delivery time, supply costs, defect rate	Reduction in supply costs, increased flexibility and accuracy of deliveries
<b>BI Systems</b>	Data analytics for improving decision-making in demand, inventory, and supply chain management.	Evaluation of forecasting and planning accuracy	Forecast accuracy, supply uncertainty level	Improved forecasting accuracy, optimized inventory management

*Source: Developed by the author based on [11]*

Real-time data is an important resource for effective inventory management, as it allows to significantly reduce excess inventory and minimize the risks of shortages. The use of such data contributes to accurate forecasting of needs, which leads to a decrease in storage costs and prevents losses due to product shortages. As a result, companies that successfully implement real-time monitoring systems are able to ensure a high level of customer satisfaction through timely and accurate deliveries.

This approach not only strengthens the interaction between marketing and logistics, but also plays an important role in strategic planning and resource optimization at the stages of supply chain formation. The integration of real-time data allows to improve forecasting, management decisions and overall efficiency, which provides competitive advantages in the market.

As a result of the study and based on the above provisions, it can be concluded that the integration of marketing and logistics functions is a key factor in increasing the efficiency of enterprises and their competitiveness. The results confirm that integration

creates synergies that contribute to improving the efficiency of management decision-making processes and overall operational efficiency.

Data exchange between marketing and logistics allows for deeper analysis of the supply chain and the market environment, which enables more informed decisions on demand, productivity, and distribution strategy. The integration of route optimization methods and inventory management is an important factor in reducing costs and increasing the overall efficiency of the enterprise, which provides competitive advantages in the market.

The interaction between marketing and logistics functions allows for significant cost reductions, optimization of resource use, and improved customer service quality, which in turn helps to strengthen companies' market positions. The scientific novelty of the study lies in identifying the key aspects of marketing and logistics integration in the context of digitalization and globalization, as well as in developing practical recommendations for optimizing the interaction of these functions within enterprises.

The practical significance of the obtained results lies in their applicability for the development of effective strategies for integrating marketing and logistics, which will allow enterprises to increase operational efficiency, reduce costs, and improve customer satisfaction. The prospects for further research lie in a deeper analysis of the specifics of integration in enterprises across different industries, as well as studying the impact of new technologies on the optimization of these processes, which opens new opportunities for improving operational strategies.

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# **IMPLEMENTATION OF CATEGORICAL MANAGEMENT IN THE PRACTICE OF MARKETING MANAGEMENT OF THE TRADE ENTERPRISE: MODERN TRENDS**

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The introduction of categorial management into the practice of marketing management of a trade enterprise is an important component for ensuring the efficient organization of commodity flows and increasing competitiveness. Categorial management is an approach that ensures the management of the product range as separate categories rather than individual products. This allows for a better focus on consumer needs, optimization of turnover, and increased business profitability. Current trends in categorial management (omnichannel approach, digitalization and data analytics, personalization of offers, use of Artificial Intelligence (AI) and automation, integration with supply chains, innovations in packaging and product design, etc.) reflect changes in business environments, technologies and consumer preferences.

Modern consumer market is characterised by increased competition between producers, sellers, excessive saturation of goods in most segments. The key element of the entire market system, the object of competitive struggle was and remains the goods, especially the process of its formation and management at the retail trade enterprise. There are many technologies and techniques of goods assortment management, such as assortment evaluation indicators, ABC- and XYZ-analysis, BCG matrix, merchandising. Using the technology of merchandising, experts have come to the conclusion that while optimising the display and presentation of goods in the retailer's hall, it is necessary to identify the main units of assortment management - categories. Trade practice has shown that customers see the assortment of the shop by categories. A product category is a commonality, a set of some goods that are united by a certain similarity of usage.

Problems of management of commodity assortment are devoted to the works of

such scientists as: Mushtai V. A. [6], Hlushchenko Yu. Ye. [3], Dobrianska V. V., Sirenko O. V. [2], Balabanova L. V. [1], Tkachenko N. B. [9], Kholodnyi H. O. [4], Mykytiuk N. YE. [7]. The analysis of the works of these authors helped to solve the set goals.

The basis for writing the scientific article are the conceptual foundations and methodological approaches to the implementation of categorical management in the practice of marketing management of the trade enterprise, which are covered in the works of domestic and foreign scholars and practitioners, periodicals and Internet resources devoted to the study of categorical management in general.

The article uses such scientific and empirical methods as causal analysis and synthesis, deduction, systematisation and generalisation, and a systematic approach. In particular, a combined ABC/XYZ analysis was applied, the results of which demonstrate effective management of the product range.

The information base of the study was formed by economic indicators (turnover, share of sales, share of sales in the cumulative total, sales revenue) of the product range of PE "Kulttovary-Vinnytsia", as well as scientific papers on the issues raised in the paper. The process of forming a system of product roles categories was divided into the following stages: determination of the list of roles to be used within the assortment matrix adopted by the company; assignment of roles to each category; allocation of resources among categories based on these roles.

The emergence of categorical management is associated with the company "Procter & Gamble", which at the beginning of the 90's of the last century for the first time grouped goods into categories not based on the principle of production, but on their common properties for the consumer. This simple idea seems today natural, but then it was revolutionary, because before that they did not divide the goods into categories in such way as it is perceived by the buyer [7].

Categorical management is a process of product range management process, in which each product category is considered as an independent business unit [3]. It is based on two main rules:

- 1) the consumer is the main value, all activities are focused on the maximum satisfaction of his/her requests;
- 2) the category is an independent business unit, it implies the unification of purchasing and selling functions, the presence of a single person responsible for everything that happens within the category.

Categorical management should be regarded as an effort to optimise product flows between the producer and the end consumer. In this case, the categorical manager acts as a buyer, a logistician, a promotional specialist and a salesperson. The main goal of categorical management is to increase the efficiency of interaction between the producer (the initial link of the commodity chain) and the subsequent links (retailers)

to fully meet the demands of consumers.

Among the main tasks solved by categorical management, first of all, it should be emphasised [2]:

- analysing the market of goods and services by supply and demand with the development of products that maximally satisfy the possible demand of the end customer;

- optimisation of stocks and commodity flows of products on the basis of development and sale of products of increased demand at the optimal price on the market;

- clear division of all product groups into categories (for example, “TV sets” in the group of household appliances or “groats”, «pasta» in the group of dry food products, etc.);

- studying the consumer demand of the population for each of the product categories.

Categorical management builds the work of the retail company in such way that the work is aimed at maximising the satisfaction of consumer requirements of customers. Business processes of the retailer and supplier are constantly improving, logistics is becoming better, which leads to cost reduction and growth of the company's income. It is impossible to achieve this without close co-operation between the retailer and the supplier to exchange all necessary data and jointly manage product assortment and product flows. The assortment management process within the framework of the categorical management concept implies consistent implementation of nine stages: formation of a product category, setting the role of the product category, category evaluation/formulation of norms for the product category, determination of the product category strategy, determination of the product category tactics, fulfilment of the product category plans, product category analysis/assessment of the product category efficiency, period report on the product category, control and adjustment.

Identify areas of development, promising directions for improving the assortment of the enterprise, is most likely at the second stage of the process of implementation of category management - the assignment of roles to product categories.

Assignment of different roles to goods and categories is considered as a tool for formation (at the operational level) of the assortment promotion policy and pricing in accordance with the expectations of customers.

The role of a product category is determined by its importance for the buyer and seller. In accordance with the role of a product group, shops allocate to it linear and square metres on the shelves, warehouses, attract funds for advertising, engage service personnel. The process of forming the system of product category roles can be divided into the following stages: defining the list of roles to be used within the assortment matrix adopted in the company; assigning roles for each category; distributing

resources among the categories based on these roles.

Determination of the roles list for using in the assortment matrix of the company is the initial stage of building category management. The larger the format of a trading division, the more product categories it counts. The number of product categories also depends on the specifics of the business: DIY-retail, for example, has significantly fewer categories than grocery retail. A supermarket format can have as many as 400 categories/subcategories. And each plays an important but variable role in achieving goals. The company management involved in product assortment management should create a complete list (classifier) of category roles which will be used by the whole company.

In the theory of categorical management, a number of authors [3, 5, 7, 8] distinguish eight types of roles assigned to product categories - Table 1.

Table 1

The role of categorical management in the activities of a trade enterprise

Role of categorical management	Principle of merchandising	Principle of pricing	Principle of Commodore
<i>1. Traffic Builder</i> – is well-known products with stable demand, representing a large share of the target market. The decision to buy is made quickly. These products are special in that they provide a mass flow of buyers (who also buy other categories of goods).	popular, well-known brands are placed at eye level. Double-facing, advertising and information materials, samples are used. The best places, ends, pallets are used for lay-out	indicator prices at or below market level, special prices	promotions for a well-known or beautiful product + additional offer to stimulate interest
<i>2. Cash Generator:</i> goods with this role are known to most consumers and are sold by most market players at a medium or small mark-up. Impulse goods, or goods that complement the main purchase, also play the role of cash generators.	provide adequate space for display, emphasise novelties, rotation of goods with high margins, checkout area. Display encourages impulse purchases in the most walkable or relevant places.	market prices, if necessary slightly below the market average.	intensive promotion - emphasise competitiveness, use point-of-sale promotions
<i>3. Profit Generator</i> – high-margin goods that also have loyal consumers. These may be seasonal	expanding the range of high-priced/high-margin products. Mixing high-margin items with lower-	price - maximising profits on the market, skimming the cream on exclusive products	only very high-margin products are supported and without price reductions (+ gift, + service).

goods, goods with a high degree of novelty or supported by advertising. The goods have high sales growth rates and provide high profits	priced items		
4. <i>Image Creator</i> : the role is given to expensive prestige goods. The task of goods is not so much to increase sales as to attract attention and 'ennoble' the shopping atmosphere, they complement the positive consumer perception of the shop.	better quality of products, service and maintenance, branded equipment, stands, boxes to increase attractiveness.	the maximum reasonable mark-up at which the goods can be sold.	actions, media, PR, masterclasses, presentations
5. <i>Turf Defending</i> : this category includes products based on price. The aim is to attract and retain price-sensitive customers, keeping them from leaving for competitors, with a quick decision to buy.	placement with higher-margin, more expensive ones. Use branded equipment, stands, boxes to increase attractiveness	prices are below the market average, if necessary the lowest on the market, trading at a loss for a number of goods is possible.	intensive promotion, which aims to emphasise competitiveness, to carry out local and media promotions.
6. <i>Excitement Creating</i> – new products: seasonal, including for holidays, fast-growing, forming a new need.	places for novelties, best seats, special equipment, installations.	periodic price reductions leading to immediate purchase (special offers).	mandatory support from the supplier, presentations, PR.
7. <i>Transaction Building</i> – goods necessary to increase both the average cheque and the total sales volume of the shop in physical terms. Goods can be attractive to large families or favourable from a price point of view, e.g. 4 for the price of 3.			
8. <i>Test SKU's</i> – goods with a minimal share in total sales. The presence of these goods should be dictated by necessity. Necessity is: an experimental position; to create an impression of completeness of the assortment; for a special client for the purpose of word of mouth.			

Depending on the goals pursued by the retailer, it is determined a set of roles that they need to work with.

From a practical point of view, it is worth noting that the complex structure of the relationship between supplier and retailer leads to the fact that the parties are actively modernising their informational systems, developing new models of analysis of

customer behaviour and approaches to managing shelf space and store space in general, changing pricing models by category in the retail network, and implementing categorical management strategies in managing sales of retailers' own brands.

The mechanism for implementing categorical management at the enterprise is described in the source [10], consisting of four interrelated blocks in Figure 1.

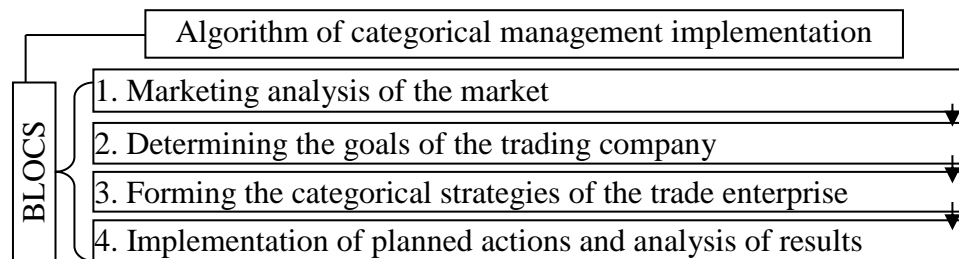


Fig. 1. The mechanism of implementation of categorical management at a trade enterprise [10]

The data presented in Table 2 were obtained by analysing a number of food hypermarkets sales with a total turnover of more than 100 million UAH per month with 72 product subcategories consisting of more than 11,000 items [3, P. 60].

The proposed system of role classification can serve as a ready-made algorithm for product assortment management at the enterprise. However, the final algorithm (the number of roles, variants of their combination) depends on the breadth and depth of the company's assortment, available technologies and, most importantly, the place the company occupies in the chain “producer - end consumer”.

By the example of the product range of PE “Kulttovary-Vinnytsia”, working in the consumer market of Vinnytsia, we will define the categories and their roles. PE “Kulttovary-Vinnytsia” realises the direction of wholesale and retail school, office and stationery goods. The assortment of goods of PE “Kulttovary-Vinnytsia” includes more than 3000 items, which can be classified into 9 categories of goods, which are proposed to be taken as a basis and used as product categories, considering them further as independent business units.

ABC-XYZ-analysis allows to classify the categories of goods of a trading company into 9 groups depending on their contribution to the company's revenue (ABC) and regularity of purchases (XYZ) [3]. This classification simplifies the work in planning and forming the assortment at different levels of flexible logistics systems, in production systems, supply and sales systems.

Implementation of this method helps to reduce the number of missed sales, reduce surplus goods, minimise total costs related to inventories.

Table 2 presents ABC-analysis of the assortment of PE “Kulttovary-Vinnytsia” for 2023.

Table 2

## Balance characteristics of the roles of product assortment categories

Role of category	Profitability of the categories	Share of categories in assortment	Share of sales volume	Result of ABC-analysis by revenue by category	Category turnover in days	Promotion costs
Traffic Builder	10–20 %	25–40 %	20–45 %	Only A	2–23	highest
Cash Generator	15–30 %	20–30 %	20–45 %	All	2–33, but there are more 50	low
Profit Generator	15–50 %	10–20 %	10–20 %	Mostly B and C	0–69	medium
Image Creator	10–48 %	1–5 %	1–7 %	Only C	16–75, but there are more 100	low
Turf Defending	0–19 %	5–15 %	10–20 %	Mostly A and B	1–19	high
Excitement Creating	15–30 %	0,1–5 %	1–10 %	B and C	From 0 to more than 1 000 (stale stock)	during season - high
Test SKU's	19–24 %	0,1–3 %	0,1–5 %	C	70–150	low
Transaction Building	0–6 %	5–15 %	0,1–9 %	C	10–50	medium
Subcategories without an explicit role	18–29 %	0,1–2 %	0,1–3 %	C	4–50	no

The data of Table 3 indicate that group A, providing enterprise with the largest share of revenue, can include products for school and art, office equipment, writing tools, paper and products made of paper. Group B includes office machinery, safe equipment, office tools and accessories.

The rest of the product categories were categorised as group C.

XYZ-analysis can be used for a more profound study of the assortment. It allows to create a more complete picture of the trading process at the trading enterprise [2].

XYZ-analysis also involves the division of the assortment of the trading enterprise into groups X, Y and Z, and the criterion of this analysis can be the profitability of goods or the stability of their sales (characterised, for example, by the profit from sales by categories of goods).

Table 3

## ABC analysis of the assortment of PE “Kulttovary-Vinnytsia”

	Name of product categories	Turnover, UAH thousand	Share of sales, %	Share of sales by cumulative total, %	Name of the group
1	Goods for school and art	8992,7	29,54	29,54	A
2	Office equipment	7711,1	25,33	54,87	A
3	Writing tools	3991,0	13,11	67,98	A
4	Paper and products made of paper	3150,8	10,35	78,33	A
5	Office machinery, safe equipment	2520,6	8,28	86,61	B
6	Office tools and accessories	1777,8	5,84	92,45	B
7	Housewares, household appliances, tableware	1095,9	3,6	96,05	C
8	Stamping products	672,8	2,21	98,26	C
9	Food products	529,7	1,74	100	C
	Turnover, TOTAL	30442,6	100	—	—

The results of XYZ-analysis are shown in Table 4 and indicate that the following categories of goods can be attributed to group X: Housekeeping supplies, school and art supplies, writing supplies, paper and products made of paper. Group Y includes office machinery, safes equipment, office tools and accessories. Outsiders, group Z, include housewares, household appliances, tableware, stamping products, goods for school and art.

Table 4

## XYZ - Analysis of the assortment of PE “Kulttovary-Vinnytsia”

Name of product categories	Turnover, UAH thousand	Share, %	Share of sales by cumulative total, %	Name of the group
1. Office equipment	675,8	17,5	17,5	X
2. Goods for school and art	621,7	16,1	33,6	X
3. Writing tools	590,8	15,3	48,9	X
4. Paper and products made of paper	475,0	12,3	61,2	X
5. Office machinery, safe equipment	451,8	11,7	72,9	Y
6. Office tools and accessories	401,6	10,4	83,3	Y
7. Housewares, household appliances, tableware	328,2	8,5	91,8	Z
8. Stamping products	173,8	4,5	96,3	Z
9. Food products	142,9	3,7	100	Z
Profit from sales, TOTAL	9225,0	100	—	—

Further it is necessary to combine the results of ABC- and XYZ-analysis, as a



result of which the whole assortment of the enterprise is divided into 9 segments based on two criteria - the share of the product group in the turnover of the enterprise and the share of the product group in the profit. The results of the combined analysis are presented in Table 5.

Table 5

Result of combining ABC and XYZ analysis

Category	A	B	C
X	goods for school and art, office equipment, writing tools	equipment and safe	–
Y	paper and products made of paper office machinery	Office tools and accessories	–
Z	–	–	Housewares, household appliances, tableware, stamping products, food products

The most favourable for PE “Kulttovary-Vinnytsia” categories of goods are AX, BX-, AY-groups, which provide the greatest contribution to the turnover and profit formation of the enterprise. This zone whose products should be given the most attention, includes goods for school and art, office equipment, writing tools, paper and products made of paper, office machinery, safe equipment. Among the groups that need special actions to improve their efficiency are BY-group goods (office tools and accessories). These groups have sufficient potential, but for their moving up into the group of profitable goods, it is necessary to optimise the assortment and pricing policy related to these groups. Finally, the least profitable and poorly turnover goods include segments BZ, CZ. These include: housewares, household appliances, tableware, stamping products, food products.

Based on the completed ABC- and XYZ-analysis (Tables 3, 4) and the results of the combined matrix (Table 5), each category is assigned its role in the process of assortment management (Table 6), which allows to form a sales strategy of the enterprise by product categories, the main provisions of which are presented above.

For example, to the creators of the flow, which included such product categories as goods for school and art, office equipment, it is recommended to lay out at eye level, to use double-facing, to use the best places, ends, pallets for laying out. It is recommended to spend the highest promotion costs on this product category, to conduct special promotional campaigns.

Such product categories of PE “Kulttovary-Vinnytsia” as office tools and equipment, writing utensils were classified as defenders. It is suggested that the goods used as defenders should be placed interspersed with higher-profitable, more expensive ones. It is recommended to use branded equipment, stands and boxes to increase the

attractiveness of the display. Prices should be set below competitors' prices. It is suggested that significant funds be spent on product promotion, local and media campaigns.

Table 6

Assignment of roles to product categories in the product range of PE  
“Kulttovary-Vinnytsia”

Name of product categories	Name of categories	Share of sales, %	Share in assortment, %	Share of profit from sales, %	Role
1. Products for school and creative work	AX	29,54	21,7	15,3	Traffic Builder
2. Office equipment	AY	25,33	26,8	11,7	Traffic Builder
3. Writing tools	AX	13,11	13,9	12,3	Turf Defendin
4. Paper and products made of paper	AX	10,35	15,6	17,5	Profit Generator
5. Office equipment, safe equipment	BX	8,28	5,2	16,1	Excitement Creating
6. Office tools and accessories	BY	5,84	6,7	10,4	Turf Defendin
7. Housewares, household appliances, tableware	BZ	3,60	9,4	8,5	Excitement Creating
8. Stamping products	CZ	2,21	0,6	4,5	Transaction Building
9. Food products	CZ	1,74	0,3	3,7	Excitement Creating
Turnover, TOTAL	—	100	100	100	

Housewares, household appliances, tableware, food products have been assigned the role of image creators. In relation to these product categories, it is recommended to provide the best quality of service and maintenance. In terms of pricing, apply the most reasonable margin at which the goods can be sold. Promotion should be carried out through promotions, masterclasses and presentations, as well as paying for advertising in the media.

With regard to stimulators of purchase volume, which included the product category “Stamping products”, it is recommended to apply pallet display, to use for display the ends, checkout area, places with high passing traffic. In pricing, it is recommended to set a favourable price (tangible savings) when buying large quantities of goods.

To achieve the maximum effect from the introduction of categorical management, it is most appropriate to take measures in the first place in relation to product groups whose share in the company's sales is the largest. These product groups include,

according to Tables 4 and 6, goods for school and art, office equipment, and writing tools.

Thus, the implementation of categorical management in the practice of marketing management of a retail enterprise as a strategic cooperation between a retail operator and a supplier, within which the parties manage the category as a strategic unit, will contribute to the growth of the category (increase in sales and profits) through a set of customer-oriented actions. The use of adequate tools of categorical product management will allow to adequately implement the product policy of the retailer, optimize the efficiency of resource potential use by increasing the degree of fulfillment of consumer expectations in the context of its features and trends.

Digital technologies and data analytics have become the basis of modern categorical management. Big Data, machine learning, and artificial intelligence (AI) tools enable retailers to more accurately forecast demand, analyze consumer behavior, optimize pricing, and make more informed decisions about assortment management.

Moreover, omnichannel marketing and sales are an integral part of the company's categorical management strategies. Consumers today use different channels for shopping: physical stores, online stores, mobile applications, social networks, etc.

Thus, the priority goals in product categorical management projects carried out jointly by a retailer and its key suppliers are the following indicators: growth of the category as a whole; increase in sales of the category in physical terms; reduction of the out-of-stock rate; reduction of inventory in the store; increase in category profitability; optimisation of shelf space and creation of a structured layout; simplification of the process of product selection by the customer through segmentation and navigation in the category; creation of a new image of the category through visual communications.

The effectiveness of this marketing technology has been proven by the experience of using it in retail chains in the US and Western Europe. We consider it appropriate to implement it at large retailers (retail chains). As for small trade enterprises, whose turnover, as noted, accounts for almost half of retail turnover, we believe that they can successfully implement some elements of categorical management, in particular approaches to building relationships with suppliers (manufacturers).

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**Section 2.**  
**MARKETING AND LOGISTICS IN THE CONDITIONS**  
**OF GLOBAL GEOPOLITICAL AND MILITARY CHALLENGES:**  
**A STRATEGIC DIMENSION**

# **INNOVATIVE AND INVESTMENT APPROACHES TO THE FORMATION OF THE ORGANIZATIONAL AND ECONOMIC MECHANISM OF ENTERPRISE ACTIVITY**

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Modern enterprises must adapt their business models by integrating innovations and investments to enhance efficiency, productivity, and sustainability. The implementation of cutting-edge technologies, such as artificial intelligence, automation, and digital platforms, has become a critical factor in ensuring competitiveness in both domestic and international markets.

Furthermore, contemporary economic challenges, including financial market volatility, rising energy costs, and global economic crises, introduce new barriers to business development. In this context, enterprises require flexible and efficient organizational and economic mechanisms that enable swift responses to changes, attract investments, and optimize resource utilization. Innovation-investment approaches promote the adoption of sustainable practices that not only improve economic performance but also align with environmental and social standards [1].

In the Ukrainian context, the integration of enterprises into the global economy and their resilience amid wartime and post-war transformations are particularly pertinent. Innovation-investment strategies allow enterprises to effectively leverage available resources, adapt to environmental changes, and attract additional funding sources for development. This, in turn, enhances their competitiveness, fosters the formation of new economic models, and strengthens the national economy.

Therefore, in a market economy, the interactive model of innovative entrepreneurial processes is crucial for the efficient functioning of enterprises. This model should be based on an "interactive model of managing the enterprise's innovation process," which considers the influence of both external factors (market

demands) and internal factors (technological infrastructure, organizational structure, and corporate culture).

It is essential to recognize that a well-developed and clearly defined mechanism is an integral part of entrepreneurial activity. In our view, the concept of a mechanism in economics has been well established, so we will not delve into extensive academic debates on its definition. According to Malyi I.R. and Nahorna I.I., "the mechanism is a decisive factor in the efficiency of an industrial enterprise, serving as a tool for achieving goals and fulfilling the tasks set before the enterprise" [2]. A mechanism represents a set of methods, tools, auxiliary resources, and effective instruments of entrepreneurial policy implemented systematically to achieve the desired results. Here, we refer to the mechanism of entrepreneurial activity formation in modern conditions.

For long-term success, an enterprise must be equipped with sufficient financial resources to produce goods in the required quantities to meet market demands maximally [3]. This encompasses the development of financial and innovation strategies and an efficient management system. Specifically, Siketina N. emphasizes the role of innovation strategies in ensuring enterprise competitiveness, detailing the management of innovation resources and intellectual capital to support sustainable development [4].

In her works, Pishenina T. highlights the necessity of considering the financial market in stimulating innovative development. She examines mechanisms for transforming national savings into innovation-investment resources and explores the financial environment's impact on enterprises' innovation activity [5].

Utkina Y.M. and Siusko K.Y. (2015) advocate for a comprehensive study of innovation-investment approaches to enterprise development, which significantly influence an enterprise's competitiveness [6].

The goal of financial strategies includes optimizing the formation and distribution of fixed and working capital and developing policies aimed at profit growth, cash flow management, investments, and innovations.

During the research, general scientific and specific methods were applied: scientific abstraction was used to build an interactive model of innovative entrepreneurial processes; inductive and deductive methods were applied for collecting, systematizing, and processing information on the external and internal environment; economic analysis and comparison were used to identify elements of the organizational and economic mechanism; graphical methods were employed for visual representation of the interactive model of innovative entrepreneurial processes; abstract-logical methods were applied for theoretical generalizations and drawing conclusions.

The study of innovation-investment approaches to forming the organizational and economic mechanism of enterprise activity was conducted in several stages. At the

first stage, the enterprise's external and internal environment was examined. The second stage investigated the components of the organizational and economic mechanism of entrepreneurial activity. At the third stage, restraining factors for developing the organizational and economic mechanism of entrepreneurial activity were systematized. Finally, at the fourth stage, the components of the organizational and economic mechanism were studied: managerial, financial, and innovative blocks.

Changes in the external and internal environment introduce new conditions that must be considered at every stage of innovation creation, including its complete transformation [7]. This process involves continuous learning from the innovative practices of other companies, focusing on value, external information, and developing the ability to assimilate and apply this knowledge for commercial purposes. This includes elements of digitalization, socially responsible principles, and sustainable development (Fig. 1).

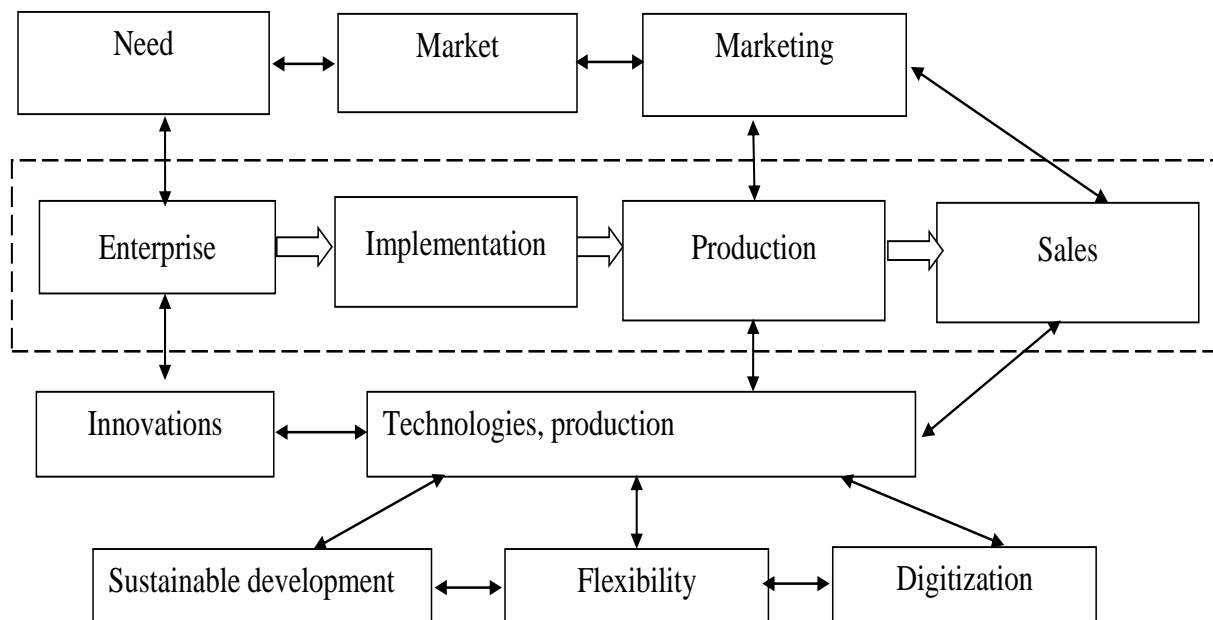


Fig. 1. Interactive Model of Innovative Entrepreneurial Processes  
Systematized by the author based on [7, 8].

Simplicity ensures ease of management, streamlines decision-making processes, and minimizes bureaucratic obstacles. In today's business environment, it is crucial to focus on core processes and avoid excessive complexity that can slow down operations. A transparent organizational structure, clear business models, and open communication among all stakeholders help prevent errors and ensure a high level of efficiency.



Innovations are a key factor that ensures the competitiveness and dynamic development of enterprises in the modern business environment. They enable companies to introduce new products, improve business processes, reduce costs, and quickly adapt to market changes. An innovative approach opens opportunities for entering new markets, increasing customer loyalty, and creating additional value for stakeholders.

Sustainable development, in turn, provides long-term stability and responsible resource use. Adhering to its principles helps reduce negative environmental impacts, foster social responsibility, and enhance resource management efficiency. This not only meets societal expectations but also creates opportunities for accessing preferential financing and attracting responsible investors.

The combination of innovation and sustainable development creates a synergy that allows businesses to achieve high economic performance while fulfilling their socio-environmental commitments. Innovative "green" technologies, circular business models, and transparent communication with stakeholders form a solid foundation for long-term success, maintaining competitiveness and trust in the market.

Flexibility, on the other hand, is a key factor in adapting to changes in the external environment. Businesses must be prepared to respond quickly to shifts in market conditions, the emergence of new technologies, and changes in consumer behavior. This entails the ability to swiftly restructure production processes, modify strategies, or even completely redefine the business model. A flexible approach allows companies to stay ahead of the curve, maintaining their competitiveness.

However, simplicity and flexibility must work toward achieving two main criteria—efficiency and effectiveness. Efficiency refers to the optimal use of resources to achieve maximum results with minimal costs. Effectiveness, on the other hand, involves meeting specific business objectives, such as increasing profits, enhancing customer satisfaction, or expanding market share. The combination of these criteria with a simple and flexible approach provides a solid foundation for a company's long-term success. We believe that the modern approach to entrepreneurship should be straightforward yet flexible. The main criterion for its construction is ensuring efficiency and effectiveness.

The modern approach to entrepreneurship considers not only the organization's interests but also the well-being and individual development of employees. It is characterized by an alternative approach and the ability to adapt quickly to ever-changing business realities.

Entrepreneurial activity is significantly more effective when it consists of interconnected actions aimed at achieving common goals and clearly defined strategic priorities, which form the organizational and economic mechanisms of enterprises.

Existing organizational and economic mechanisms of enterprise activity include various management elements and tools aimed at resource optimization, process efficiency improvement, and ensuring competitiveness. These mechanisms ensure coherence in the enterprise's operations. However, they also have certain limitations and barriers that may hinder efficient operations and development (Fig. 2).

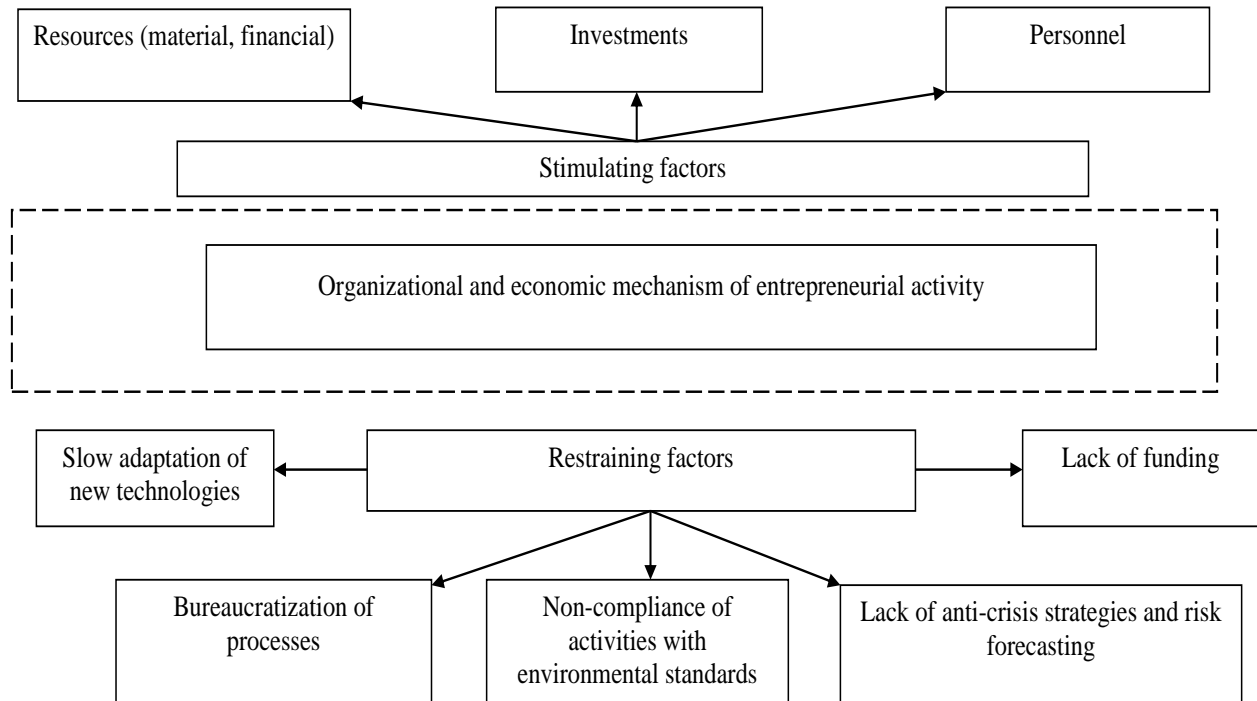


Fig. 2. Components of the Organizational and Economic Mechanism of Entrepreneurial Activity  
*Systematized by the author*

Among the elements of the organizational and economic mechanism of entrepreneurial activity, it is appropriate to highlight:

1. Resource Management (material, financial, and human resources) ensures effective resource allocation and encourages optimization. However, in modern conditions, there is a shortage of advanced technologies for automating resource accounting and planning; personnel are often unprepared for new management methods, and there is insufficient informatization of processes.

2. Financial Management and Investment Activity encourages a strategic approach to attracting investment and innovative approaches within the enterprise. However, there is a low capacity to attract external financing due to high risks or lack of credit history. This is caused by limited access to financial markets, economic uncertainty, high bureaucracy, and a constrained investment climate.

3. Motivation and Personnel Management System necessitates the development of corporate culture and innovative approaches to human resource management, especially in terms of training and employee development. However, current

challenges in enterprises include a lack of flexibility in personnel management, insufficient funds for training and skill development, and employee resistance to new technologies, which hinders innovative development.

4. Marketing Strategies and Market Tools drive changes in consumer behavior, increase product or service personalization, and promote the use of modern approaches to market research.

Furthermore, the following restraining factors affect the development of the organizational and economic mechanism of entrepreneurial activity:

Slow adaptation of new technologies, insufficient innovation funding, and weak coordination between scientific research and production processes stem from a lack of adequate infrastructure for innovation implementation, high costs of new technologies, and insufficient government support.

Bureaucratization of processes, slow decision-making, lack of transparency in task distribution, and ineffective coordination between departments indicate that internal processes do not meet modern management standards and face resistance to change from both leadership and staff.

Insufficient readiness for unexpected market changes, lack of crisis strategies, and risk forecasting highlight the absence of risk management specialists, low adaptability of enterprises to changes in the economic environment, and high vulnerability to external shocks.

Non-compliance with environmental standards, weak environmental risk management, and insufficient attention to sustainable development result from high costs for environmental innovations, lack of regulatory support, and low environmental awareness among both staff and leadership.

Overall, the main weaknesses of existing organizational and economic mechanisms in business operations lie in the underdeveloped systems for managing resources, finances, and innovations, which reduce operational efficiency and competitiveness. Barriers are evident in the form of limited access to modern technologies, weak digitalization of processes, lack of funding, and infrastructural constraints that hinder the full implementation of innovative solutions. Overcoming these barriers is possible through the reform of organizational structures, the improvement of management practices, and the development of comprehensive development strategies, including the integration of innovative technologies and sustainable development mechanisms.

The direction of the innovation strategy is determined by the financial capabilities of the enterprise. The financial strategy is directly related to the management and innovation strategies and is one of the key structural components when developing investment and innovation competitive strategies, as well as the foundation for determining the further actions of entrepreneurs. In this regard, the

effectiveness and competitiveness of the enterprise's strategy depend on its production, financial, and marketing capabilities. The most important elements for the success of the innovation strategy include the availability of necessary finances, efficient production, and the use of marketing mix components. Ultimately, each of these components ensures the stable operation of entrepreneurial activity depending on the time frame. Collectively, these components form the organizational and economic mechanism for the formation of entrepreneurial activity.

According to Malyi I. R. and Nahorna I. I., the organizational and economic mechanism of an enterprise is a component of the economic mechanism, a system of organizational and economic methods combining production, organizational, and financial-economic processes that occur at all management levels, contributing to the growth of competitiveness [2]. According to Chepurko V. V., "the organizational and economic mechanism of an enterprise is the result of the action of a system of internal and external factors influencing the functioning and development of the enterprise, reflecting a complex system of various economic relations" [9].

Chepurko V. V. argues that the main function of this mechanism is the implementation of the process of developing, making, and executing management decisions aimed at achieving the enterprise's set goals. The object of the organizational and economic mechanism's influence is the enterprise's potential, and the ultimate goal of its functioning is to achieve effective business results [9].

Kutsenko A. V. outlines three characteristics of the organizational and economic mechanism:

- 1) elemental, in which the mechanism is an organizational system of interconnections between the relevant structural elements of the enterprise;
- 2) functional, defined as a set of types of economic activities aimed at achieving specific goals and objectives;
- 3) process, which characterizes the mechanism as the process of preparing and making the corresponding management decisions [10; p. 14].

The components of the organizational and economic mechanism include management, financial, and innovation blocks.

The management block primarily consists of traditional components, which have their specific content depending on the field of entrepreneurial activity. The management block involves setting goals (effective implementation of the mechanism for forming entrepreneurial activity) and strategic objectives (achieving positive results that ensure the implementation of the overall strategic goal). It includes:

- a) expanding and effectively managing entrepreneurial activity, which requires alignment with the principles of sustainable development and market flexibility;
- b) strengthening competitive positions and increasing export volumes;

c) improving the efficiency of economic activity, including by entering foreign markets;

d) enhancing investment, financial, and marketing activities, as well as management effectiveness;

e) increasing direct foreign investment in domestic production and improving entrepreneurial activity.

The financial block is designed to create, compare, store, and report on various types of financial transactions. Its primary goal is to account for money. It is important to understand that no organization can function effectively without using software to track financial incomes and expenses. At a minimum, every organization requires a system to manage cash flows of incoming and outgoing payments. However, a truly effective financial management system does more than that. It optimizes profits, measures cash flows, determines tax liabilities, ensures regulatory compliance, and supports the long-term stability of the company.

A financial management system must track and control the company's funds, protecting critical data from theft, fraud, and other malicious activities. If the financial management solution includes risk management and regulatory compliance, companies can leverage these capabilities not only for audits and error checks but also for the segregation of duties and distribution of roles and responsibilities throughout the organization.

Modern organizations require innovative ways to utilize financial data to improve profitability, optimize operations, and enhance decision-making processes. Reporting, data extraction, and monitoring functions have become especially important in recent years. The requirements for reporting in financial management systems align with business needs. At a minimum, any company requires monthly, quarterly, and annual reports, as well as key financial statements on income, expenses, and balances. While this data has always been available for extraction, configuring and modifying reports to meet other needs has been challenging.

An important aspect of modern businesses is the use of artificial intelligence (AI). This approach also signals competitive advantages in a dynamic market environment. AI allows for the automation of complex processes, including the processing of large volumes of data (Big Data), which can be used for deep analysis of market trends and consumer behavior. As a result, businesses gain the ability to make quick and informed decisions, enhancing the timeliness and accuracy of management.

The integration of AI into production processes helps increase productivity and reduce costs. Through machine learning and robotics, companies can automate routine operations, minimizing human errors. For example, manufacturing companies use AI to predict technical malfunctions and optimize equipment performance, significantly reducing downtime.

In marketing, the use of AI opens new opportunities for personalizing customer interactions. By analyzing consumer data, businesses can create individualized offers, increasing customer satisfaction and loyalty. Artificial intelligence is also actively used in recommendation systems, chatbots, and virtual assistants, which ensure convenient and efficient communication.

Additionally, AI plays a key role in improving business security. AI algorithms can identify anomalies in user behavior, enabling the timely detection of cyberattacks or data breaches. This is particularly important for companies handling confidential data or engaged in e-commerce operations.

Lastly, AI contributes to the development of innovative business models and management approaches. Companies can create new products and services by leveraging data and analytics to drive innovation. In the face of global competition, AI has become an integral part of sustainable development strategies, ensuring long-term effectiveness and adaptability for businesses.

Thus, in the rapidly developing world of business, the use of AI reduces the time spent on report generation. Therefore, obtaining real-time financial data on demand is not just an additional function but a key requirement for financial management software. In this context, it's also worth mentioning the ability to conduct detailed data analysis, utilize visualization tools, increase transparency in operations, and generate reports with descriptive text.

The innovation block is defined by the economic effect and the selection of the most optimal ways to implement innovations. This requires, on the one hand, exceeding the final results from their use over the costs of development, production, and implementation, and on the other hand, comparing the obtained results with those from applying other similar innovations.

Moshlyak I.O. argues that the efficiency of a company's investment activities will be enhanced by the following factors:

- Optimal combination of centralization and decentralization in investment management;
- Development of new goals and objectives for improving the organization of analytical support and the methodological apparatus for investment management;
- Continuous improvement of investment management;
- Interaction and reasonable regulation;
- Matching the work character to the potential capabilities of the performer;
- Evaluation of investment projects considering risk factors, liquidity, and inflation [11].

Effective formation of the organizational-economic mechanism is impossible without attracting investments. Investments provide the financial foundation for modernizing production capacities, implementing innovative solutions, and developing

new areas of activity. In modern conditions, it is important not only to attract capital but also to use it rationally through the optimization of investment projects.

Innovations ensure the company's adaptation to rapid changes in the market environment. The implementation of new technologies, such as process automation, the use of artificial intelligence, and big data analysis, contributes to the optimization of activities. The innovative approach also allows for the creation of high-value-added products, enhancing the company's market position.

It should be noted that innovations and investments interact within a unified system that forms the basis for sustainable business development. Innovative-investment approaches contribute to the formation of stable competitive advantages, improving operational efficiency, and ensuring financial stability.

The main challenges in implementing innovative-investment approaches are the need for significant financial investments, risks of uncertainty, and resistance to change from employees. However, if these approaches are successfully implemented, companies can achieve significant results in improving their efficiency, resilience to external changes, and long-term profitability.

The investment-innovation policy of a company should define measures that comply with the requirements of legal acts, determine the system of interaction between investment policy and finance, pricing, marketing, etc., ensuring the achievement of economic, social, and environmental effects; rational use of financial resources allocated for implementing investment projects; obtaining maximum returns from investments with minimal investment costs; efficiency in the use of budget financing, guarantees, etc.; minimizing investment risks associated with implementing the business plan of the investment project.

One of the most important factors influencing the development of entrepreneurial activity is the tax system. High tax burdens cast a significant shadow on entrepreneurial activity and complicate the management of such enterprises. This is particularly relevant in the early stages of a company's business formation. Therefore, it is necessary to reduce the tax burden on the company. Thus, it can be concluded that the current tax burden is a limiting factor for the development of entrepreneurial activity.

An important factor in the development of entrepreneurial activity and strengthening the competitiveness of domestic production is the introduction of a system of tax incentives for investment in companies that use innovative technologies.

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# **LOGISTICS SERVICE LEVEL OPTIMIZATION FOR «NOVA POSHTA» CUSTOMERS**

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In today's conditions, the company increases its competitiveness not only due to the capital-intensive production development of a new product or new services provision, but also as a improving result of service characteristics quality that are significant for the client. Therefore, in order to increase their competitiveness, the number of enterprises that rely on logistics services is growing. After all, when there are several suppliers of identical goods/services on the market, preference will be given to the one who is able to provide a higher service level. The rapid economic enterprise growth will ensure a clear concept formation of logistics service system, the basis of which is the service analysis, which will help to solve the problems faced by companies in market business conditions [1].

Logistics customer service is a set of processes and actions aimed at meeting the customers needs and expectations in the goods and services supply context. This includes managing all aspects of the logistics chain to ensure quality customer service, on-time delivery, inventory optimization and effective customer interaction. The main goal of logistics customer service is to increase customer satisfaction and loyalty, which can lead to increased sales and a company's positive image [2].

Consumers logistics service is considered as an important element of the servicing process, which allows to ensure a sufficient level of consumer needs satisfaction due to the effective costs level in supply chains: customer service, transport, inventory management, warehousing, material processing, packaging, information flow and order processing, maintenance [3].

The main formation principles of logistics service systems for consumers can be attributed to the following principles: information consistency, resource, technical, personnel, financial and other service system characteristics; system stability; general system approach; optimization, integration and coordination of logistics processes. A company's logistics customer service management is a strategy and practices aimed at ensuring efficient and satisfactory customer service through the logistics supply chain. Today, in the logistics enterprises development, the customer orientation issues and logistics service level optimization requires significant attention, which will help retain existing customers and attract new ones.

The essential characteristics and critical analysis of scientific and practical approaches to the terms «logistics service» and «logistics maintenance» definition were

conducted by scientist O.M. Kryvoruchko in work [2]. The author notes that the logistics service processes to consumers are equivalent to the processes of service provision. They include the customer orders analysis, the projects development for the provision of logistics services (technical tasks and the provision process), the search for compromise solutions under multivariate methods conditions of service provision, establishing and ensuring the necessary quality, coordination, design and services delivery to consumers. The basis of logistics service processes is personnel (service specialists must have professional service skills), means and service conditions.

The actions sequence that make it possible to form a logistics service system and indicators that have an impact on the logistics service company choice by consumers was developed by the researcher K.V. Melnykova [4]. The author emphasized that thanks to the optimization and improvement of logistics service to consumers, it is possible to increase profits, attract new customers, improve the enterprise image and ultimately increase its competitive advantages.

The need to introduce organizational, technological and digital innovations in logistics activities as a prerequisite for adaptation to modern trends of global socio-economic development was considered by scientist N.V. Ivanova, on the basis of which the strategic priorities of innovative development of logistics services at enterprises were determined [5].

The authors Kushnir O.K. and Kryl O.V. research was conducted on the delivery service market, which is growing every year due to the e-commerce development, marketing and the innovations emergence. The need for product delivery was determined according to the optimal criteria: speed, convenience, availability, and an assessment of these criteria was carried out among the main players of the delivery market [6]. The comparative characteristics of innovative measures to increase the logistics service level of main market players were carried out by the authors N.I. Horbal, Y.O. Sharovs'kyi and Yaroshenko V.V. [7].

The main drivers of «Nova Poshta» Ltd. success in the delivery market were analyzed by many scientists and researchers, but the most thorough analysis of the company's activities and the main indicators dynamics of the logistics service quality for «Nova Poshta» Ltd. clients were conducted by the authors V.V. Hurochkina and Yosyfchuk Y.M. [8].

The conducted scientific studies are not sufficient in the area of logistic service level optimization in the delivery services field. This monograph section will be devoted to this task solution using «Nova Poshta» company example.

To implement the tasks, the empirical research method was used, based on the respondents survey (questionnaire) and the method based on the expectations level assessment, as well as the definition of the perception forming process of the service (Servqual). The Servqual (Service Quality) method authors claimed that service quality

is determined by the discrepancy between the client's perception after consuming the service and his expectations regarding the actions offered to him, this method basis is the «Expectation-Perception» (Expectation-Perception, E-P) algorithm [9].

Perception in the methodology is considered as a measurable attitude of the consumer to the service he received. The Servqual methodology described above aims to determine a general quality indicator that comprehensively reflects the difference between the consumer's perception of service quality and the level of his expectations. It is based on the assumption that the main reason for poor quality and consumer dissatisfaction is a gap between the characteristics of the service provided and consumer expectations. It consists in its detection, recognition, limitation and elimination.

Today, the Ukraine postal market is growing, because in connection with the rapid development of society informatization, as a result of which orders via the Internet are growing more and more, the demand for postal shipments is increasing. In general, the delivery market in Ukraine has been growing in recent years. There are many private postal and logistics operators that deliver correspondence within one or two days. At the same time, with a renewed team and new plans, the traditional state-owned «Ukrposhta», which is a member of the Universal Postal Union, is also afloat [7].

Recently, high growth rates have been observed in the field of courier, express delivery and parcel delivery (CEP) all over the world, and in particular in Ukraine. E-commerce is a major driver of CEP market growth, generating significant revenue for the industry.

Ukrainians annually increase the number of received and sent parcels. According to the State Statistics Service (State Statistics) data, in 2018 the services volume in the field of postal and courier activity increased by 23% to 7,55 billion UAH. 27% of services were received by the population, 66% by enterprises. One of the most important engines of this process, as in the whole world, is the-commerce development. Ukrainians increasingly order goods through domestic and foreign Internet sites. But along with the increase in quantity, the quality, speed and reliability of delivery should remain at the usual level [10].

The industry is growing mainly due to e-commerce. Every year, Ukrainians increase the number of purchases in Ukrainian and foreign online stores by 40%. But the potential for development is still great. For example, Polish customer buy three times more in online stores than Ukrainians. In Poland, 70% of the population makes such purchases. In Poland, people buy about 22 parcels per year. In Ukraine - seven parcels per year. There is a significant potential and perspective for the industry growth [11].

For 2021 the number of B2C parcels in the European Union reached 10 billion - this was a new record. Under conditions of "normal" market development, this volume

would amount to more than 20 billion parcels in the European Union and Great Britain already in 2025, and approximately 40 billion by 2029 [11].

Currently, there are many delivery services operating within the country and abroad. Orders through numerous online stores resulted in the delivery services activation and an increase in the companies number providing these services. According to the Marketer.ua study, which was conducted in May 2021, according to certain criteria (service popularity (in % ratio); transportation prices; order delivery times; branch network breadth; work schedule; automation of information processing processes and integration with other services; convenience and functionality of the site; mobile application availability; the absolute leaders of the express delivery market is «Ukrposhta» [12].

«Ukrposhta» was a postal services market monopolist in Ukraine for a long time. However, since 2015, there has been a significant increase in the activity of other competing companies, including «Nova Poshta», in the postal services market of Ukraine (Table 1). After all, there was a rapid «Nova Poshta» company expansion and, accordingly, an increase in the volume of cargo transportation, which became especially noticeable in 2019. In 2016, «Nova Poshta» equaled «Ukrposhta», reaching a market share of 44%, surpassing its rival by 1%. This is due to carefully thought out service, innovative solutions implementation, convenient mobile applications and, most importantly, faster delivery times. In addition, international delivery was implemented, as well as its own payment system [8].

After the pandemic, the next challenge for the Ukrainian express delivery market was war. So, in particular, with the war beginning, more than 2,500 «Nova Poshta» employees went to defend Ukraine, more than 20 branches were destroyed, the company suffered losses of half a billion UAH, but despite this, the company continued its activities, looking for ways for survival and functioning in the market. An innovation in the company's activities was the creation of a special headquarters for managing business processes, which made it possible to establish logistics routes between branches and distribution centers. In addition to cargo delivery, the company's employees were engaged in consulting regarding the opening of branches, working hours, the transportation of equipment and warehouse complexes from dangerous regions was organized. A significant contribution was made by «Nova Poshta» to the humanitarian flows formation and optimization, namely the company was involved in the humanitarian cargo transportation for volunteers, philanthropists, public organizations, civilians and military [12].

The best logistics companies in the delivery field in Ukraine are presented below (Table 1).

Table 1

## The main logistic delivery services market players in Ukraine

Company	Description	Advantages	Disadvantages	Covering	Delivery time	Delivery cost
Nova poshta	The leading delivery service offers fast and reliable delivery throughout Ukraine	Fast delivery, developed branches network, online tracking status of parcels	The delivery cost is higher, there may be queues in branches	Whole Ukraine	1-2 days	55 UAH and higher
Ukrposhta	The National Post Office of Ukraine offers a wide range of postal services	A large network of branches, low cost of delivery	Slower delivery, less control over the status of packages	Whole Ukraine	2-5 days	45 UAH and higher
Meest	Delivery service specializing in international and domestic services	High quality service, available international shipments	Not always fast delivery, less quantity of branches	Whole Ukraine	1-4 days	Depending on the route
Justin	A new delivery company that offers affordable rates and creative approaches to service	Favorable rates, creative delivery methods	Less quantity of branches	Whole Ukraine	1-2 days	50 UAH higher

*Source: developed by the author based on [13]*

The postal market leader in Ukraine today is «Nova poshta» with a market share of 65%, which has been operating on the market since 2001. The Nova Poshta network includes 11,400 branches across the country (up to 5, 10, 30 kg and cargo branches) and more than 15,000 post machines. As for delivery prices, here they start from UAH 55. The cost depends on the dimensions of the shipment, its weight and whether the parcel is sent across the city, within the region or across Ukraine. In delivery terms, it is usually one day. Within the same city, it can be obtained on the same day (a more accurate date can be calculated on the website). The parcel can be tracked on the website by the invoice number, as well as in the «Nova Poshta» mobile application, where you can also pay for the goods online. «Nova Poshta» has developed loyalty programs, with the "Increase opportunities" program help, customer can accumulate special bonuses-discounts and points, and later use them to pay for delivery services [14].

In general, the following driving forces can be distinguished in the postal market in today's conditions [11, 14]:

- An offer to buyers to reduce the services price - a price reduction with the help of a VAT refund, provided that goods are purchased in foreign online stores.
- The conquering the market possibility by developing a post offices network, increasing the number of cells in them and installing them outside buildings for a wider customers range and accessibility.
- B2B goods forwarding, i.e. transportation of goods from business to business by pallets.
- Forwarding parcels between private individuals, for example, from the Ukrainian diaspora to Ukraine.
- Money transfers between bank cards.
- Infrastructure development, sorting centers automation to speed up the shipments processing.

The logistics delivery services quality research of «Nova Poshta» Ltd. was conducted among the firm's clients using the empirical survey method. A two-part questionnaire was chosen as the observation instrument. Each part includes 15 questions, which are equally distributed by group (material component (tangibility), reliability, sensitivity, professionalism and empathy). In the first part of the questionnaire, the question was asked: how important are certain aspects of delivery services field to you? The second part contained answers to the question: How do you rate the quality of the services provided? The respondents filled out the first part of the questionnaire before the need for delivery services arose and assessed the essence degree of their expectations regarding the specified service. The second part of the questionnaire was filled out by the guests after the provided services in the field of delivery, evaluating the perceived quality. The conducted research results made it possible to present the results in absolute values for a selected sample of 112 respondents. The research results regarding the of logistic servicing level of delivery service expected and received by the respondents from «Nova Poshta» are presented in Tables 2 and 3. Values in the first table: 1 - definitely not important, 2 - not important, 3 - difficult to answer, 4 - important, 5 - very importantly.

Table 2

The answers results to the question: How important are the logistics service components of the delivery service to you?

Criteria	№	Indicators	Points					Average value
			1	2	3	4	5	
Tangibility	1	Evaluate the importance for you when choosing a delivery company of an application presence for tracking the parcel	0	0	3	2	11	4,5

	2	Evaluate the interface importance, convenience and simplicity when using the application	0	0	1	5	10	4,5
	3	Evaluate the importance of the post offices convenient location for you	0	0	0	4	12	4,75
	4	Evaluate the importance of the receiving cargo process at the delivery point and staying there for no more than 10 minutes (no queues and more working reception points)	0	0	2	3	11	4,5
Reliability	5	Evaluate the importance for you of packaging compliance with company standards	0	0	4	5	7	4,1
	6	Evaluate the importance of goods delivery speed	0	0	0	3	13	4,81
	7	Evaluate the importance for you of a responsible and careful attitude to your orders	0	0	1	3	12	4,68
Sensitivity	8	Evaluate the importance for you of having couriers and door-to-door delivery	0	3	3	5	5	3,75
	9	Evaluate the importance for you of compensation for a delay in delivery or damage to the product	1	8	1	6	8	5,25
	10	Evaluate the importance of being able to cancel or change your delivery at no additional cost	0	0	2	5	9	3,81
Professionalism	11	Evaluate the importance for you of qualified and knowledgeable staff serving you	0	1	3	5	7	4,12
Empathy	12	Evaluate the importance for you of the company's quick response to customer reviews and providing feedback	0	1	3	6	6	4,06
	13	Evaluate the importance for you of company's quick response to your requests and complaints	1	0	2	4	9	4,25
	14	Evaluate the importance of being able to ask for advice from customer support at any time	0	2	3	7	4	3,81
	15	Evaluate the importance for you of providing a discount or special offers for regular customers	0	1	5	6	4	3,81

Source: own research



In the table 3, the quality parameters were determined according to the following scale: 1 – very bad, 2 – bad, 3 – difficult to answer, 4 – good, 5 – very good.

Table 3

Answers results to the question: How do you rate the quality of services provided by «Nova Poshta»?

Criteria	№	Indicators	Points					Average value
			1	2	3	4	5	
Tangibility	1	Rate the Nova Poshta application (namely, the ability to track a parcel)	0	0	1	7	8	4,43
	2	Rate the convenience and ease of New Mail application use	0	0	1	6	9	4,5
	3	Rate the convenient location of post offices	0	0	2	6	8	4,3
	4	Rate your time at the drop-off point (queues/absence of queues)	0	0	7	6	3	3,75
Reliability	5	Rate packaging compliance with company standards	0	0	5	8	3	3,8
	6	Rate the product delivery speed from «Nova Poshta»	0	0	1	6	9	4,5
	7	Rate your orders treatment based on the responsibility and caution factors	0	1	4	6	5	3,93
Sensitivity	8	Rate the work of couriers and door-to-door delivery	0	0	2	10	4	4,12
	9	Rate compensation for delays in delivery or damage to it from the company	1	3	2	5	5	3,62
	10	Rate the option to cancel or replace the delivery at no additional cost	0	2	1	5	8	4,1
Professionalism	11	Rate the staff qualification and knowledge in the field of services you ordered	0	0	2	9	5	4,1
Empathy	12	Rate the company's quick response to customer reviews and feedback	0	1	3	8	4	3,93
	13	Rate the company's quick response to your complaints and requests	0	1	4	5	6	4
	14	Rate the opportunity to ask for advice from customer support at any time	0	2	4	5	5	3,81
	15	Rate the discounts or special offers availability for regular customers	0	1	6	6	3	3,68

Source: own research

The research results show (Table 2) that for the majority of «Nova Poshta» customers, the factor of quick delivery from the category «reliability» and compensation for delays in delivery or its damage from the company from the category of importance and the highest weight (before using the company's services) is the «sensitivity» of the Servqual method. The criteria from the category «sensitivity» and «empathy» received the lowest values, that is, the respondents do not need to cancel or change the delivery without additional costs or receive discounts and special offers as a regular customer.

When using «Nova Poshta» delivery services, the respondents indicated their evaluations of the services they were able to use (Table 3).

The criteria from the category «tangibility» and «reliability» took the highest values in the rating, namely the quick delivery of «Nova Poshta» and the convenience and ease of company's application use.

The conducted results analysis proves that the most important groups of criteria for evaluating the quality of delivery services are: empathy, tangibility and responsiveness. Such components as the quick delivery, compensation for delays in delivery or its damage, convenience and ease of application use are directly related to the service quality. No less important in evaluating the criteria were: convenient location of post offices, responsible and careful attitude to orders, availability of an application for order tracking. The results obtained by this method can acquire positive or negative values. The value «0» symbolizes the expectations fulfillment; positive values mean exceeding requirements, and negative values mean unsatisfied customer needs. The smaller the measurement with the «minus» sign, the less the service meets the buyers requirements. Instead, an increase in the positive value of the Servqual indicator indicates an improvement in the service performance, the usefulness of which in the customers eyes is increasing. The Servqual method makes it possible to conduct both a general evaluation of a logistics product quality and its individual features, which are described by assessment criteria (Table 4).

Table 4 presents the analytical results of calculating the identified factors differences that affect the delivery services quality. In the investigated case, negative results were obtained, that is, the respondents expectations turned out to be unrealizable.

The biggest gaps in relation to the unrealized expectations of the client were found among the following criteria:

- Convenient location of post offices (-0,46);
- Time spent at the issuing point (queues) (-0,75);
- Careful and responsible attitude towards the order (-0,75);
- Compensation for delivery delays or damage (-1,63).

Table 4

### The differences value in terms of categories and groups

		Expected quality (E)	Perceived quality (P)	Difference E-P	Gap
Tangibility	1	4,5	4,43	- 0,07	-0,32
	2	4,5	4,5	0	
	3	4,75	4,3	- 0,46	
	4	4,5	3,75	- 0,75	
Reliability	5	4,1	3,8	-0,3	-0,45
	6	4,81	4,5	- 0,31	
	7	4,68	3,93	- 0,75	
Sensitiveness	8	3,75	4,12	0,37	-0,32
	9	5,25	3,62	- 1,63	
	10	3,81	4,1	0,29	
Professionalism	11	4,12	4,1	- 0,02	-0,02
Empathy	12	4,06	3,93	- 0,13	-0,51
	13	4,25	4	- 0,25	
	14	3,81	3,81	0	
	15	3,81	3,68	- 0,13	

One of the significant disadvantages of «Nova Poshta» is the long queues associated with only one employee work at the delivery point. In the second place of disappointment among the respondents is a careful and responsible attitude towards orders, or rather the lack of it, because it was often necessary to receive damaged or improperly packaged goods. Some respondents were also disappointed by the location of post offices, which were inconvenient or not nearby.

Among the biggest gaps that reflect exceeding expectations can be noted:

- Work of couriers and door-to-door delivery (0,37);
- Ability to cancel or replace delivery without additional costs (0,29);

Part of the respondents who used the couriers services were positively impressed by the services provided.

The gaps value according to the defined criteria of Servqual method presented on Figure 1.

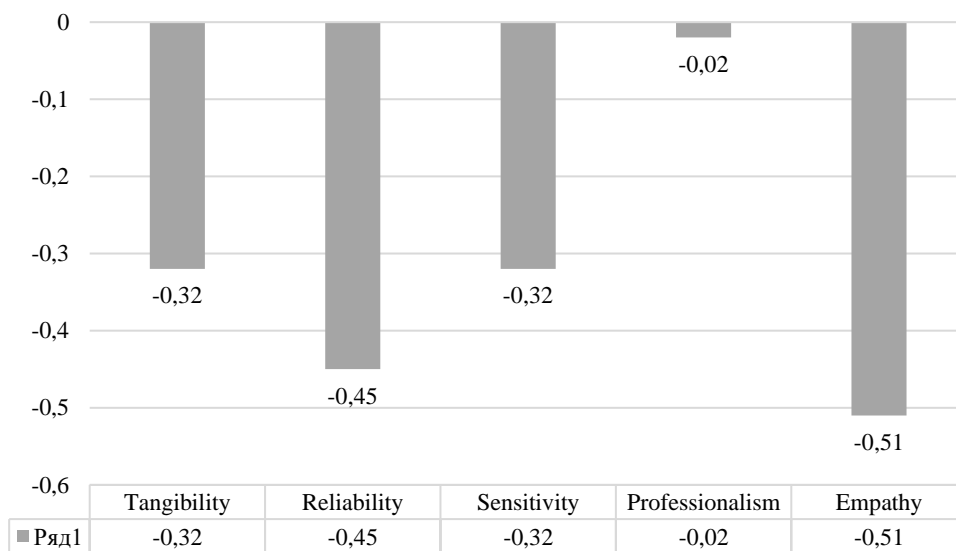


Fig. 1. The gaps value according to the defined criteria of Servqual method

The discrepancy between the respondents' expectations and the perception of delivery services quality level turned out to be quite significant. The negative value of the professionalism criteria indicates the meticulous attitude of customers to the service level, the feeling that customers do not feel the services and opportunities offered by the company, etc. Based on the identified gaps, management can decide which criteria need to be improved and which are their strengths. Such information particularly sheds light on personnel issues, that is, how professional the staff are and how well they perform their duties.

Logistics service for delivery services consumers in modern operating conditions has certain problems and shortcomings. This is primarily due to the lack of proper logistics infrastructure, lack of qualified personnel, lack of proper financing and, finally, imperfect use of logistics principles in the logistics services management. Most businesses realize that by optimizing and improving logistics service for consumers, it is possible to increase profits, attract new customers, improve the enterprise image and ultimately increase its competitive advantage. It is possible to achieve a high level of logistics service thanks to the use of Servqual-type methods in company activity, which is based on the expectations level evaluation, as well as the determination of forming the perception process of the service. With the help of this method, applied to the delivery services of «Nova Poshta», the largest gaps in relation to the unrealized

expectations of the client were established among the following criteria: convenient location of post offices (-0,46); time spent at the delivery point (queues) (-0,75); careful and responsible attitude to the order (-0,75); compensation for delivery delays or damage (-1,63). Improving these criteria will allow optimize the logistics service level of «Nova Poshta» and increase customer loyalty and satisfaction.

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# **OIL PRODUCTS MARKET TRENDS AND THEIR IMPACT ON THE NATIONAL SECURITY OF UKRAINE**

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The study of oil product market trends and their impact on national security is an urgent task that requires a comprehensive approach and consideration of various factors affecting the country's stability and development. Ukraine largely depends on the import of oil products, which makes it vulnerable to external economic and political factors. Fluctuations in prices on the world markets of petroleum products, changes in supplies, as well as geopolitical risks can directly affect the economic stability of the country.

Therefore, the market of oil products is the main component of the energy system of the country, and the trends of this market affect the level of energy independence, which is of critical importance for the stable functioning of state institutions and the armed forces of Ukraine.

Note that due to its geographical position, Ukraine often faces pressure from neighboring countries, which affects access to oil products and energy resources. Control over oil markets is an instrument of geopolitical influence, and therefore the analysis of trends in this market is important for understanding potential threats to national security.

In modern conditions of war, Ukraine's infrastructure for the supply and storage of oil products needs modernization, and its stability directly affects the country's ability to respond to crisis situations. Instability in the oil market can cause economic shocks, affecting key sectors of the economy.

Given the presence of own oil deposits and the possibility of their extraction, it is important to understand global and regional trends in order to effectively plan the development of own production and minimize dependence on imports.

The market for petroleum products consists of suppliers of raw materials (oil), refineries, distributors, traders, end users (industrial enterprises, transport companies, gas stations), as well as regulatory bodies that control prices, quality standards, and environmental standards. It is characterized by several features, in particular, high dependence on imports, since domestic production does not cover national needs.

The study of the oil products market is key to ensuring the stability of the economy, increasing the competitiveness of the national market and reducing external risks. The market for petroleum products is constantly changing due to global trends, technological innovations and government regulation. Effective market management requires regular analysis of the impact of these changes on prices, supply and demand, and the competitive environment. Ukraine largely depends on the import of oil products, which makes the market vulnerable to external factors: fluctuations in oil prices, geopolitical risks, supply restrictions. Market research helps identify ways to diversify supply sources and reduce import dependence. Many domestic and foreign scientists reveal trends in the oil products market. In particular, in works Kapustyana V.O. and Siretska I.O. the main problems of the oil products market are highlighted, focusing on infrastructural deficiencies, price instability and import dependence. At the same time Kosar N.S. and Yarychevska Ya.I. analyze the threats to operators of the light petroleum products market, among which are increased competition, regulatory changes and foreign economic challenges. At the same time Kuzio N.E. and Kosar N.S. pay attention to the long-term trends of the market of light petroleum products and the issue of energy security. The authors emphasize the importance of diversification of supplies and development of internal capacities. The article by V. Omelchenko analyzes the consequences of crisis phenomena and provides recommendations for stabilizing the market. In the works of Magas V.M. and Kantur K.S. the issues of competitive policy on the market of petroleum products are investigated, taking into account both national and regional aspects. Their works detail the specifics of competition regulation in local markets, pointing out the need to improve antimonopoly legislation. It is also appropriate to pay attention to the works of V.S. Melnychuk. and A.V. Melnychuk, within which the authors analyze factors influencing the pricing of petroleum products, such as currency fluctuations, world oil prices, and tax policy. At the same time Maslak O.I. offers ways to improve competition regulation, emphasizing the need for transparent rules of the game for all market participants.

We will also note the interest of scientists in this problem during the war. In particular, Kuyun S., Kurgan N., and Marchenkov I. emphasize key changes in the operation of the fuel market in 2024. Their research highlights the adaptation of operators to new economic realities, changes in the structure of supply and demand, as well as the role of state regulation in ensuring stability.

The methodology provides a comprehensive approach to market analysis, which allows you to gain a deep understanding of its dynamics and influencing factors. The conducted research is based on the analysis of secondary sources, such as official statistics, reports of analytical companies, articles by scientists and publications in specialized publications. Quantitative analysis is used when calculating indices of turnover of goods in various sectors. Changes in indicators are analyzed by month to



reveal seasonal fluctuations and their causes. Such data are presented in the form of tables and graphs that demonstrate market dynamics. A study of global oil prices, currency fluctuations, geopolitical risks and regulatory changes, their impact on import dependence and pricing is studied through a comparison of historical and current data.

A comparative analysis of regional and international indicators provides a study of the structure of the oil products market in Ukraine in comparison with other countries of the region. This makes it possible to identify the competitive advantages and disadvantages of the national market, to assess the level of its technological development and the effectiveness of state regulation. The use of trend models makes it possible to predict the future development of the market, in particular the impact of changes in government policy and external conditions.

The main suppliers of petroleum products are the countries of Europe and the Middle East, which increases the country's vulnerability to external fluctuations in world markets. Imports of petroleum products, particularly diesel and gasoline, make up a significant portion of the market, making it sensitive to currency fluctuations and geopolitical risks.

Another feature of the market of oil products in Ukraine is insufficient modernization of oil refineries, which limits the possibilities of domestic production. The low level of technological infrastructure renewal reduces the competitiveness of Ukrainian oil refining enterprises on the world market. As a result, the share of imported oil products remains consistently high, which affects the pricing and availability of fuel for consumers. In addition, the market of petroleum products in Ukraine is subject to significant regulatory changes by the state, which can create both positive and negative consequences. Government regulation of prices, excise duties and customs duties can change economic conditions for market participants, including oil traders and end consumers. On the one hand, such measures can contribute to the stabilization of prices, but on the other hand, they can reduce the investment attractiveness of the market.

Analyzing the commodity turnover indices of the oil products market in 2023, one can notice significant fluctuations in various sectors, which indicates the instability of the market. Significant changes are observed in the mining and quarrying industry, where significant decreases in January (93.5%) and April (90.9%) alternate with significant increases in March (119.8%) and June (115.1%). This indicates the influence of external factors, such as fluctuations in world oil prices, changes in supply and political risks affecting the stability of production and turnover.

In general, during 2023, we can observe fluctuations in oil product turnover indices (Table 1).

Table 1

Indices of turnover of petroleum products market in 2023, % compared to the previous month\*

	January	February	March	April	May	June	July	August	September	October	November	December
Mining and quarrying	3.5	05.5	19.8	0.9	05.5	15.1	7.4	07.5	8.7	7.6	14.8	01.7
Extraction of crude oil and natural gas	2.2	02.2	09.1	9.4	16.5	25.7	6.3	19.6	4.3	6.8	31.4	3.2
Processing industry	3.4	07.6	26.2	0.5	09.8	02.3	3.9	05.7	8.3	01.3	03.9	07.4
Production of oil refining products	9.6	1.4	23.5	6.0	06.8	1.2	6.8	26.5	5.6	6.1	21.8	3.0

\*The data are given without taking into account the territories temporarily occupied by the Russian Federation and part of the territories where hostilities are (were) taking place

Regarding the production of oil refining products, significant fluctuations are also observed here. A sharp decrease in January (69.6%) and August (81.2%) is especially noticeable, indicating possible problems with the production or supply of raw materials. However, there are periods of significant growth, such as in March (123.5%) and August (126.5%), which may be due to increased demand for petroleum products or restoration of production capacities. In general, the data indicate significant market volatility, which may affect the national economy and energy security of Ukraine.

Among petroleum products, natural gas is the most used - 3635,6 million m<sup>3</sup>, and gas oils had the largest reserves on February 1, 2022 – 565,7 thousand tons. Hard coal was also used in significant volumes (3404,3 thousand tons), with balances of 1592,8 thousand tons at the beginning of February. Other types of fuel were used in smaller quantities. For example, motor gasoline was used in the amount of 21,4 thousand tons, with 280,7 thousand tons remaining, and gas oil – 218,1 thousand tons. Fuel oils were used in the amount of 62,9 thousand tons, and propane and butane – 18,2 thousand tons, while their residues were 79,5 thousand tons and 98,4 thousand tons, respectively. These data reflect the balance between the use and reserves of fuel resources, which is key for planning the country's energy security (Table 2).

We will remind that the Ukrainian market of petroleum products is represented by gasoline of various brands, diesel fuel (gasoil) and gas (propane, butane, methane), and retail consumers use the services of gas stations, which determines the involvement of importers in meeting needs.

Table 2

Use and stocks of fuel products in Ukraine in 2022\*

Types of oil products	Unit measurement	Used for 2022	Balances as of 01 February 2022
Stone coal	thousand tons	3404,3	1592,8
Natural gas	million m <sup>3</sup>	3635,6	-
Motor gasoline	thousand tons	21,4	280,7
Gas oil	thousand tons	218,1	565,7
Fuel oils	thousand tons	62,9	79,5
Liquefied propane and butane	thousand tons	18,2	98,4

\*Excluding the occupied territories (Crimea, Sevastopol, parts of Donbas)

Source [14]

In the first four months of 2024, Ukrainian importers brought 2,3 million tons of gasoline and diesel fuel. This is 7% less than in the same period last year, but 9% more than in pre-war 2021. In 2023, fuel imports increased due to the expectation of a European embargo on Russian petroleum products. The dynamics of the import of oil products to Ukraine is presented in fig. 1.

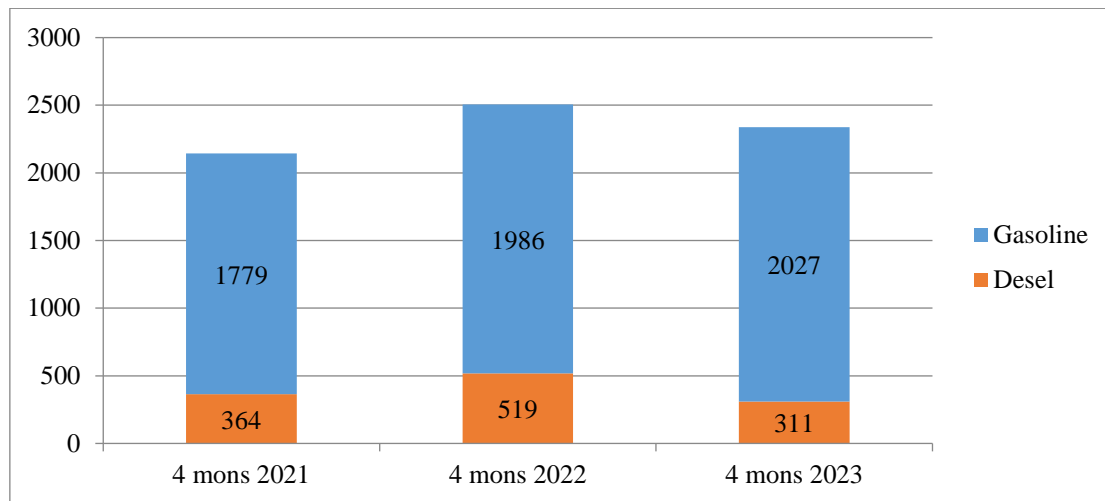


Fig. 1. Import of petroleum products to Ukraine (comparison for the first 4 months of 2021-2024)\*

\*Source [11]

This means that the new fuel supply system from Europe will continue to function successfully [9].

Before the start of the war, the vast majority of oil product imports were provided by Belarus and Lithuania. Today, the largest specific imports are Romania (91,6 thousand tons), Poland (84,3 thousand tons) and Lithuania (39,8 thousand tons).

Pro-Consulting analysts conducted a study of the oil products market [2], according to which it was established that the largest specific gravity of wholesale fuel consumers in 2022 constitutes the military sector. In general, the specific weight of the main wholesale consumers of fuel in 2022 is presented in fig. 2.

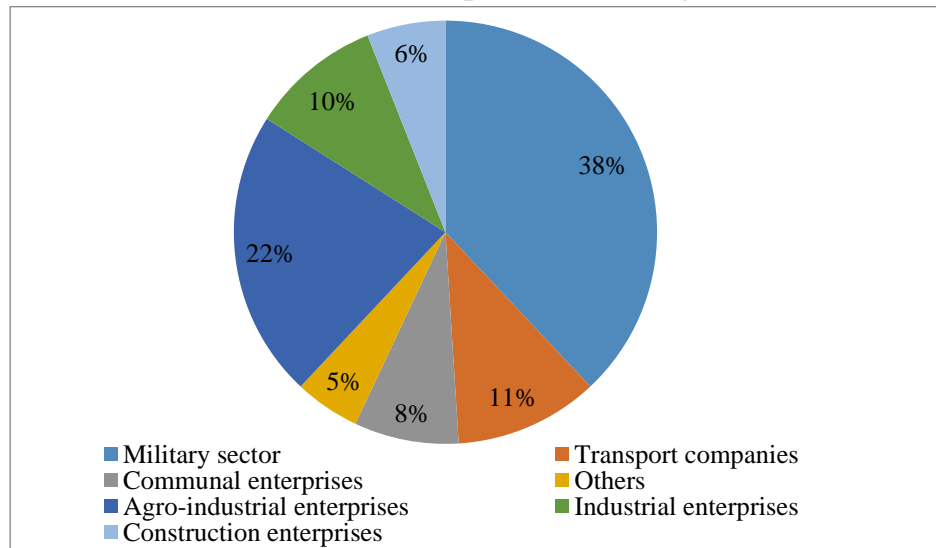


Fig. 2. Specific weight of wholesale fuel consumers, 2022\*

\*Source [2]

The use of 38% of the total amount of fuel by the military sector indicates the significant role of the army in the overall consumption of resources, especially in the conditions of martial law. In second place in terms of consumption are agro-industrial enterprises with 22%, which emphasizes the importance of fuel for the agricultural

sector, in particular for the machinery used in agriculture. Other sectors consume less fuel, for example, transport enterprises — 11%, industrial — 10%, Communal enterprises — 8%. Construction enterprises and other consumers occupy the smallest share, 6% and 5%, respectively. This distribution shows the significant dependence of key sectors of the economy on the availability of fuel, with a special emphasis on the military and agro-industrial sectors.

For 8 months of 2023, it is possible to observe a change in the specific weight of wholesale fuel consumers (Fig. 3).

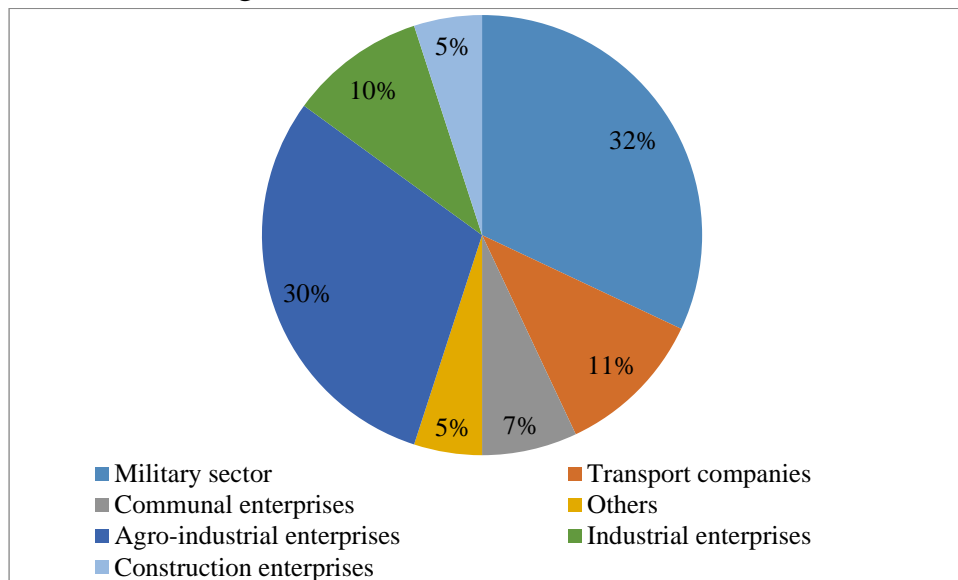


Fig. 3. Specific gravity of wholesale fuel consumers, 8 months of 2023\*

\*Source [2]

The priority remains the military sector and agro-industrial enterprises, which use respectively 32% and 30% of the total volume of fuel consumption by wholesale consumers.

We will remind that with February in 2022, the Ukrainian fuel market underwent two major changes: the cessation of direct imports from Russia and Belarus and the diversification of supply sources. Now dozens of countries sell fuel to Ukraine.

For example, in the third quarter of 2021, the top five exporters of petroleum products to Ukraine included Belarus (\$548 million), the Russian Federation (\$305 million), Lithuania (\$210 million), Turkey (\$86 million), and Greece (\$71 million). ). These countries accounted for more than 80% of fuel imports, and 40% went to Belarus, which supplied petroleum products from refined Russian oil [17]. In general, the balances of oil products in 2021-2023 are presented in fig. 4.

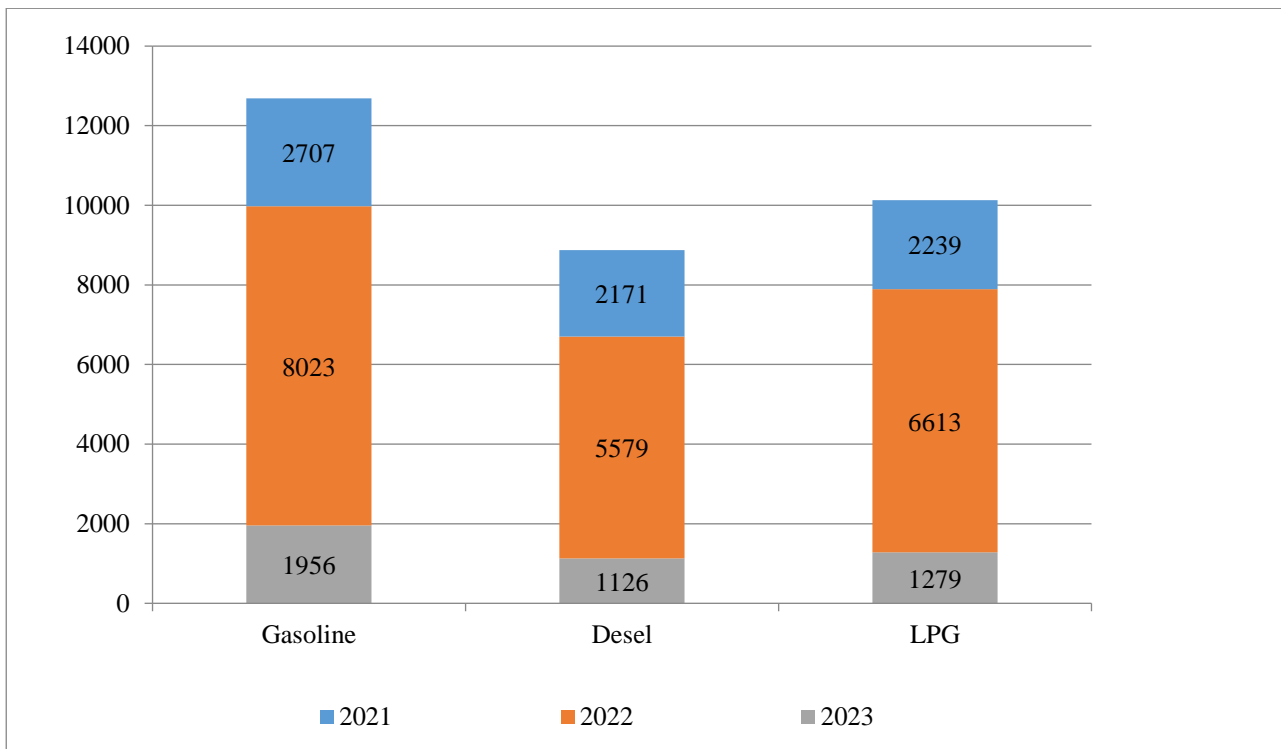


Fig. 4. Oil product balances for 2021-2023\*

*\*Source [9]*

In the gasoline category, a relatively stable level of consumption can be seen over three years. Consumption was at its lowest in 2021, growth is seen in 2022, and even more growth in 2023. This indicates a gradual increase in demand for gasoline or changes in the structure of transport consumption.

For diesel fuel, there is a significant increase in consumption every year. In 2021, it was the largest, and then in 2022 and 2023, it increased significantly. This indicates an increase in the use of diesel vehicles or an increase in the demand for diesel due to military and agricultural needs.

In the LPG (liquefied gas) category, consumption is the lowest among all fuels, but also shows steady growth during 2021-2023. LPG remains less popular compared to gasoline and diesel, but its growth may be due to the availability and spread of gas cylinder equipment in transport or for domestic use.

The development of the oil products market depends on numerous factors that affect demand, supply, pricing and market structure and collectively form the platform for its functioning (Fig. 5).

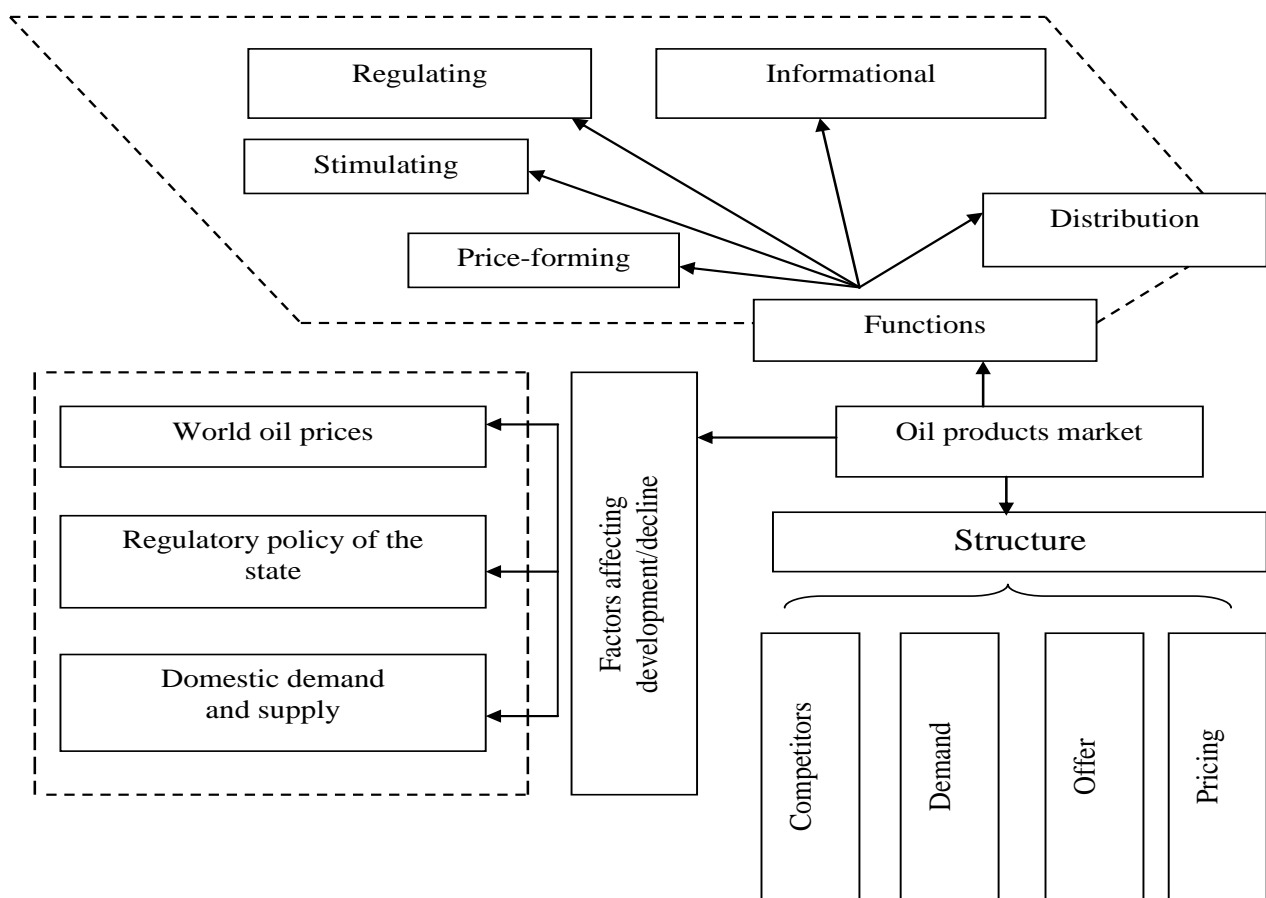


Fig. 5. Platform for the functioning of the oil products market\*

\*Formed by the author

Among the factors that affect the functioning of the oil products market, it is advisable to highlight:

1. World oil prices, since the cost of crude oil on international markets is the main factor that determines the final price of petroleum products. The rise/fall of oil prices depends on geopolitical situations, the policies of OPEC countries, demand from large economies (USA, China) and the development of production technologies (shale oil). Price fluctuations can directly affect the market of oil products in Ukraine due to import dependence and directly on inflation, transport costs, the cost of raw materials and finished products, etc. This affects economic stability and the well-being of the population. The increase in fuel prices leads to an increase in the cost of goods and services, which can cause economic instability, a decrease in the competitiveness of the Ukrainian economy, and social tensions.

2. The regulatory policy of the state is characterized by the level of taxation, excise duties and subsidies, which have a significant impact on the cost of petroleum

products. Government price regulation, fuel quality standards, as well as energy security policy and diversification of supply sources can stimulate/restrain market development. In Ukraine, state support for alternative energy sources can also reduce dependence on imported petroleum products.

3. Domestic supply and demand is determined by economic activity, particularly in agriculture, industry and transport. At the same time, the level of competition among suppliers of petroleum products, the presence of oil refineries, the development of infrastructure for storage and transportation of petroleum products significantly affect the market. An outflow of labor or a reduction in production could lead to a decrease in demand for fuel.

It should be noted that the market of oil products performs a number of important functions that ensure the efficient operation of the economy, energy security and stability of fuel supply and form the structure of the platform of operation. The main functions of the oil products market include:

1. The distribution function, which ensures the distribution of petroleum products between various sectors of the economy and consumers. Petroleum products are supplied for the needs of transport, industry, agriculture, communal services and the private sector. Effective distribution of resources depends on market mechanisms — supply and demand, which allows balancing fuel consumption in various industries.

2. The price-forming function, which is based on the balance of supply and demand, the cost of crude oil, the costs of processing, transportation, and the impact of the tax and regulatory environment. Pricing reflects economic conditions at both the international and national levels, and also takes into account fluctuations in world oil prices.

3. The stimulating function provides stimulation of the development of innovations and technologies in the field of oil production, processing and consumption. This includes the introduction of new types of fuel, increasing production efficiency and reducing the harmful impact on the environment. Competition between suppliers of petroleum products also encourages optimization of processes and improvement of product quality.

4. The regulatory function helps regulate the supply and consumption of petroleum products in accordance with the needs of the economy. Through supply and demand mechanisms, the market ensures the maintenance of optimal fuel stocks and the planning of strategic reserves to prevent shortages in critical situations, for example, during crises or supply disruptions.

5. The information function is implemented by consumers and suppliers who receive information about changes in prices, supply volumes and demand for oil products. This allows market participants to respond to changes in the economy in a timely manner, adapt to new conditions and adjust their strategies.



Therefore, the market of oil products plays a central role in ensuring stable supplies of energy resources, without which the functioning of transport, industry and other strategic industries is impossible. The instability of the supply of oil products, especially due to external factors, can lead to an energy crisis, paralyzing critical areas of the economy. Ensuring a sufficient supply of fuel and diversification of supply sources are key elements of energy security.

In the conditions of hostilities or the threat of military aggression, the presence of stable access to fuel is a critical factor for the functioning of the armed forces. Tanks, planes, ships and other military equipment need a continuous supply of fuel to conduct operations. A shortage of oil products or blocking of their supply routes can significantly weaken the country's defense capabilities. Therefore, the market of petroleum products must be integrated into the general system of military strategy and planning.

The functioning of the oil products market during the war has its own peculiarities and challenges, since oil products are a strategic resource for ensuring the functioning of the economy, defense capability and vital activities of the country. During the war, Ukraine faced a number of critical changes that affect both the domestic market of oil products and the energy security of the country as a whole.

One of the main problems arising during the war is the destruction of critical infrastructure for the storage and transportation of petroleum products. Ukraine has lost part of its oil refineries, pipelines and storage facilities due to missile attacks and hostilities. Therefore, this led to a decrease in the ability to process crude oil and store fuel on the territory of the country, which critically affects the ability to quickly meet domestic needs.

In addition, the war complicated the logistics of supplying oil products. Due to hostilities and port blockades, Ukraine has lost access to traditional fuel import routes from the Black Sea and the Sea of Azov. The existing problems made it necessary to reorient to western supply routes through the European Union, which increased transport costs and extended delivery times. Accordingly, these factors make it much more difficult to ensure market stability.

After the loss of opportunities for domestic oil processing, the oil products market in Ukraine became dependent on fuel imports. A significant part of petroleum products is supplied from European countries, which increases vulnerability to external market fluctuations and the influence of international sanctions. Given that global markets for petroleum products are highly sensitive to political and economic instability, rising global oil prices and logistics costs have caused a sharp rise in fuel prices in Ukraine.

We will also note the rise in oil prices, which has serious consequences, as it affects all areas of the economy, including transport, industry, agriculture and the

housing and communal sector. In modern conditions, price growth increases inflationary pressure, reduces the purchasing power of the population and increases the cost of production of goods and services.

Therefore, during a war, providing fuel to military units becomes a priority task, since the army, military equipment and logistics need a stable supply of petroleum products. To support the mobility of troops, the functioning of aviation and heavy equipment, the state is forced to create fuel reserves and efficiently distribute resources between the military and civilian sectors. Military fuel needs have increased significantly, increasing competition for limited resources in the domestic market.

Along with this, during the war, Ukraine is forced to strengthen control over strategic reserves of oil products in order to prevent crisis situations in the event of a fuel shortage. However, due to the destroyed infrastructure and problems with imports, maintaining a sufficient level of strategic stocks becomes a difficult task. Lack of fuel can negatively affect the duration and effectiveness of military operations, as well as the country's defense capabilities as a whole.

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# **TRENDS IN THE UKRAINIAN EXPRESS DELIVERY MARKET AND THE ROLE OF INNOVATIONS IN ITS DEVELOPMENT**

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Due to the needs of the modern market and the globalisation of society, the demand for express delivery services is growing rapidly, and the express delivery sector is one of the most promising segments of the logistics market.

Growing customer demands and intense competition in this industry are driving companies to find new ways to develop and use innovative approaches to attract and retain customers.

The emergence of the express delivery market took place in the early stages of globalisation before the advent of the Internet, but today one of the key factors contributing to its development is the growth of e-commerce. The time parameter is one of the most important factors in the field of express delivery. Fast and timely delivery is a key customer requirement, and it has a direct impact on the performance of express delivery operators.

In the express delivery supply chain, express delivery market operators (integrators) play a key role - they are the core of the chain. They provide centralised management of all delivery-related processes and determine the optimal level of customer service. This includes the development of an individualised and standardised set of services to meet customer needs, the selection of technical means and technologies for transportation and cargo handling, management of cargo flows, resource and energy efficiency policies, and the establishment of requirements for business partners.

The main tasks of delivering express shipments are meeting deadlines, operational management and monitoring. These tasks are important to ensure the quality of services and customer satisfaction. The use of these indicators in monitoring results and planning future development helps express delivery operators to reap the benefits of a customer-centric approach.

The Ukrainian market of express delivery (last mile logistics) is the subject of numerous scientific studies by domestic scientists and practitioners who analyse its development, challenges and prospects.

The article of Mardar M.R. and Ustenko I.A. provides the volume of the express delivery market in Ukraine and analyses the marketing competitive environment of the Nova Post company [1]. According to the results of Porter's five forces model, the authors found a moderate level of competition in the domestic market, an average threat

from new entrants and a high threat from substitute goods, which requires companies to develop loyalty programmes and improve the quality of services.

The authors Kosar N.S., Kuzio N.E. and Kosar O.I. analyse the marketing strategies of operators, in particular the use of modern information technologies, such as Big Data and artificial intelligence, to increase competitiveness and adapt to the needs of different market segments [2].

Ilchenko N.B. and Kotova M.V. consider the essence of 'last mile' logistics in the supply chain [3]. They emphasise the growing role of this logistics in the context of the COVID-19 pandemic and analyse the main factors affecting its organisation: delivery speed, tracking accuracy, guarantees and insurance, convenience and cost.

The impact of e-commerce on the development of last-mile logistics in Ukraine was the subject of a study by Horbenko O.V. and Karpenko O.A. They analyse the state and trends of the e-commerce market and its impact on logistics processes, emphasising the need to adapt logistics strategies to new market conditions [4].

The authors Kunda N.T. and Ogiychuk O.V. study the functioning and efficiency of a separate segment of international transport - express delivery of goods [5]. Among the factors that ensure the competitiveness of international express delivery of goods, they propose to use: speed, punctuality, reliability, tracking and tracing, processing and manipulation, and the availability of a support service. The article highlights the aspects that are important for ensuring the competitiveness of express delivery companies.

The study by Kobylyukh O. Y. and Girna O. B. emphasises that one of the main trends affecting the express delivery market in Ukraine is the expansion of the e-commerce market caused by the significant growth of online sales, and also identifies changes in the parameters of shipments, i.e. reducing the weight of parcels, and the growing importance of contactless courier delivery as separate trends [6,7]. The article presents the growing demand of customers due to such elements as convenience, speed, quality, and reliability. Given the fact that drones are actively used in logistics in the world (China, America), the article outlines the possibilities of their use in the Ukrainian market, in particular, by the logistics operator Nova Post LLC.

In another study, the same authors examine the main aspects of the activities of one of the logistics operators in Ukraine, Nova Post LLC. The authors particularly emphasise the importance of innovative tools in its activities, in particular, the following elements: warehouse automation, unmanned parcels and postal machines [8].

The analysis of publications on the topic suggests that the express delivery market in Ukraine has great potential for growth, but faces challenges in adapting to a rapidly changing environment, in particular due to the impact of the war and economic difficulties. The effective implementation of innovative technologies is critical to

increasing the competitiveness of companies and improving the quality of services, and the main barriers to its development are the uneven level of infrastructure in the regions, high logistics costs and the need to integrate environmental solutions. High competition in the express delivery market encourages postal operators to look for ways to reduce costs and improve services, which has a positive impact on the quality of services.

These conclusions demonstrate the strategic importance of the express delivery market for the Ukrainian economy and the importance of its further development to meet the current needs of consumers, which leads to further research, in particular on possible innovative solutions in the activities of postal operators.

The purpose of this study is to identify the main trends in the development of the express delivery market in Ukraine and to highlight the prospects for the introduction of artificial intelligence to improve the efficiency and competitiveness of the industry. To achieve this goal, it is necessary to analyse the current state of the Ukrainian express delivery market; identify the main trends and challenges affecting the development of the industry; study the role of artificial intelligence in optimising logistics and improving the quality of services; and assess the prospects for the introduction of innovative technologies in the market.

The research sources include scientific articles and monographs analysing the express delivery market, last mile logistics and the use of artificial intelligence in this area; data from the State Statistics Service of Ukraine, analytical reports and materials from international research companies (Statista, McKinsey, Deloitte, etc.); practical cases, including examples of the implementation of artificial intelligence by operators such as Nova Post, Ukrposhta and other market players.

In the course of the study, the method of secondary data analysis was used to systematise information from scientific sources, statistics and industry reports; empirical analysis was applied to study cases of AI implementation in leading companies of the express delivery market; comparative analysis was used to study the experience of other countries in implementing AI in logistics; and the forecasting method was used to model possible market development scenarios based on economic trends and technical innovations.

The presented methodology allows us to systematically and consistently cover the topic, focusing on relevant aspects and promising solutions.

*Results and discussion.* In the classical business model of postal operators, the target market is the express delivery market, which includes the following segments: B2B (business-to-business), large, medium and small businesses B2C (business-to-consumer), C-buyer (consumer) and C2C (consumer-to-consumer). In terms of shipment categories, the market can be divided into CEP (parcels, courier and express delivery) and express delivery of goods from 30 kg to 1 tonne.

The evolution of the express delivery market has been quite rapid, driven by the development of digital technologies (Figure 1).

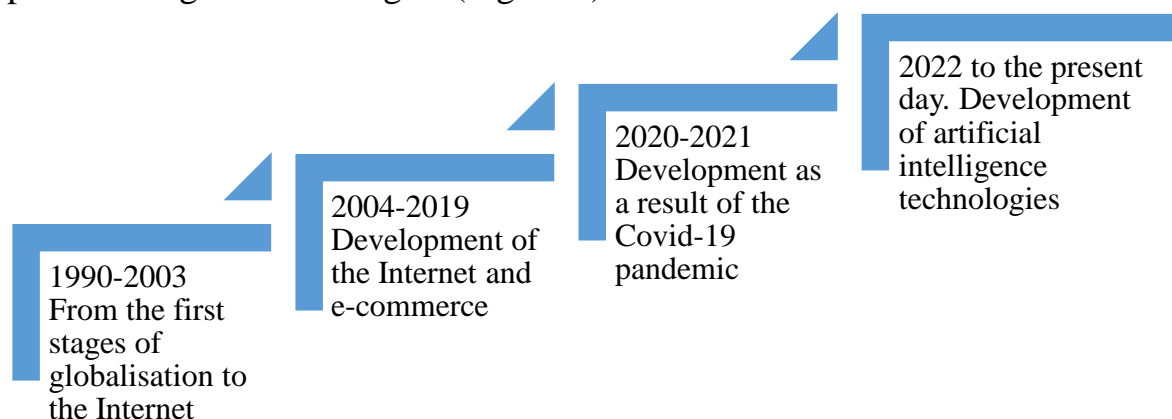


Fig. 1. Evolution of the express delivery market

*Source: own development based on [1, 4, 6, 7]*

The period from 1990 to 2003 is the initial period for the development of the express delivery market and falls on the first stage of the globalisation process before the advent of the Internet. One of the main trends of globalisation is the growth of the e-commerce market. The postal and logistics services market, like many other markets, is undergoing changes under the influence of global events, and often these events themselves contribute to its development. In the 1990s, there was a significant increase in demand for postal and logistics services, mainly due to economic difficulties in some post-Soviet countries and the emigration of people seeking better living conditions abroad. During this period, the first delivery company appeared in Ukraine - the global company Meest, which focused on providing postal and logistics services between Canada and Ukraine and primarily served the diaspora.

The noughties saw a significant development in global market expansion. Thanks to the development of the Internet, e-commerce began to grow rapidly, particularly in Eastern Europe. Consumers increasingly used the Internet and became customers of the first online stores. This forced the existing players in the postal and logistics industry to look for new formats and increase the range of services they could offer to their customers. For example, in 2007, Meest became one of the first operators to introduce delivery from international online stores to Ukraine. This involved a certain level of risk, but it was precisely this challenge and experiment that transformed Meest's service, turning it from a small delivery company (primarily focused on the diaspora) into a global group of companies that now connects Ukraine with the entire world.

The third stage in the postal logistics market of the postal logistics market is the period from 2020, which began with the start of the pandemic. The volume of the of the e-commerce market grew at an incredible rate. In 2021, the number of of B2C

parcels in the European Union reached 10 billion, which was a new record. Y 'normal' market conditions, this volume would have grown to more than 20 billion parcels in the UK and the EU, and by 2029 to around 40 billion [9]. However, due to Covid-19, this process has accelerated by 4-6 years. Today, all operators of the express delivery market must actively study the expectations of their customers and provide them with services that fully meet their needs.

One of the main areas that have been accelerated by the pandemic is delivery to post offices and outlets (PUDOs). For example, today, half of online shoppers in Lithuania and Latvia and 85% in Estonia prefer delivery to post offices. In addition, approximately 40% of parcels in Germany, Poland, France, and the Scandinavian countries are delivered to post offices and branches. Delivery to post offices is actively advancing in Ukraine, demonstrating significant growth and becoming an essential component of the logistics network. The number of parcels delivered through post offices is increasing - by 2.5 times compared to 2.5 times compared to November 2017. The development potential of this segment is enormous.

Despite the rapid growth, out-of-home delivery points (post offices) still need further development. According to data, only 5 out of 28 EU countries have reached the of 10 post offices per 10 thousand people [10]. Ukraine also does not have a sufficient number of branches and post offices, if we transfer this statistic to our country. Finland is the leader in this area, with 20 post offices per 10 thousand people. Slovenia, the Czech Republic and Finland are the leaders in terms of the density of branches, and Finland, Estonia and Denmark are the leaders in terms of post offices. However, if we consider the dynamics of parcels and acceptance points, the next stage of the 'only four countries are fully prepared for the next stage of the postal growth: Poland, Latvia, Czech Republic, Estonia.

To meet the modern requirements of consumers and the express delivery market, postal operators must actively invest in the development of their networks of out-of-home delivery points. At this stage, numerous express delivery operators, including DPDgroup, PostNord, Posti, Deutsche Post (DHL), PostNL, Nova Post, and Meest, are actively expanding or planning to enhance their networks of post offices.

Nowadays, delivery to delivery has become an integral part of the strategy to reduce the cost of targeted delivery costs. Compared to branches, post offices have advantages in terms of speed and environmental friendliness. The development of networks of branches and post offices is a key factor in the expansion of business expansion. McKinsey forecasts show that over the next 10 years, the number of 'last mile' deliveries to post offices and branches in cities will increase by almost by 80% [11]. In addition, same-day delivery will become even more popular and will increase by 20-40%. This means that post offices and branches have prospects for development prospects, as their convenience for customers is constantly growing. In addition, these



outlets are profitable for both operators and customers. Also, it is also worth noting the environmental component - post offices and branches cause less environmental damage compared to other delivery methods, as they provide centralised delivery to a small number of locations, which allows avoiding unnecessary transport distances and thus reducing emissions into the atmosphere.

Modern consumers are increasingly consumers value their time and comfort more and more, and technology is helping them to do so. Nowadays people don't need to stand in queues for tickets, go to a bank to make money transfers or even visit a to make money transfers, or even visit offices to do to do their work. Consumer demands for postal services are also changing: long queues at and two-week delivery are a thing of the past, and the future of the future belongs to day-to-day delivery to post offices located close to homes.

Post offices are not the only area where operators of the express delivery market. For example, their pricing policy is also important.

An interesting fact is that 53% of respondents consider the price of delivery to be the key factor, and therefore they would be satisfied with slightly longer delivery times delivery time, but with lower maintenance costs. Extended delivery times can have a positive impact on a company's budget, as it allows them to combine several orders into one. Approximately half of online shoppers analyse delivery prices from time to time of online shoppers analyse delivery prices from time to time, and two-thirds do not place an order if the price is too high. Almost 61% of respondents said that an important factor for them is low cost of delivery services or better if it is free.

To remain competitive, you can meet your customers' needs and satisfy them, but you can offer free delivery for certain categories of goods, not all of them. These may include, for example, lightweight and small items. Also, free delivery can be offered for orders over a certain amount. 23% of shoppers add more items to their order at checkout to get the option of free shipping.

However, perhaps the most important requirement of customers for express delivery is the expected delivery time. Shopify's research shows that potential customers turn into loyal ones if one of the key needs is met: they know exactly what the expected delivery time is. Of course, in wartime, you can make allowances for the security factor of the delivery terms and talk to the customer about it. However, if the delivery is carried out in more or less safe areas, it is important to make it on time, taking into account the agreements.

Personalisation, social commerce, omnichannel, mobile access, rising internet penetration and the increasing share of online purchases are the main factors driving the growth of postal and courier services worldwide. The Ukrainian express delivery market is no exception, as its prospects are attracting the attention of many market participants, such as online stores, marketplaces, retailers and others.

The volume of the Ukrainian express delivery market is estimated at 6532 million shipments in 2023 [1]. Since 2017, the domestic express delivery market has grown 2.6 times in currency terms and is constantly growing by an average of 16% per year [12].

There are six main trends in express delivery that define the domestic market (Figure 2).



Fig. 2. Main trends of express delivery on the Ukrainian market

*Source: own development based on [10]*

One of the current trends that has undergone significant development in the domestic market is e-commerce, which continues to be the main trigger for delivery services. In 2019-2021, during the tough lockdowns, there were significant peaks in demand for delivery. E-commerce was the main driver of demand growth. According to research, e-commerce developed rapidly in Ukraine in 2020, and the country ranked second in Europe in terms of growth in this sector. In 2020, Ukrainians spent more than UAH 107 billion on purchases of goods and services online, which was more than 40% more than in 2019.

An analysis of the activities of express delivery companies showed that during the tightening of quarantine restrictions, the demand for delivery grew by an additional 10-20% compared to the usual growth, and the amount of spending increased by 22%. This was made possible by a temporary shift in sales from offline channels (a 38% decrease in the share of offline purchases and a 30% drop in spending). However, after

the quarantine restrictions have been eased, a significant proportion of consumers remain online.

Experts predict further growth in online retail in Ukraine over the next two to three years, which will lead to growth in the express delivery market. In this context, we can take into account the experience of Eastern European countries, in particular Poland. Last year, Poles made 1.7 times more online purchases than Ukrainians, despite the fact that Internet penetration and the share of online shoppers are almost the same in Ukraine and Poland. Thus, Poland can serve as an example for developing scenarios for the development of the domestic express delivery market.

Reformatting demand - the second trend in the domestic express delivery market is a focus on speed, convenience and contactlessness. The transition from e-commerce to quick commerce is becoming increasingly important. It is important for consumers not just to make a purchase online, but to receive it as soon as possible, avoiding long waits for delivery. That is why the 'last mile', i.e. the last stage of delivery to the customer, is becoming a subject of real competition. A whole segment of fast delivery is developing, where different suppliers come together under one application to ensure fast delivery of goods to customers.

Convenience and contactlessness are also becoming important consumer requirements. That's why delivery to post offices is becoming very popular. In 2020, the volume of parcels received through post offices increased 7 times compared to the previous year. This is a logical consequence of the growing digitalisation of the world over the past year and a half.

Gradual introduction of technologies that allow customers to perform all operations in a mobile application is another important trend in the express delivery market. For example, Nova Post LLC's post offices do not require customers to touch any device other than their own smartphone. Other market players also observe the dynamics of growth in delivery volumes to post offices. This trend of express delivery is not unique to the Ukrainian market. For example, the Polish company Inpost, which develops a network of post offices, went public in 2020 and became the fourth most expensive public postal operator in the world with a capitalisation of with a capitalisation of more than \$10 billion.

Another important trend, and is the growth in customer requirements for express delivery operators. Customers want faster, better, cheaper and 24/7 service. Accuracy and flexibility of delivery are the most important requirements. They expect there to be picked up at a precisely agreed time, and to be able to choose a minimum time interval for delivery that fully meets with the principles of logistics.

Digitalisation of services and self-management of delivery is one of the most important trends in the express delivery market. Customers want to be able to place a parcel through mobile app, pay for it contactlessly and receive it at a post office. Self-

service technologies are becoming increasingly popular. Market operators express delivery market operators in the seller-to-buyer supply chain put customer the forefront of their business, focusing on the needs and requirements of customers. This trend is the best growth driver for express delivery operators express delivery operators and helps them to protect themselves from competitors.

Another important trend in the express delivery market is unmanned delivery, which meets the growing customer demand for faster delivery. The implementation of unmanned delivery vehicles enables faster service, meeting customers' demands for speed. For instance, aerial parcel delivery between cities significantly reduces transit times compared to ground transportation. Many express delivery companies are actively exploring this approach, conducting trials to refine and implement unmanned delivery solutions. For example, the British Royal Post plans to use drones to deliver parcels to remote islands. Ukrainian delivery companies are also working on the implementation of unmanned corridors for long-distance delivery, and Nova Post planned to launch this service in 2022.

Intensification of logistics activities of express delivery operators is accompanied by certain challenges. The growth in the number of small orders is the main problem faced by express delivery operators. Shipments weighing more than 200 kg and bulky goods are becoming less popular, and this leads to a decrease in their delivery volumes. This trend can be explained by two factors:

- firstly, the growth of online commerce leads to an increase in the number of small parcel parcels. Most orders in online stores are small in size and weighing up to 30 kg. Customers are increasingly ordering individual items or small batches of goods, which contributes to an increase in the volume of small parcels;
- the second factor is a decrease in demand and shipment volumes from B2B customers, who are reducing their stocks and switch to customised production. Large batches of goods are ordered less frequently, which leads to a reduction in the volume of bulky of bulky cargo.

These two factors driven by the growth of online commerce and changes in B2B customer demand, have led to a drop in the volume of bulky cargo delivery, both in the overall market and at Nova Post.

The decrease in the weight of parcels and the growth in the number of small parcels creates a heavy burden on individual service points, which have to process a large number of orders on a daily basis. To effectively manage this order flow, the company is implementing automated information processing systems throughout the supply chain express shipments. This allows us to speed up delivery times and simplify information processing. Considerable attention is paid to time optimisation, as it is a critical factor in express delivery. The time parameter is one of the most important factors in express delivery. Fast and timely delivery is the main requirement of

customers, and it has a direct impact on the performance of express delivery operators. Time affects various indicators of express delivery operators, such as the need for vehicles, customer demand for express delivery services and their financial performance.

Thus, the implementation of automated information processing systems across the entire supply chain for express deliveries is critically important for achieving efficiency and improving the performance of express delivery operators. This encompasses not only specific functional areas such as warehousing and transportation but also every stage of the supply chain. Automated systems simplify the processing of information flows, reduce the likelihood of errors, and accelerate delivery times. These systems enable express delivery operators to optimise routing, utilise analytics and demand forecasting, and streamline order processing and fulfilment. As a result, they achieve greater efficiency, enhanced service quality, and higher customer satisfaction.

The sixth significant trend in the domestic express delivery market is the intensification of competition in the local delivery segment. The express delivery market remains unsaturated and continues to grow dynamically, driving companies to increase their activities and adopt innovative processes. One of the factors stimulating this trend is the initiative of leading companies in the e-commerce sector to develop their own delivery services. These companies are opening dark stores – specialised warehouses with areas ranging from 300 to 700 square metres, offering around 1,000 product items. This trend is driven by the adoption of a single-channel sales approach (omnichannel) and the need to reduce the cost of local delivery, making it more flexible while ensuring a high level of service.

The measures undertaken by top e-commerce companies encourage other express delivery market operators to intensify their activities and introduce innovations. The competitive landscape forces companies to seek new ways to enhance service quality, optimise costs, and accelerate deliveries, contributing to the overall development of this market segment.

Another micro-trend in the express delivery market is the emergence of specialised delivery services for medicines or food. The growing demand from consumers for ordering groceries online with subsequent home delivery has created a new niche and segment in the express delivery market. The growth prospects for this segment remain strong, as food products continue to occupy a significant share of consumer spending in Ukraine.

Low entry barriers into the market, coupled with the availability of companies with sufficient financial resources, facilitate the emergence of new express delivery operators. These operators predominantly focus on local markets and compete in the local delivery segment. Over time, some of these companies may evolve into national

players, although scaling such a business model across the entire country could pose significant challenges.

These developments are positive for both consumers and express delivery market operators. Consumers benefit from improved service quality, while operators are incentivised to continuously enhance their services and innovate.

These trends point to the ongoing evolution of the express delivery market, where businesses strive to meet growing customer demands by adopting new technologies, offering faster and more convenient delivery methods, and improving the quality and accuracy of their services.

As of mid-2024, Ukrainian postal service operators fully meet the needs of the national market. Future growth in shipment volumes and company revenues will depend on the country's economic activity, where the key influencing factors are purchasing power and population size. Additionally, the development of e-commerce will remain one of the primary drivers of increasing shipment volumes.

The postal services market in Ukraine is characterised by high concentration. The undisputed market leaders in express delivery, with a combined market share of 97%, are Nova Post LLC and Ukrposhta JSC, with Nova Post holding a significant lead. Nova Post continues to grow faster than the market, recording a 26% real-term growth in 2023 [13].

In 2022–2023, the market underwent significant changes. The war led to partial restructuring of logistics routes and created new challenges for delivery companies. Additional factors impacting the market included rising company costs, a decline in population, and reduced economic activity. At the same time, the reduction in maritime shipping options increased demand for road freight transportation.

In 2023, the delivery services market and all its segments demonstrated recovery after the decline of 2022. International postal shipments also increased by more than half in 2023.

The war almost brought Nova Post's business to a halt. On 28 February 2022, the company's revenue dropped to 1%, and in March, the country's largest postal operator was on the brink of bankruptcy. The invasion resulted in the loss of a sorting terminal, with dozens of branches destroyed.

By the end of 2023, Nova Post had successfully overcome the crisis. In 2023, the company's profit increased by UAH 4.3 billion [13]. The year began with the launch of the group's new name – NOVA. Over 23 years, the group has grown into a holding company comprising six divisions, including the logistics company Nova Post LLC, the IT company Nova Digital, the airline SuperNova, the energy company Nova Energy, and the financial services provider NovaPay.

In light of current events such as the war with Russia and mass emigration of Ukrainians abroad, international shipments are becoming increasingly relevant. Nova

Post has been developing its international delivery services for some time but has traditionally focused more on the domestic express delivery market. Due to the current situation, Nova Post has expanded its presence internationally, establishing operations in Germany, the Czech Republic, Romania, Poland, and Lithuania.

In the first half of 2024, Nova Post expanded its network by 13%, reaching 12,180 branches and 18,000 parcel lockers, with delivery volumes growing by 17% to 222 million parcels. However, the company's international expansion slowed [13]. By September 2024, the company aimed to enter the markets of 18 EU countries but achieved only one-third of its plan. According to Nova Post Europe CEO Oleksandr Lysovets, the remaining countries will eventually be covered.

Currently, the group operates in over 10,000 settlements across Ukraine. Its investment budget for 2024 is up to UAH 7 billion. Nova Post plans to further expand its network by a third, adding 3,000 new branches and 5,000 parcel lockers.

Nova Post's leadership is ensured by its technological advancements and flexibility, evidenced by recent innovations:

1. Automation of warehouse operations: As part of its long-term development strategy, Nova Post has implemented automation in its warehouses and constructed five innovative automated sorting terminals. By the end of 2019, innovative terminals were launched in Kyiv, Lviv, and Khmelnytskyi, with additional terminals opened in Kharkiv and Dnipro in 2020. Nova Post received a €13 million loan from the European Bank for Reconstruction and Development (EBRD) to build a new automated sorting terminal in Dnipro. The total project cost was €28.5 million, including €11.9 million for the sorting line and equipment, €14 million for terminal design and construction, and €2.6 million for contingencies.

These terminals are almost fully automated, capable of processing up to 600 trucks daily and sorting 400,000 items during this time (8,000–10,000 parcels per hour). Manual sorting at these terminals is virtually absent, as all decisions are made by computer systems. A scanning system organises parcels efficiently. Automation has enabled the company to reduce the workforce at the new warehouse by three to four times.

Since 2021, Nova Post has been actively testing warehouse robots developed by Deus Robots (Ukraine) at its terminals. One type of robot can move goods and racks using QR codes on the warehouse floor, while another is used to sort parcels weighing up to 30 kg.

Certainly, Nova Post LLC acknowledges that minimising manual labour is not a novel concept. However, the automation and robotisation of warehouse processes is one of the global trends in logistics. In 2016, the global turnover of the warehouse robotics market amounted to \$2 billion, with approximately 40,000 warehouse robots sold. According to forecasts, by 2023, the turnover will rise to \$22–23 billion, with at

least 600,000 robots delivered to warehouses. Experts predict significant growth in global e-commerce volumes, leaving no room for manual or semi-automated operations. The scale of trade is becoming so large that it can no longer be handled manually. Therefore, technology companies are focusing on developing and producing warehouse robots, anticipating a growing demand for them in the coming years.

2. Innovative drone-based delivery solutions Nova Post LLC is also implementing another innovative solution: the use of postal drones for cargo delivery. In 2021, the company completed final flight tests of a specially designed aerial vehicle for parcel transportation. This drone is compact and can carry up to 4 kg of cargo, equivalent to 20 to 50 postal envelopes. Its maximum flight range is up to 350 km. However, as of early 2022, the developer commissioned by Nova Post was already working on a drone capable of transporting up to 400 kg, with plans to eventually increase the payload to 1 tonne. Globally, drones are already widely used in logistics. In China, they deliver up to 1,000 shipments daily. Amazon also successfully employs UAVs for product deliveries and has even patented concepts like airborne warehouses (dirigibles) and other innovative ideas related to drone-based delivery. Examining their patents and technological portfolio in drone management, it is evident that Amazon recognises the potential and trend in unmanned devices. As a leader in global logistics, Amazon sets the tone for the development of these technologies.

3. Unmanned ground delivery systems Nova Post LLC believes that unmanned delivery is not limited to aerial drones; logistics is generally moving towards eliminating the need for drivers and couriers. Ground-based drones are a more achievable and realistic option. However, this trend is not yet suitable for Ukraine, where road conditions often require human intervention. Nevertheless, the future is approaching rapidly, and autonomous vehicles will play a significant role in this transformation.

4. Reducing human involvement in parcel issuance Nova Post LLC is also actively working to minimise human involvement in parcel collection processes. Parcel issuance can be performed without human presence, paving the way for the future of unmanned collection points like parcel lockers. In the future, these lockers may feature various designs and configurations to meet market demands and requirements. To realise its digital and technological ambitions, Nova Post is transforming into an engineering-driven company and has already established an internal engineering division. The company continues to increase investments in research and development and is prepared to acquire technologies and even technology startups. Nova Post actively develops technologies for logistics.

In 2023, Nova Post invested more than during pre-war times – UAH 5.3 billion, with plans to increase this to over UAH 7 billion in 2024. Nearly half of last year's investments were allocated to constructing new and automating existing sorting



terminals, as the company aims to maintain delivery speed despite rapidly growing parcel volumes. Last year, Nova Post delivered 412 million parcels, a 30% increase compared to 2022.

Currently, the company funds two-thirds of its capital investments from its own resources, with the remaining portion covered by external borrowing. In 2023, Nova Post was one of the few companies to issue bonds, raising UAH 800 million. Moving forward, the company plans to increase the share of credit financing to 50%. Among Nova Post's 2023 investment projects, the most financially significant were:

- construction and modernisation of terminals – UAH 2.4 billion;
- expansion of branch and parcel locker networks – UAH 1.1 billion;
- repairs, standardisation of workspaces, and accessibility improvements – UAH 1 billion;
- investments in IT and R&D – over UAH 300 million [13].

According to the owner of Nova Post, V. Klymov, the important criteria for a technology's success are its focus on financial impact and customer satisfaction, as well as its scalability and ability to handle large volumes. The main clients of Nova Post's delivery services are e-commerce businesses, which predict tenfold growth over the next 10 years. Therefore, the company will have to process volumes that are currently hard to imagine.

Express delivery services or last-mile logistics must continue to ensure fast delivery, minimal costs, and increased convenience for end consumers, which in turn requires the use of new innovative approaches. One such approach at the stage of last-mile logistics could be the use of artificial intelligence (AI). According to Statista, the express delivery market in the leading economies of the world actively using AI is projected to reach \$18.3 billion by 2025 [14].

The application of artificial intelligence in last-mile logistics aims to optimise the most complex and costly part of the supply chain – delivery to the end consumer. With the expansion of e-commerce and growing customer expectations, particularly regarding the speed and accuracy of delivery, AI plays a key role in improving this stage of logistics. The use of AI in last-mile logistics aims to optimise the most complex and expensive part of the supply chain – delivery to the end consumer. The areas and fields of last-mile logistics optimisation through AI applications are presented in Figure 3.

Below are real cases of AI applications according to these areas:

1. Optimisation of delivery routes occurs in two areas. First, AI platforms are used for dynamic routing. AI analyses data on traffic, road conditions, weather, and driver schedules to create the most optimal routes in real time. An example of this approach is UPS, which uses the ORION (On-Road Integrated Optimisation and Navigation) system.

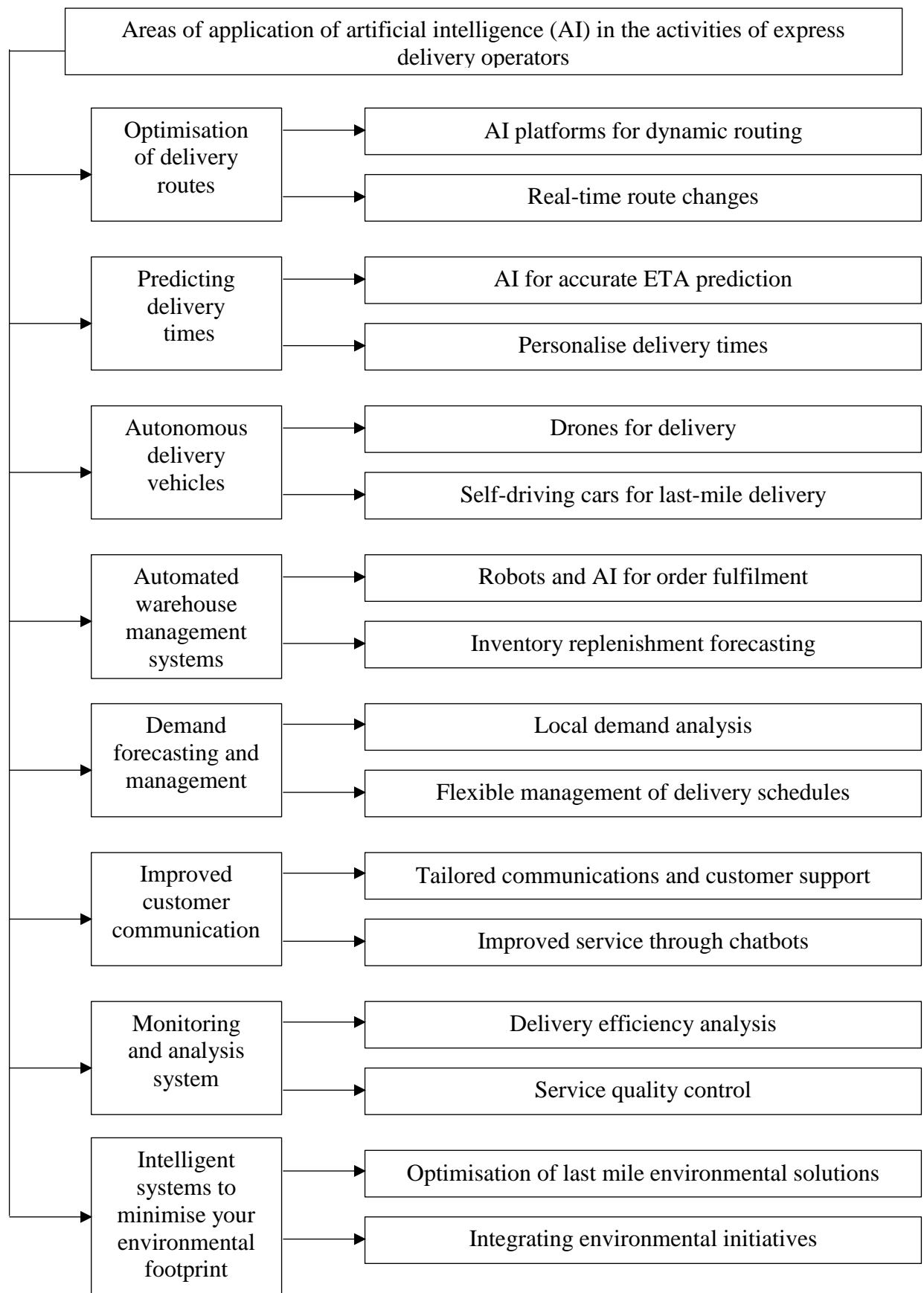


Fig. 3. Areas of application of AI in the activities of express delivery operators  
 Source: own development based on [14,15,16,17]

This allows drivers to choose the best routes, thereby reducing fuel costs, saving time, and reducing CO<sub>2</sub> emissions. The second application is real-time route changes, made possible by AI tracking unexpected road events, such as traffic jams or accidents, and offering alternative routes. For instance, Amazon uses AI to analyse data and select the most efficient routes for its drivers to ensure timely deliveries.

2. Delivery time prediction:

- AI for accurate ETA prediction processes data on traffic, previous orders, and schedules to more precisely estimate the expected time of arrival (ETA) for each order. Services like DoorDash and Uber Eats use AI to predict accurate arrival times, allowing customers to better plan their time and reducing dissatisfaction due to delays;
- personalisation of delivery times: AI analyses previous customer orders to predict their most convenient time for receiving deliveries. FedEx and DHL are actively investing in AI to provide customers with personalised delivery windows and avoid missed deliveries.

3. Autonomous delivery vehicles in the form of drones and driverless cars. AI-driven drones are increasingly used for delivering goods, especially in densely populated areas. For example, Wing (a division of Alphabet) is developing drone deliveries, enabling faster delivery of small orders, particularly groceries, medicines, and essential goods. Drones use AI to calculate the shortest routes and avoid obstacles. AI plays a key role in managing autonomous vehicles, allowing goods to be delivered without drivers. This is already being actively implemented by Nuro, a company that manufactures autonomous delivery vehicles. Nuro uses AI for navigation, obstacle detection, and customer service.

4. Automated warehouse management systems:

- robots and AI for order processing: At micro-warehouses, AI coordinates the actions of robots that collect, pack, and prepare goods for delivery. For example, Ocado, a British retailer, uses AI to manage robots in its warehouses, which prepare orders for delivery. This increases the speed and efficiency of delivery;
- inventory replenishment forecasting: AI forecasts the need to replenish inventory in local warehouses, considering demand in specific regions. Amazon uses AI to replenish its warehouses based on local demand, maintaining optimal inventory levels.

5. Demand forecasting and management for analysing local needs – AI can predict which products will be popular in a specific area and prepare warehouses accordingly – and for flexible delivery scheduling. AI can automatically increase or decrease the number of vehicles servicing specific zones depending on demand. This helps avoid overload during certain hours or days. Walmart, for instance, uses AI to monitor local demand and manage its inventory, reducing delivery times and preventing shortages.

6. Improving communication with customers is achieved through personalised notifications and customer support. AI can send customers updates about the status of their orders and delivery times, as well as notify them of any changes. Companies like Postmates and FedEx use AI to send notifications, allowing customers to stay informed and avoid missed deliveries. Additionally, customer service can be improved through chatbots. Many logistics companies, such as DHL, use AI chatbots to provide real-time customer support, enabling issues with delivery to be resolved and questions answered without involving operators.

7. Monitoring and analytics systems. Delivery performance analytics with AI allows for analysing the effectiveness of each route, driver, and delivery time, helping companies improve their operations. FedEx uses AI for analytics, enabling them to identify weak points in the supply chain and find ways to improve. In terms of service quality control, AI analyses customer feedback and develops recommendations for improving service, which is particularly useful for ensuring compliance with service standards and quickly addressing complaints.

8. Smart systems for minimising the environmental footprint consist of two components:

- optimisation of eco-friendly last-mile solutions: AI helps minimise CO<sub>2</sub> emissions by offering optimal routes and delivery times, as well as choosing less polluting types of transport, such as electric vehicles. DHL actively uses AI to assess and reduce the impact of its operations on the environment;

- integration of environmental initiatives: The use of AI enables companies to choose the best transport vehicles and packaging methods to reduce waste and environmental impact. UPS uses a system that optimises the use of electric vehicles and minimises stops to lower CO<sub>2</sub> emissions [15, 16, 17].

All these examples demonstrate how AI not only increases delivery efficiency but also helps logistics companies remain competitive in a dynamic market by focusing on innovation and environmental responsibility.

*Conclusions.* The express delivery market is very dynamic, driven by the activity of corporate clients, individual online shoppers, and the direct activities of postal operators, whose management is skilled at understanding customer demands and meeting them in a timely manner. Statistics and experts confirm the promising prospects of the express delivery sector. The growth rate of the postal logistics market exceeds 40% annually. This tremendous growth is driven by many factors, including the expansion of the e-commerce market, which is growing by 30–35% annually, according to research.

The undisputed leaders in the express delivery market are Nova Post LLC and Ukrposhta JSC, with the former leading significantly and continuing to grow faster than the market. Nova Post's activities are highly profitable, with constant revenue

growth ensured by professional management, a focus on continuous optimisation and improvement of business processes, increased customer loyalty, efficient teamwork, and the implementation of new technological solutions for postal delivery.

However, Nova Post's competitors are also actively developing their logistics capacities, expanding their presence in the express delivery markets, and establishing various partnerships to increase shipment volumes and other services. Therefore, Nova Post must implement new innovative solutions, one of which is the use of artificial intelligence technology.

However, it is also necessary to mention the risks of implementing artificial intelligence in the activities of express delivery market operators, namely: technical errors and system failures that may lead to routing mistakes, delivery delays, or improper resource allocation; over-reliance on automation, which may create dependency on AI, posing a problem in the event of technical failure or cyberattacks; data processed by AI becoming a target for hackers, threatening client confidentiality and the company's reputation; AI algorithms potentially having biases, errors in demand forecasting, or incorrect interpretation of data, impacting service quality; ethical issues; job reductions, which may affect corporate reputation and social responsibility; implementing AI systems requires significant capital investment, which may be risky due to uncertain payback periods; complexity of integration into existing systems or processes, leading to additional adaptation costs; regulatory restrictions; lack of personnel qualification.

Overall, the implementation of AI in the Ukrainian express delivery market has the potential to significantly increase the efficiency and speed of logistics processes, contributing to market growth. While there are no specific forecasts for the pace of this growth, an analysis of global trends indicates a positive impact of AI on the development of the express delivery sector in Ukraine.

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# **MARKET RESEARCH OF THE DOMESTIC FILM DISTRIBUTION MARKET DURING WARTIME**

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Market research of the domestic film distribution market during wartime is crucial due to significant changes in consumer behavior, economic instability, and the necessity for businesses to adapt to new realities. This research helps identify new audience needs, evaluate market structure, financial risks, and the effectiveness of communication strategies. It also supports determining directions for the recovery and development of the industry after the conflict. This allows film distribution companies to better respond to challenges and find new opportunities for stable functioning and supporting the cultural environment.

The growing competition in the film industry highlights the importance of obtaining necessary information and finding effective marketing tools to build long-term relationships with existing customers and attract new ones. Film marketing, as a process of promoting films to increase their value and profitability, enhances awareness and interest in film products. The ultimate goal of film marketing is not only to generate profit from film distribution but also to meet audience needs, develop leisure activities, and encourage stakeholders in the film market to respond to the demands of the market. This attracts potential cinema customers to viewings.

The conducted market research has revealed consumer preferences and development directions for the domestic film distribution market, aimed at increasing its marketing appeal to customers. The identified development vectors should form the foundation of the marketing activities of domestic cinemas during wartime.

Research on the domestic film distribution market and consumer behavior in cinemas has been conducted by B. Sheremeta, A. Shtanova, and I. Karabaza [8,9]. Issues related to customer loyalty management in domestic cinemas have been explored by O. Yashkina and Y. Blazhko [13]. The concept of the marketing mix in the film distribution sector has been studied, emphasizing its unique characteristics [17, p. 20]. It has been revealed that service marketing is primarily based on creating and maintaining long-term relationships with customers and company partners [15, p. 146]. Furthermore, the concept of cultural product marketing value has been identified [16,

17], and the use of marketing tools to increase the marketing value of film products and the attractiveness of cinemas has been substantiated [2].

This foundational research highlights the importance of customer relationships and value-based marketing approaches in the context of cinema and film distribution.

S.I. Kubiv, Ye.V. Krykavskiy, and N.S. Kosar made significant contributions to the study of marketing attractiveness. According to their research [3], marketing attractiveness is viewed from two perspectives: internal and external, which are interdependent. Internal attractiveness is based on the effective and profitable activities of the enterprise, allowing it to provide fair compensation to employees. External attractiveness is determined by the internal factors, as employee satisfaction influences their attitude towards both the work and customers. In assessing external attractiveness, it is essential to identify the company's image as perceived by customers, which is rooted in its competitive position.

Researchers primarily consider marketing attractiveness as an external characteristic of a company's activities. In line with this approach, each company is seen as a local component of a specific territory, possessing qualities similar to a product and thus becoming a "geoproduct." Therefore, marketing attractiveness is defined by the presence of specific development factors in the area where the company operates, which can either increase or decrease its overall appeal [4, p. 12].

A related concept is market attractiveness, which is considered a characteristic of a company that serves as both a prerequisite and outcome of market interactions between economic agents. It reflects the level of satisfaction of their financial, production, organizational, and other interests, expressed through a set of socio-economic indicators [2, pp. 53-56]. Therefore, market attractiveness can be understood as the logical result of interactions among all interested parties in the market relationships in which the enterprise participates. Consequently, the formation of a company's market attractiveness is influenced by both external and internal factors.

In terms of cinema marketing, several criteria contribute to a cinema's attractiveness: image, reputation, and market positioning. These directly impact the overall appeal of the establishment [5]. Cinemas with a strong image are quicker and more efficient in implementing new services, reducing their costs. The cinema's reputation guarantees the quality and reliability of services, as well as a high level of service. Reputation is also influenced by the network's market positioning, which distinguishes one cinema network from another in terms of film selection, pricing, loyalty programs, service quality, and additional offerings.

Cinemas focused on customer satisfaction tend to have higher service standards and more skilled employees compared to competitors. The image of a cinema is the key criterion for its competitiveness and marketing attractiveness. Therefore, strengthening this image through the collection and analysis of both external and



internal information obtained from marketing research is critical for increasing the number of loyal customers.

Market research of the domestic film distribution market during wartime was conducted using both primary and secondary data sources. A survey was the main tool for collecting primary data, aimed at identifying the parameters of marketing attractiveness for domestic film distribution in the eyes of customers.

The study took into account several factors when determining the marketing appeal of a cinema, including:

- Reputation (customer trust),
- Product range (variety of films),
- Understanding customer needs (providing relevant services),
- Service quality (efficient and timely service),
- Pricing flexibility,
- Stability,
- Safety (both personal and customer safety).

Additional factors included advertising, digitalization, and inclusivity, as cinema services should be accessible to all demographics, from children to seniors. However, the problem of digital illiteracy and the inability of some groups to use online systems remains a barrier. With the rapid growth of digitalization, the cinema industry needs to transition from offline to online services, adapting to this trend to meet customer needs. The research utilized a formal approach, based on random sampling to determine the sample size for quantitative evaluation of the results [6]. The sample was formed with equal probability for all elements of the population to be included. The survey of cinema visitors was conducted using Google Forms distributed online. The minimum sample size required for representativeness was calculated, and the sample size for repeated selection was determined using a standard formula.

This approach ensured that the results provided reliable insights into the marketing attractiveness of domestic cinemas during wartime, allowing companies to adapt their services and strategies accordingly.

$$n^2 = \frac{t^2 * \sigma^2}{\sigma_x^2}, \quad (1)$$

standard deviation:

$$\sigma^2 = \frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n}, \quad (2)$$

t – tabular value of the Student's t-distribution corresponding to the probability of individual elements of the population being included in the sample. (For a

probability of  $p = 0,95 - t = 1,96$ );  $\sigma^2$  – variance of a population characteristic;  $\sigma_x^2$  – the magnitude of the margin of error of the mean;  $\bar{\sigma}$  – mean deviation of a characteristic.

In the case of the conducted research,  $\bar{\sigma} = 0,75$ ;  $\sigma_x^2 = 0,05$ , therefore, with repeated sampling, the sample size will be  $n = \frac{1,962 * 0,57}{0,52} = 44$  individuals. Thus, during the

marketing research, 44 respondents were surveyed. The majority of respondents reside in Lviv (87,9%), while the rest are from the Lviv region, the city of Khmelnytskyi, and the city of Drohobych.

The film distribution market in Ukraine has experienced significant changes in recent years, influenced by both internal and external factors. Before the onset of full-scale war, the market showed positive dynamics, characterized by an increase in the number of cinemas and a growing audience. However, the COVID-19 pandemic altered this trend, leading to temporary cinema closures and a rise in the popularity of online streaming services.

Since the beginning of the military conflict in 2022, many cinemas have suspended operations, significantly reducing the overall market volume. Concurrently, the demand structure has shifted; there is now a greater emphasis on domestic cinema and films with national themes, while interest in entertainment content has declined.

The market remains in an unstable state; however, Ukrainian filmmakers and distribution companies are exploring new approaches to attract viewers. They are activating operations in safe regions, adapting their repertoires, and organizing special screenings for charitable purposes.

As of 2024, the leading companies in the market are two networks: "Multiplex" and "Planeta Kino," which together occupy nearly half of the market share. This dominance reflects their ability to innovate and adapt to the changing landscape of film distribution amid ongoing challenges (fig. 1).

"Multiplex" is the most popular and largest cinema chain in Ukraine, established in 2004. By the end of 2023, it operates 24 cinemas with 113 screens, equipped with the most innovative technology. These cinemas are primarily located in shopping and entertainment centers.

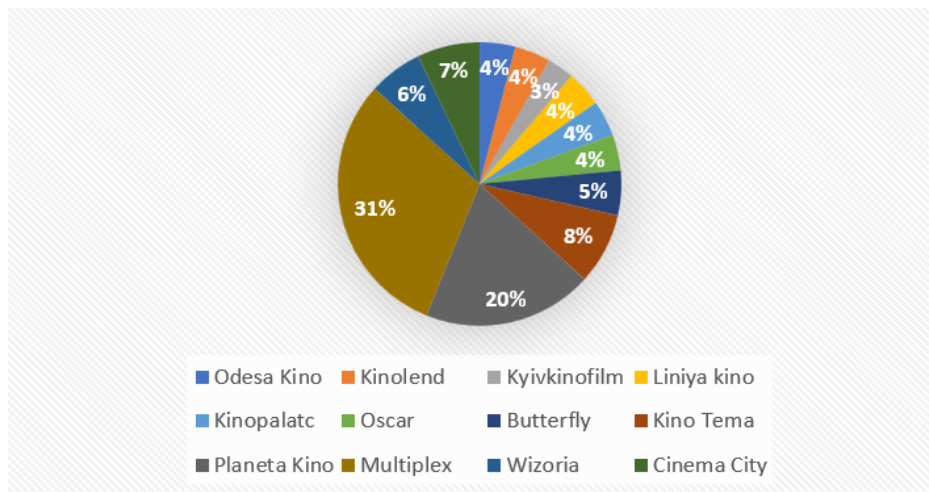


Fig. 1 The main operators of the film rental market of Ukraine

Source: [8]

Globally, the film distribution market is one of the sectors demonstrating positive growth. Currently, there are about 800 screens in over 100 cinemas across Ukraine. As of 2024, the main players in the Ukrainian film distribution market are three companies: "Multiplex," "Planeta Kino," and "Cinema-City."

Until recently, Ukrainian cinema chains lacked modern equipment, but they are now actively investing in high-quality visuals and sound to compete with even European standards. Unfortunately, the situation in smaller cities (with populations under 250,000) remains unchanged. Cinema chains face challenges in expanding their businesses and opening new cinemas in these areas due to the low-income levels of the population.

Despite these challenges, this segment has all the prerequisites for further growth, as illustrated in Figure 2.

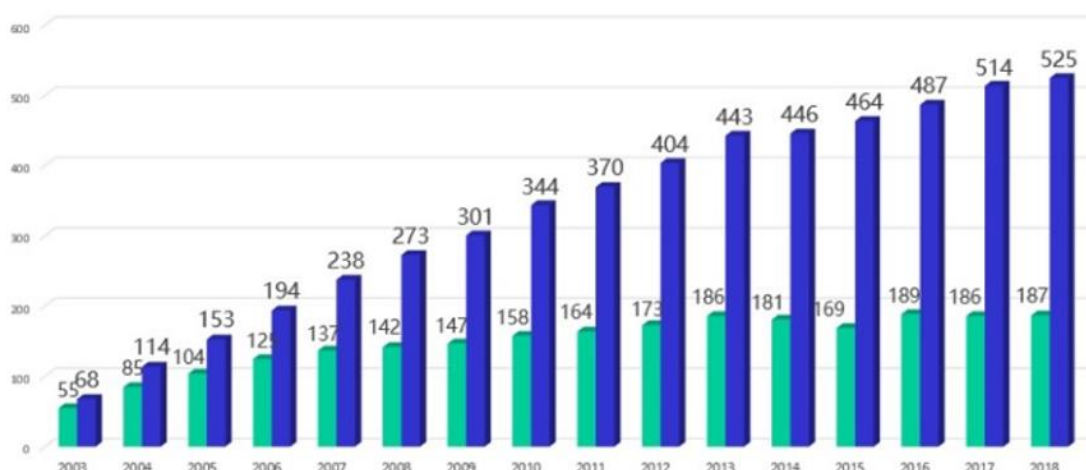


Fig. 2 Illustrates the dynamics of the cinema market in Ukraine.

Source: [8]

The prospects for the film distribution market are influenced by several factors. One key factor that will contribute to the growth of this economic sector is the development of commercial real estate. The opening of new high-quality facilities, such as shopping and entertainment centers suitable for housing cinemas, will determine the potential growth of this market.

Unresolved organizational, economic, and legal issues in Ukraine continue to create obstacles for the development of the film industry. In the unstable business environment caused by martial law, the operation of cinemas is significantly complicated. The onset of the full-scale war halted operations for many cinemas across the country. Due to hostilities, many screening rooms have been damaged or destroyed, and some have fallen into occupied territories.

Currently, cinemas are undergoing changes related to several problems, such as decreased demand for film distribution services and, consequently, reduced profitability due to losses from physical damage caused by bombings and the decreasing number of screening rooms; losses due to unresolved security issues; losses from reduced operating hours due to curfews; and losses due to decreased demand from air alerts and reduced purchasing power of the population [1].

Additionally, for a long time, there was an issue with high taxes that cinemas had to pay on ticket sales. However, from January 1, 2023, until January 1, 2025, domestic film distribution has been temporarily exempt from VAT on the distribution and screening of Ukrainian and foreign films, provided they are dubbed and voiced in the state language and adapted for the Ukrainian-language version for persons with visual or hearing impairments.

In the domestic market, the main competitors are PrJSC "Multiplex – Holding," "Planeta Kino," "Butterfly," "Cinema City," and "Oscar" (Table 1). All of them provide services for the screening of film products.

Currently, military operations are ongoing in Ukraine, and the establishment of a new chain of cinemas is a complex process that requires significant investment. As of early 2019, almost the entire film screening process has been digitized. Currently, there are more than 223,000 cinema halls operating in the international market, with 53,000 located in America and 52,000 in the European Union.

The digitization of films has significantly impacted the territorial expansion of cinemas, especially in small towns. Before the advent of digital copies, cinemas in such areas could not serve as the "first screen" for films. Typically, local cinema networks could only show films after they had left the popular cinema circuit, as the cost of such films exceeded their revenues. Moreover, film copies were often of poor quality as they had already been used. In the era of digitization, small cinema networks can now rent films immediately, as they only need to purchase the content and the key to it [9].

Table 1

## The main competitors in the domestic film distribution market in Ukraine

	Multiplex	Planeta Kino	Oscar	Butterfly	Cinema City
Date of establishment	2004 year	2006 year	2009 year	2001 year	2007year
Number of cinemas	24	9	2	5	3
Number of screens	113	66	14	44	22
Film reproduction technologies	2D, 3D XpanD, IMAX, ScreenX, Twins	2D, 3D, IMAX, 4DX, CINETECH+	2D, 3D	2D, 3D	2D, 3D
Ticket prices	UAH 60-230	UAH 110-270	UAH 150-320	UAH 115-170	UAH 120-180
Cinema rating	4,6 / 5	4,7 / 5	4,6 / 5	4,3 / 5	4,2 / 5

*Source: own development*

Most profits in developed film markets are generated by multiplex cinemas. The leading Ukrainian networks in 2024 are PJSC "Multiplex Holding" and "Planet Cinema," which together account for about half of all revenues in this sector of the economy. Approximately 7,000 to 9,000 professional films are produced worldwide each year. India produces the largest number of films—about 2,600 annually. Before the pandemic, China was second in the world with about 1,200 films, while the USA produced only 700-900. After the global market recovered from the pandemic, production rebounded to 93%. Filming of Ukrainian films was halted in 2022 due to the full-scale invasion of the country, but production began to gradually recover in 2023.

Analysis of trends in the Ukrainian film market indicates positive dynamics. Currently, the Ukrainian film industry is experiencing an unfavorable period. Following the pandemic, there is a positive trend across all countries toward returning to 2019 levels; however, Ukraine is unlikely to return to those figures soon. In 2022, the revenue from Ukrainian cinema amounted to only 33% of the revenue from 2019, marking the worst figure in global cinema. The prolonged pandemic and full-scale invasion have significantly affected the results. However, 2023 has shown much improvement compared to the previous year for Ukrainian cinema.

The release of new films, such as "Pamfir," "Mavka," "Dovbush," and "Luxembourg, Luxembourg," achieved immense success not only in Ukraine but also in the global film market. In 2024, approximately one-third of all box office receipts will come from Ukrainian films, a record for the past few years. Furthermore, it is essential to note the international box office revenue of the film "Mavka," which amounts to approximately \$13 million, a unique achievement for a film from Eastern Europe [1].

The revenue generated by Ukrainian films under extremely challenging conditions serves as a vivid example of how government measures can have a significant and successful impact. Despite all political aspects, elements of protectionism, including measures to stimulate national production, can be beneficial in the domestic market. However, the draft law from the Verkhovna Rada regarding the transition of cinemas to showing films in English will significantly hinder the development of the Ukrainian film market. If such a bill is approved, a substantial portion of the audience will stop visiting cinemas (or will visit much less). This audience includes:

- Children who have not yet learned to read.
- Elderly people.
- Preschool and primary school-aged children who usually cannot focus on subtitles for long periods.
- People with health issues who cannot strain their eyesight.
- Viewers who find it difficult to watch a film and follow the subtitles simultaneously.

The emergence of new producers of substitute goods is not a threat to domestic film distribution. During the quarantine, many people became accustomed to watching movies in home theaters and on various online platforms. However, after the quarantine ended, the number of visitors sharply increased, as the cinema experience remains one of the primary forms of entertainment for society. The competitive pressure from suppliers significantly affects the operations of cinema chains, as suppliers and distributors can raise prices for their products and services, which would be disadvantageous for the cinema network. The competitive pressure from consumers also has an impact, as there are many competitors in this field, but this is not a threat to the company.

The problem of how the marketing environment influences the strategy of cinema networks needs to be explored more deeply and from multiple perspectives. Researchers often focus on the global experiences of developed countries. However, Ukrainian cinema networks cannot always apply the experiences of American or Japanese cinemas, especially under unstable economic, social, and political conditions. Distribution, as one of the large-scale components of cinematography, effectively

connects the film creator and the audience, ensuring the continuity of the production process by recovering filming costs through effective promotion. During the screening phase, both the aesthetic and social potential of a film can be realized through its market value, which is economically justified. Unfortunately, there is no perfect model for the development of the film industry. However, there are examples of effective organization of film production and distribution, leading to high profitability in the sector. This involves a production cycle in film studios based on two main principles: combining production, distribution, and screening into one (main) company, and having smaller companies as part of the main one or as independent entities that utilize the services of larger ones. Combining production, distribution, and screening allows for the implementation of a unified company policy, thereby maximizing profits.

The analysis of marketing environment factors is the initial stage of strategic management, as it aims to provide a foundation for forming a mission and objectives, as well as developing behavioral strategies that enable the company to implement its mission and achieve its goals [17]. Therefore, it is extremely important to diagnose all significant factors affecting the strategic management system of cinema networks in Ukraine when analyzing their marketing environment.

When analyzing the internal dynamics of the domestic film process, particularly the development of its aesthetic component (transformation of visual-narrative aspects, means of expression, etc.), it is quite difficult and impractical to abstract from factors such as economic, political, socio-cultural, and technical circumstances, which may seem "extraneous" or purely "external." The functioning of film distribution is based on the rational use of all resources aimed at ensuring intra-industry profitability, increasing the economic efficiency of individual film rentals, and boosting the overall profitability of the film industry.

Considering the nature of competition between companies in the relevant industry is an important factor [4]. This is explained by the fact that competition exists not only between products but also between market strategies, managerial, and operational systems. Enterprises that take this competition into account gain advantages for successful operation. Macro-environment factors that should also be considered when determining the development prospects of film distribution include: geographical location and communication development; the professional level and educational attainment of the population; competition characteristics; national peculiarities of business conduct.

Practically all countries worldwide have a scheme for the distribution of foreign films, initiated by American closed-cycle film studios, with minor specific contractual conditions regarding distribution and screening [9]. The state of film distribution in many countries is determined by historical precedents, socio-economic characteristics of their development, uneven state regulation, and support.

It is worth noting that studying the marketing environment of cinema networks allows for the determination of their competitive positions in their industry, in particular market segments, according to their performance results and their strengths and weaknesses compared to other networks. By analyzing the impact of factors in their operations, cinema networks can primarily develop comprehensive approaches to solving potential problems, establish methods for evaluating the effectiveness of resource use and management, determine their value, enhance the level of control and protection of working capital, improve the strategic management system, increase the level of informational support, develop new products, and offer a system of additional services.

Considering all these factors, Ukrainian cinema networks will ensure a stable and reliable position in the international market. The most influential factors in the marketing environment affecting the competitiveness of cinema networks should be considered as follows:

- Consumer needs, including exclusive and individual needs, as well as the capabilities of cinema networks to meet these needs.
- The state of the domestic raw material base and the possibilities for filmmakers to reduce production costs by lowering material expenses.
- Government support for the industry, which will help limit the import of low-quality films from Eastern countries and Europe.
- Government support for the industry that will allow for an increase in film production volumes for the domestic consumer by reducing production volumes under processing contracts.

The growth of competition in the film distribution market underscores the relevance of enhancing the marketing attractiveness of cinemas to build long-term relationships with existing clients and attract new clients based on cinema marketing principles. Marketing encompasses almost all areas of cinema market activities as they influence the production, sale, and promotion of products and services. The core principle of cinema market marketing is to create products and provide services that meet consumer needs.

Today, film production generates film consumption and exists for it. The peculiarities of marketing cinema products and services are largely determined by the specifics of the film market, its complex structure, which intertwines various internal and external connections. The elements of this structure actively interact with the external environment and are its derivatives. Cinema marketing is defined not only by what contributes to increasing cinema revenues through the effective use of financial resources but also by the specifics of the film market as an artistic sphere that is subject to creative activity. Therefore, marketing activities in the development and improvement of cinema services offered by domestic cinemas should focus on



fulfilling the socio-cultural functions of cinema through satisfying the audience's needs.

The results of the marketing research showed that the majority (97.7%) of respondents prefer cinema as a genre of art. The most popular means used by respondents to watch films are free online channels (77.3%), followed by cinema services (65.9%), indicating the high popularity of cinema establishments. 72.7% of respondents indicated that the main factors influencing their decision to watch a film in a cinema are quality sound and image, the atmosphere in the cinema (56.8%), the opportunity to dress up and “go out into the world” (38.6%), and the ability to quickly watch new releases (36.4%). From this, we can conclude that going to the cinema is perceived by potential viewers as a comprehensive service.

When answering the question “What do you consider when choosing a cinema to watch a film?”, the following distribution of importance was received: ticket price – 17; film repertoire – 20; comfort – 24; cleanliness in the hall – 26; availability of a mobile app – 12; discounts – 17; information about new releases and promotions – 15; food court assortment – 17; absence of queues – 18; staff politeness – 25; accompanying events (meetings with film stars, discussions of films, etc.) – 17. From this, we can conclude that the most important factors for customers are comfortable viewing conditions (cleanliness in the hall), staff politeness, and the cinema's repertoire. Factors of medium importance include the absence of queues, food court assortment, and ticket prices. The least important factors were “information about new releases and promotions” and “availability of a mobile app.”

The preferred methods for purchasing tickets among respondents are online via the website and online through the app. The second most popular method is purchasing at the box office on the day of the screening. This indicates the feasibility of increasing the use of digital ticket distribution means.

The most accessible means of obtaining information about new films are social networks (56.8%), recommendations from friends and acquaintances (20.5%), and the cinema's website (15.9%). This suggests that cinema networks should utilize internet tools for advertising campaigns and focus on viral marketing principles.

Regarding the convenience of using internet resources to learn about new films, the most convenient for respondents were the cinema's mobile app (22.7%) and the cinema's website (20.5%). Among the genres preferred by viewers, comedy (58.8%), adventure (54.5%), fantasy (40.9%), family (29.5%), sci-fi (36.4%), detective (36.4%), based on real events (27.3%), action (22.7%), and horror (20.5%) were highlighted.

The biggest obstacles to visiting cinemas identified by respondents are: risks associated with wartime and air raids – 36.4%, absence of favorite genres in distribution – 34.1%, inflexible screening schedules – 18.2%, high ticket prices – 22.7%, dirt in the hall after previous screenings – 18.2%, high food court prices –

18.2%, and low frequency of repertoire updates – 18.2%. Regarding the optimization of the genre assortment at “Multiplex,” proposals were made to establish cooperation with “Arthouse Traffic,” since arthouse films are currently screened by “Planeta Kino” in Lviv.

To overcome all barriers related to visiting cinemas, cinema establishments should optimize the genre structure of film distribution, the schedule of screenings, and the updating of repertoire. They should ensure the reliability of shelters, develop a loyalty program for regular customers that allows them to save on ticket prices, and also reconsider the pricing policy of the food court.

Based on the summary of respondents' answers regarding consumer behavior factors among cinema visitors, we can conclude about the digital profile of the cinema network's clients: the most active segment is youth aged 19-25, who visit cinemas primarily on weekends during the 2-4 weeks of distribution after 6 PM, purchasing tickets independently via the mobile app, preferring standard seating in the auditorium. Most consumers in this segment visit cinemas several times a month with friends or family. Visitors aged 35-45 typically have above-average income, are married, and have children under 16 years old. This category of consumers visits cinemas mostly less than once a month.

Moreover, the primary segment of the cinema network learns about new films from social networks (Facebook, Instagram, YouTube), the cinema's website, and advertising before screenings (e.g., “Napoleon,” “Barbie,” a film about the group BTC). The most attended films are “Dovbush” (13.6%), “Barbie” (9.1%), “Oppenheimer” (9.1%), and “Avatar” (8.2%). From this, we can conclude that an active advertising campaign for a particular film positively influences respondents' decisions to visit the cinema, as confirmed by 90.9% of those surveyed.

The ideal conditions for a cinema screening, according to most respondents, include a small number of people in the hall, silence, a comfortable temperature, the presence of comfortable transformer seats, cleanliness, a flexible screening schedule, a quality film product, an intelligent audience, accessibility of the cinema, the existence of a mobile app, the ability to purchase tickets on the go, the absence of queues, and the inclusion of popcorn in the ticket price.

Thus, the results of the marketing research on the cinema market in Ukraine indicate that the main problems hindering the recovery of the industry during the war are:

- a reduction in the consumer audience due to migration and mobilization of the population;
- the cessation of film screenings during air alerts;
- power supply interruptions affecting cinema market entities in Ukraine.

Therefore, this study allows us to identify the main consumer preferences and the development directions of the domestic film distribution market, the so-called “growth vectors,” aimed at improving it, which should be embedded in the marketing activities of the cinema. Such development directions should include:

- preserving and gradually increasing market share;
- improving marketing activities to attract and retain customers;
- expanding distribution channels.

A marketing study of the film distribution industry, features of the film distribution marketing environment and its market opportunities was conducted. The dynamics of the film distribution market were analyzed, indicating a decrease in demand for film distribution services and, consequently, a decline in the profitability of this sector due to losses caused by increased uncertainty in the business environment related to wartime conditions. It was established that marketing environment factors play a crucial role in the life cycle of cinema networks. Among them, the most influential are consumer needs, including exclusive and individual preferences, as well as the capabilities of cinema networks to satisfy these needs. Market segmentation of the film distribution sector was carried out based on a survey of key segments, identifying the main consumer preferences and development directions for domestic film distribution aimed at enhancing its marketing appeal for customers, which should be foundational to the marketing activities of domestic cinemas under wartime conditions.

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# **MARKETING SOLUTIONS FOR EDUCATIONAL INSTITUTIONS IN TIMES OF ECONOMIC CRISIS**

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The current state of crisis marketing is characterized by a well-developed theoretical and methodological framework that enables the diagnosis of crisis indicators, the likelihood of such phenomena, and the stabilization of critical situations. It also supports the development and implementation of programs to overcome crises, contributing to sustainable economic growth. However, there remains a lack of consensus among scholars regarding the definition of "crisis marketing" as a distinct form of marketing activity with its own unique content and methods [1]. A review of existing theoretical materials suggests that there is no significant difference in the essence, goals, and objectives of marketing applied within the context of crisis management. In fact, the term "crisis marketing" is often associated with action plans aimed at achieving institutional goals in a new, challenging environment. This implies that during a crisis, the core marketing strategy remains unchanged, ensuring that the institution does not lose sight of its long-term development prospects, including post-crisis recovery [2].

In a market economy, human resources, along with natural, material, and other resources, play a vital role not only in production processes but also in exchange, distribution, and consumption. The human resource is unique, as it interacts with and facilitates the utilization of all other types of resources. The development of a sustainable economy depends heavily on the professionalism and qualifications of individuals engaged in socially beneficial activities.

For sustainable economic growth, several conditions must be met: (a) a public demand for the purposeful transformation of the current state into a desired one to achieve specific goals; (b) the availability of free capital for investment in economic development to yield certain benefits; (c) the presence of relevant participants in the

economic process, who, despite having individual objectives, operate as part of a unified system; and (d) the long-term and irreversible nature of economic processes. Thus, enhancing the professional abilities and qualifications of human resources is critical for shaping a sustainable economy.

The objective of this research is to explore crisis marketing strategies in the context of a sustainable economy during educational crises. These crises are seen as a dual process: on one hand, they result from the impact of economic crises on the education sector, and on the other hand, they stem from the inability of the education system to meet the evolving demands of the information society.

The interaction between strategic and tactical marketing goals plays a crucial role in crisis management, requiring a dynamic analysis of strategies to achieve these goals. This approach highlights the importance of examining the transition from tactical to strategic objectives over time, where the actual tactical results are compared with potential strategic outcomes, determining the effectiveness of management. Crisis management, as a process of interconnected functions, necessitates the identification of preventive factors at the pre-crisis stage, the development of strategic marketing plans, and the control of risk factors to mitigate potential losses and negative consequences. During pre-crisis management, emphasis is placed on strategies and methods aimed at preventing crises, with a focus on tools and factors that can facilitate recovery (crisis management), followed by strategies for renovation and post-crisis management systems.

The role of marketing in a crisis is to reassure customers that the value of a product is aligned with its quality, ensuring the satisfaction of specific needs. Achieving this requires various approaches, but it is essential that such motivations do not involve misleading consumers, as this could result in significant losses in the future. Therefore, the integrity of marketing efforts is paramount, especially in times of crisis.

Efforts to neutralize the negative consequences of economic crises often focus on sectors directly linked to basic economic indicators, neglecting relatively autonomous areas like education. Education, as a key component of the knowledge economy and information society, becomes particularly vulnerable during economic crises due to its equivalence to other economic sectors, where financial expediency and clear management become the priorities. The impact of economic crises on education has been explored by O. Hrishnova [3], while the broader challenges in education have been studied by scholars such as, U. Husar [4], V. Kremen [5], and N. Savina [20, 21]. In the knowledge economy, where education is increasingly commercialized and knowledge is treated as a commodity, a key factor for its continued development is its capacity to withstand the destructive effects of economic crises and adapt to the demands of the information society.

The objectives of marketing activities in education, as a response to changes in the external environment, have been studied by Ukrainian experts such as T. Obolenska [6], P. Bielenkyy [7], and O. Kratt [8]. Their research highlights the importance of marketing as a strategic tool for educational institutions, enabling them to navigate the challenges posed by economic crises and maintain their relevance in a rapidly evolving knowledge-based economy.

The methodology of this research on crisis marketing in educational institutions combines both qualitative and quantitative approaches to analyze how marketing strategies can help mitigate the effects of economic crises on education. The first step involved conducting a detailed review of existing research to establish the theoretical foundation of crisis marketing and its specific application in the education sector. Additionally, studies from other sectors were reviewed to compare strategies used in crisis situations. Data collection involved gathering both primary and secondary information. Data consisted of financial reports, marketing plans, and other relevant documents from educational institutions, which provided insights into the impact of marketing activities on the sustainability of these institutions during crises. To gain a deeper understanding of the practical application of crisis marketing, several case studies of educational institutions were analyzed. These case studies examined the specific strategies used, how these strategies evolved over time, and their outcomes in terms of student enrollment, financial performance, and institutional resilience. Statistical methods were used to analyze data from the case studies and interviews, measuring the effectiveness of marketing strategies.

The results of this study highlight the integral role that marketing plays in crisis management, not merely as a subsystem but as the foundation for all other units involved in managing a crisis. Crisis marketing strategies, such as innovation strategies, personnel strategies, competitive strategies, and creative strategies, are crucial in overcoming crisis situations and identifying new market opportunities [9]. This reinforces the view that marketing, when strategically applied, becomes a powerful tool for both navigating crises and supporting long-term institutional resilience [10].

The analysis of educational expenditures in OECD countries, as reported in 2018, shows that on average, 4.9% of GDP was spent on education institutions. Some countries, such as Norway and Chile, invested as much as 6.6% of their GDP in education, while countries like Ireland and Luxembourg reported the lowest expenditures at 3.3%. This data emphasizes the essential role of education in supporting a sustainable economy, as higher investment in education helps develop human resources, which are fundamental to economic renewal and growth. Given the importance of education, the application of marketing strategies within educational institutions becomes even more critical during economic crises. The ability to

communicate effectively, both internally and externally, and to use these communications as tools for crisis management can determine an institution's ability to thrive during difficult times.

Marketing communications emerge as a key component of crisis management, serving as the subject, means, and outcome of marketing activities. During crises, external communications are often prioritized over internal ones, as institutions need to address multiple stakeholders, including students, parents, staff, and the broader public. Multi-channel communications are particularly important, given the complex nature of crisis situations, where problems are interconnected, and solutions require input from various sources [11]. The use of integrated marketing communications is therefore essential to ensure that messaging is clear, consistent, and effective across all platforms.

Furthermore, the success of marketing in crisis management depends on the quality and reliability of the information being communicated. It is important to select information based on its content, structure, and the credibility of its sources. Inaccurate or misleading information can exacerbate an already challenging situation and lead to further losses. Thus, marketing becomes not just a tool for promotion or public relations but a central element in crisis response, providing transparency and building trust with stakeholders [10].

In the system of crisis marketing management, various elements can be identified, including the crisis phenomena themselves (the object), the responsible units of crisis management (the subject), the target management processes, and the methods and means of managing these crises. A well-defined system of feedback and adjustment ensures that marketing strategies can be modified as the crisis evolves, making them more responsive to the dynamic environment in which educational institutions operate. This approach underlines the importance of continuous monitoring and adaptation, ensuring that crisis management is proactive and that institutions remain agile in responding to new challenges [12].

The result of marketing anti-crisis management (Fig. 1) is the development and implementation of a marketing anti-crisis strategy designed to help educational institutions overcome the crisis. These strategies can be classified based on several characteristics. First, by the stage of crisis management, which may include the pre-crisis stage, the crisis stage, or the elimination stage. Second, strategies are categorized by the nature of their impact, such as strategies of reduction or market-capturing strategies. Third, they can be differentiated by budget constraints, such as service strategies or image strategies. Additionally, strategies can be based on elements of the marketing mix, including product development or concentric diversification strategies, and on forecasts of market conditions, such as the strategy of returning to the market after a downturn. They may also depend on the current market situation, leading to



strategies like conversion or incentive marketing. Lastly, strategies can be tailored according to the institution's competitive position, whether it is a large, medium, or small enterprise [13].

In the context of education, where the primary goal is to create conditions that allow individuals to learn and achieve their life goals, the main consumer of educational services is a person with unique and individual educational needs. These needs are dynamic and can be understood as a state of mind that arises from the recognition of a demand for specific knowledge, skills, or competencies. As individuals seek to satisfy these demands, they engage in mental activities aimed at fulfilling their educational needs. This makes the personalization of education crucial, as institutions must align their marketing strategies with the evolving needs of learners in order to remain competitive and relevant, especially during times of crisis [14].

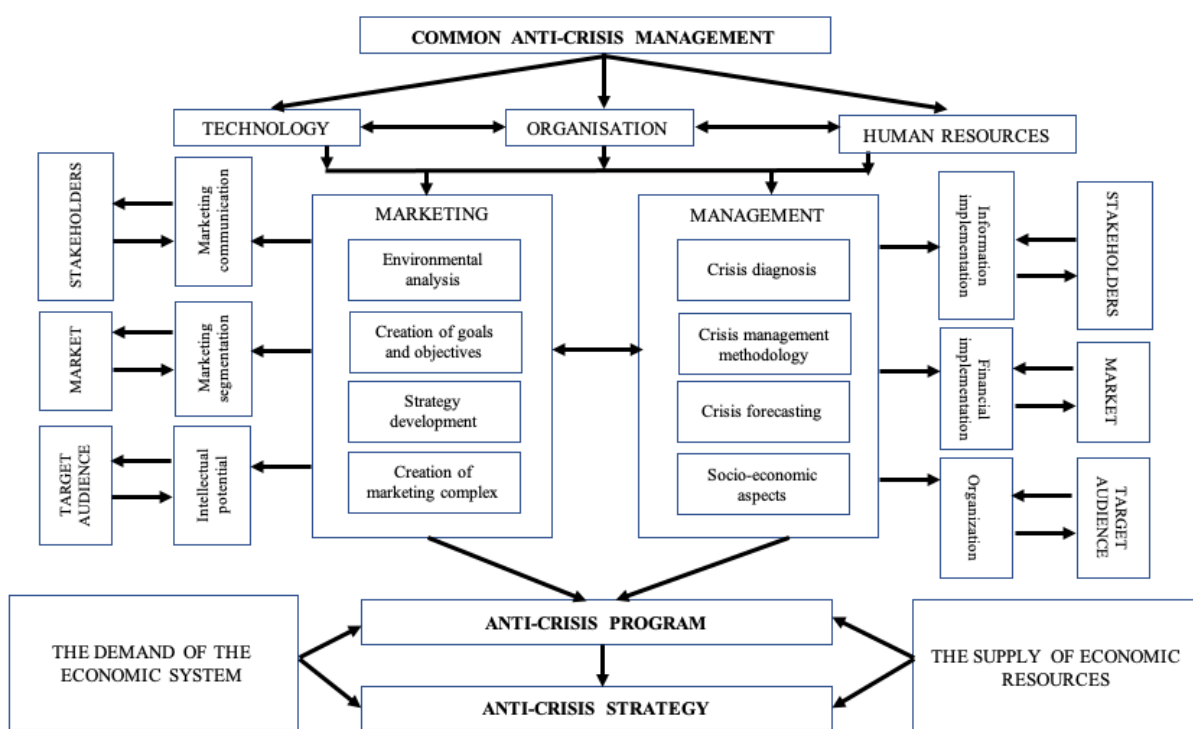


Fig.1. Marketing in crisis management for sustainable economy

To describe education as a subject of market relations, it is essential to define key terms such as educational service, educational marketing, and educational product. An educational service is understood as a collection of educational and scientific information created by a pedagogical team, which is delivered to students in the form of both general and specialized knowledge, along with practical skills that can be applied in professional life. Educational marketing is the management activity of an educational institution within a market economy, which involves researching the demand for educational services that exceed state standards and aims to promote human educational needs by developing and implementing strategies to provide a quality educational product. An educational product, in turn, is regarded as a

specialized intellectual product that has been adapted to meet the needs of a specific segment within the educational services market.

As a subject of market relations, educational institutions function within a marketing environment that is composed of both internal and external elements (Fig. 2). The internal environment includes the organizational structure of the institution, its resources, the range of educational products it offers, and the marketing tools it employs. The external environment, on the other hand, is divided into macro and micro-environments. The macro-environment consists of factors within the socio-economic and socio-political system, such as political, social, demographic, economic, and cultural influences, over which the educational institution has no control. The micro-environment involves entities that directly interact with the educational institution, such as consumers, competitors, and other related audiences. These external factors, particularly in the macro-environment, shape the challenges and opportunities faced by educational institutions, especially in times of crisis, and influence the strategies that are adopted for marketing and crisis management.

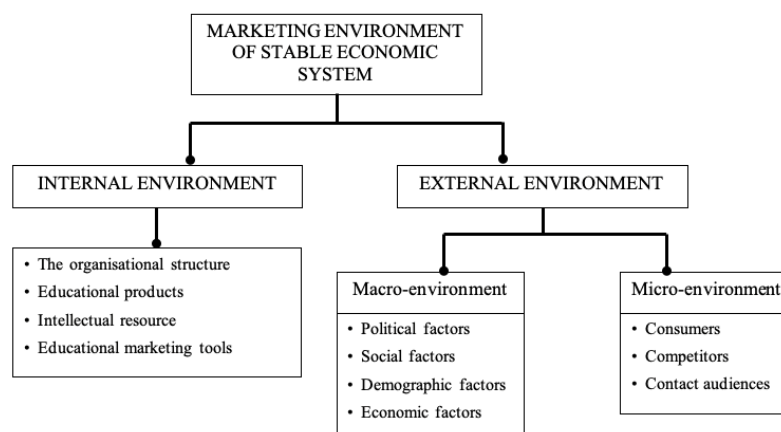


Fig. 2. The structure of the marketing environment of the educational institution

It should be noted that the goals of education marketing are quite broad. These include understanding the competition between educational institutions and how it differs from competition in the goods market, investigating the unique features of education as a service, identifying the marketing mix specific to educational institutions, and pinpointing key aspects of communication activities within the institution. Targeting the creation of an effective marketing environment in educational institutions, it is crucial to ensure productive communication activities. These activities should follow key principles, such as consistent periodicity and the use of well-established advertising methods, including open days, outreach to lower-ranking educational institutions, and participation in annual exhibitions [13].

In times of economic crisis, when education is seen on par with other sectors of the economy, the key components of education marketing are similar to those in other

industries. They include product (educational services), pricing strategies, communication activities, and distribution policies. A distinctive feature of anti-crisis marketing management in educational institutions is the intensification of marketing tools, particularly in terms of internal and external communication activities. This involves enhancing transparency, ensuring accountability, and developing strategies for aligning educational offerings with stakeholder needs, while also emphasizing the outcomes of these efforts.

In educational marketing, the concept of a "commodity" has a dual nature. It is defined not only by the quality of services provided by the educational institution but also by the demand for certain specializations in the labor market. When considering pricing strategies for educational services, several factors must be taken into account, such as the prestige of specific specialties, the reputation of the educational institution, and the characteristics of the city in which it is located (Fig. 3). These elements play a significant role in shaping the perceived value of educational services.

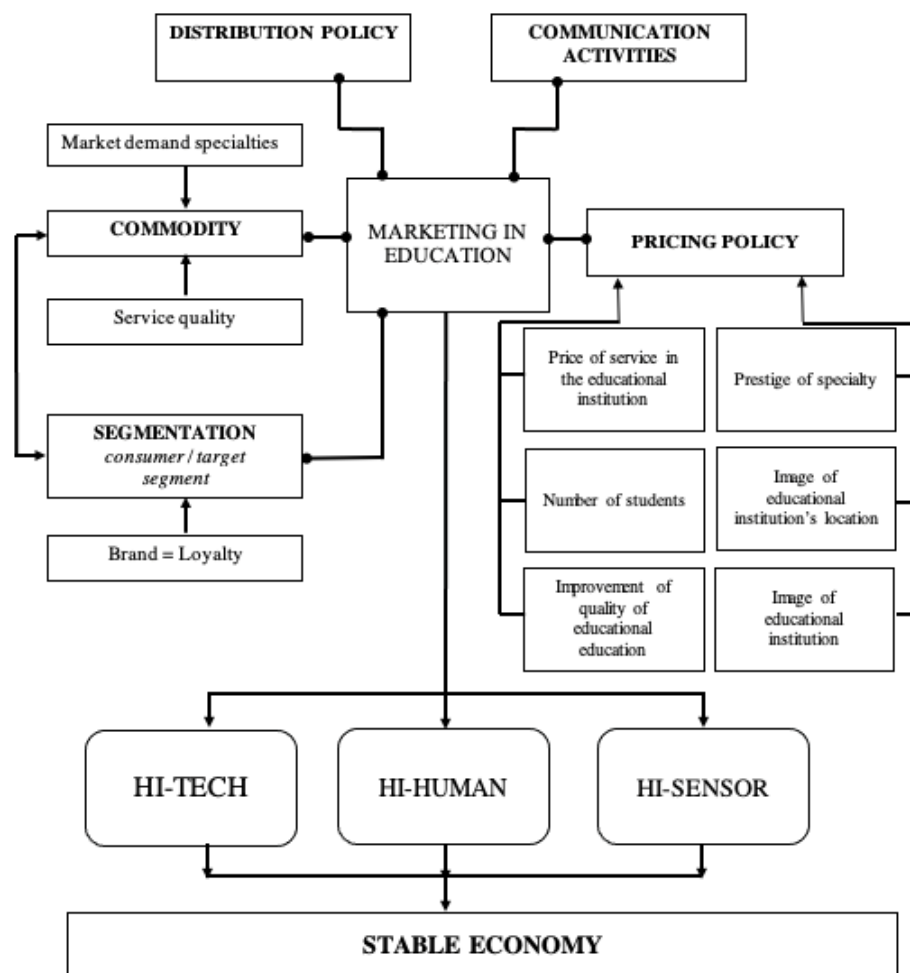


Fig. 3. The semantic model of the educational marketing for sustainable economy

In times of economic crisis, when purchasing power declines, understanding the consumer audience and analyzing its behavior becomes essential for adjusting the institution's offerings to the market. A key strategic decision during such periods, when reduced purchasing power leads to a drop in demand, is selecting a strategy that targets the right market segment or segments. This ensures that the institution can maintain or adapt its market position effectively. Market segmentation, which is crucial to this process, involves dividing the market into distinct groups of customers who share similar needs, characteristics, or behaviors. Each of these groups may require a specific type of product or a tailored marketing approach. In the context of education, this means identifying the unique needs of different student demographics and crafting marketing strategies that align with their preferences and demands.

Analyzing the inefficiencies of market offerings in light of declining consumer purchasing power reveals that focusing the brand on the motivations of specific consumer segments can enhance brand perception and foster loyalty among the target audience. This strategic market segmentation in educational services aims to predict parameters necessary for developing an effective organizational strategy. Key market parameters include the functions or demands that need to be satisfied, the identification of consumer groups by target segments, and considerations regarding volumes, prices, and terms of sales within those segments [15].

In the context of transitioning to a market economy and the transformations associated with the Bologna process, the conceptual model of education expenditures proposed by G. Palm appears particularly effective. This model suggests that increases in education expenses are closely linked to changes in service pricing within the education system, the number of enrolled students, and improvements in the quality of educational services. Research indicates that maintaining education quality is critical; thus, distribution policies improved by expenditures per student must align with increases in enrollment numbers to prevent quality deterioration. Improving the quality of primary education is particularly beneficial for the broader population, as it contributes to reducing inequality, while expanding secondary enrollment rates and associated expenditures can lead to more equitable income distribution [16].

When considering modern educational institutions as participants in market relations during an economic crisis, it is crucial to characterize them by their competitiveness. This means that educational institutions must demonstrate strong outcomes while remaining in high demand, necessitating a continuous need for development. The effective functioning of educational institutions relies on three primary factors: management, marketing, and innovation. Internally, there is a need to foster an environment where staff are motivated to work productively and collaboratively toward common goals [15].

However, implementing this approach amid pronounced disparities in the population's standard of living presents significant challenges. Additionally, educational institutions must be responsive to societal changes, such as a sharp decline in domestic production, the emergence of new social groups (including businessmen, entrepreneurs, and farmers), the erosion of the spiritual sphere (evident in the spread of materialism through media and the internet), and the influence of churches and political parties vying for the engagement of young people. Each of these factors necessitates a strategic and adaptable response from educational institutions to thrive in a challenging environment [6].

The activities of educational institutions are fundamentally rooted in intangible assets, which include the expertise of the scientific and pedagogical team, the educational and methodological support of the educational process, scientific developments, patents, and licenses. These components collectively represent the intellectual potential of the institution. Alongside a robust material and technical base, these intangible assets are crucial to the institution's overall value. However, intangible assets can depreciate rapidly, necessitating ongoing renewal and investment to maintain their effectiveness.

Educational institutions can also be regarded as innovative entities, where the primary resource is their staff. The intellectual potential of the staff is essential for fostering innovation and generating scientific products. The vision for developing educational institutions largely hinges on management's ability to innovate and implement flexible management strategies.

Intellectual potential within any enterprise comprises three primary elements: human capital, which refers to the skills and expertise of the staff; consumer capital, which encompasses the segments of customers targeted by the institution; and structural capital, which includes the capabilities to respond effectively and efficiently to evolving market demands.

For educational institutions, potential customers of educational services, and their founders, the qualitative assessment of outcomes is paramount, as this reflects the institution's intellectual potential. Evaluating the intellectual capital of an educational institution involves several key indicators, which can be categorized by the components of intellectual potential and aligned with strategic goals [19]:

First, enhancing the attractiveness of the institution is vital for maintaining competitiveness in the educational market and for attracting and retaining high-potential students. Second, improving the efficiency of scientific and pedagogical staff is crucial, with a focus on hiring highly qualified teachers, researchers, and professionals.

Third, fostering innovative and scientific development is integral to the institution's activities, encompassing publishing, research, and the commercialization

of intellectual property. Fourth, the development of educational activities is essential, which involves refining educational methodologies, standards, technologies, and learning support systems.

Fifth, creating a strong brand for the educational institution is necessary to achieve a high level of satisfaction among students, employers, partners, and domestic and international NGOs regarding the quality of education and research activities. Finally, expanding external relations is key, fostering long-term partnerships with other educational institutions, research centers, companies, and foundations [18]. This includes promoting educational and scientific cooperation and facilitating academic mobility for students, teachers, and researchers.

By focusing on these aspects, educational institutions can enhance their intellectual potential and improve their overall effectiveness in a competitive landscape.

The study of the role of marketing in crisis management reveals a lack of consensus among scholars regarding the definition of "crisis marketing" as a distinct category of marketing activity. However, in the context of an economic crisis, where complex and unexpected situations arise, the need for urgent solutions necessitates the development of crisis marketing strategies. These strategies serve as the foundation for all operational units within an educational institution, ultimately leading to the formulation of a marketing anti-crisis strategy aimed at navigating the institution through challenging times.

The recent economic crisis has significantly impacted public funding in the education sector, shifting priorities towards primary education. This shift has resulted in a reduced government order for higher education, placing the financial burden of tuition fees on students and their families. Consequently, this situation compromises the principle of access to higher education, particularly in an environment marked by declining wages, unemployment, and an insufficient credit system. The decreasing investment in higher education in Ukraine underscores the sector's lack of prioritization by the state.

To effectively address the challenges faced by educational institutions under market conditions, conducting thorough market research is essential. Theoretical and practical aspects of these institutions must be viewed within the framework of social economy. A key element in developing a crisis management strategy for education is strategic market segmentation, which includes identifying the functions or needs to be met, defining target consumer groups, determining volumes, pricing, terms of sale, and utilizing technology to satisfy market demands.

Understanding consumer behavior and identifying target segments are critical in adapting educational offerings to the prevailing market environment, especially amid declining purchasing power. The strategic market segmentation of educational services

aims to forecast market parameters, thereby informing organizational strategies. By concentrating on the motivations of specific consumer segments, educational institutions can enhance brand perception and foster loyalty among their target audience.

Given that the activities of educational institutions rely heavily on intangible assets such as the knowledge and experience of their staff, educational support, scientific developments, and other intellectual resources it's vital to recognize the importance of these elements. The intellectual potential of an educational institution consists of three core components: human capital, the ability of staff to solve customer problems; consumer capital, which pertains to market segments served; and structural capital, the capabilities utilized to adapt to changing market demands. These intangible assets require constant renewal to retain their value.

In conclusion, effective anti-crisis marketing management in educational institutions, particularly during periods of declining purchasing power and reduced public funding, should focus on three primary areas: strengthening marketing communication, implementing strategic market segmentation, and ensuring the continuous renewal of intellectual potential. By addressing these aspects, educational institutions can better navigate the complexities of the current market environment and enhance their overall resilience.

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# MANAGEMENT OF PROJECT ACTIVITIES IN ELECTRICAL EQUIPMENT MARKETS UNDER UNCERTAINTY

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The war in Ukraine has forced the European Union to re-prioritize energy risks, energy security and environmental sustainability. Over the last decade, the emphasis has been on environmental sustainability: switching to renewable or green energy sources and reducing the use of fossil fuels. The rationale was that energy security issues had already been resolved. But global uncertainty about the collective ability to manage the global energy transition (green energy) justified by rising energy prices and unstable geopolitical situations has narrowed corridors and hindered the scaling of solutions to meet the demand for sustainable energy and help combat climate change. This uncertainty reflects the difficulty in coordinating a carbon-neutral energy transition without creating new threats to regional and global stability. Therefore, the issues of quality design of energy equipment in the conditions of turbulence and uncertainty, diversified approach to the creation of generating capacities (including maneuverable) on renewable sources become extremely relevant.

Uncertainty is becoming a characteristic of modern political, economic, social, cultural environment. Modern researchers and practitioners offer various terms describing such turbulent conditions for the development of markets and activities of enterprises, business planning, labor market, education, career building, etc. The precise term, in our opinion, is VUCA (Volatility – instability, variability; Uncertainty, Complexity – ambiguity; Ambivalence – vagueness, uncertainty, ambiguity, ambiguity). This abbreviation accurately describes the current state of the labor and business market: it is complex, fast, uncertain and unpredictable [Mai, 2024]. Issues related to the peculiarities of VUCA-conditions affect business and management strategies, and, consequently, the activities of the enterprise and its counterparties in conditions of instability and uncertainty.

Electrical engineering design and installation can be positioned as a complex and dynamic system that requires careful planning, analysis and testing to ensure reasonable performance, efficiency, reliability and safety. Today's electrical projects are highly complex and require designers and implementers to have in-depth knowledge in a wide variety of fields. It is obvious that one person cannot solve all the tasks that are set and solved in the design process, and a team of specialists is involved in the work. Team work, technical complexity of the project and the use of modern information systems and design technologies determine the following features of design activity [Andriienko, O. (2017); Danchenko, O.B., & Zanora, V.O. (2019), s. 9-11]:

*Iterability of design.* Creation of a new object occurs in a spiral: it is not always possible to describe the object completely enough the first time. There may be many reasons for this: technical complexity and uniqueness of the object, errors in the initial data (including insufficient input information), rapid changes and turbulence of the external environment. With each subsequent turn (integration) of the spiral, errors are eliminated or corrected, and therefore the accuracy of the project increases. As a consequence, risks and possible unpredictable costs are reduced. Perfect and “expensive” design in general reduces the future cost of installation work and then of the project as a whole.

*Multivariate solutions.* The tasks to be solved by the project have several possible solutions: it is possible to use different equipment, change the location and supply channels, transportation routes, use different number of units of equipment and specialists and so on. As a result, this affects the cost of the final structure or building. In other words, any task can be solved in at least three ways: simply, quickly, efficiently. In the conditions of market economy, patent and resource constraints, design teams have to work through several technical solutions in search of the optimal way.

*The collaborative nature of design.* At least three people are involved in the creation of any project, and even more so in electrical engineering: the designer, the chief engineer of the project and the project manager. If we are talking about large-scale and time-consuming projects, the number of participants can number in the tens and hundreds of people. The need for a large number of specialists is justified by the technical complexity of an electrical project, which requires knowledge in different fields, and a large number of similar solutions, when it is necessary to parallelize tasks.

These features to a certain extent can be attributed to the conditions of uncertainty. That is, the project activity throughout the entire life cycle of the project can be positioned as an activity under conditions of uncertainty.

By definition [Standard of Practice for Project Risk Management. 2009, p. 13] all projects have signs of uncertainty due to their uniqueness and timeliness, the

presence of assumptions and constraints, as well as unpredictability of reaction to the results of design by stakeholders with different requirements.

In most scientific works of domestic researchers uncertainty and risks of project activities are identified and considered as negative events that threaten the realization and achievement of project objectives [Bokovets, V., & Zaiats, O., 2022; Reshetylo, V., & Fedotova, Yu., 2022; Ruban, I., Tiutiunyk V., & Tiutiunyk O., 2021; Halushka, Z., 2023; Sarai, N., 2017].

In the study [Lechler, T., Edington, B. H., & Gao, T., 2012, s. 59-69] substantiates the thesis that risk and uncertainty are not identical: uncertainty includes all identified risks, but risk does not include uncertainty (Table 1).

Table 1

Main differences between the definitions of risk and uncertainty

Risks	Uncertainties
Predictable	Unpredictable
Expected	Unexpected
Known-unknown	Unknown-unknown
Contingency reserve is used	Management reserve is used
Measurable	Not measurable

Source: [Lechler, T., Edington, B. H., & Gao, T., 2012, s. 59-69]

Project management in a turbulent environment must be based on the ability to identify and respond to risks and uncertainties that can affect project deliverables, costs and schedules and this is a prerequisite. Projects, compared to operations, are unique - therefore they carry significant uncertainty. Project management can be seen as an attempt to control an uncertain environment using structured and disciplined techniques such as estimating, planning, cost control, task allocation, earned value analysis, monitoring and review meetings and the like. Each of these elements of project management plays a role in defining or controlling the uncertainty that is inherent in all projects.

The level of uncertainty in today's projects is often so high that traditional project management techniques do not perform well. Analyzing uncertainty allows you to improve the validity of strategic decisions and select adequate management tools to ensure effective project implementation.

The problems of the energy sector in Ukraine and worldwide have become more acute with the full-scale invasion of Ukraine by the Russian Federation. Decentralization and diversification of electricity generation sources as a way to quickly restore damaged and destroyed energy facilities and infrastructure are becoming priority issues for Ukraine. Radical changes in the geopolitical and economic situation and the natural presence of signs of uncertainty and risks in power equipment projects substantiate the need to modify the methodology and methods of management

of project activities in the field of electrical equipment, where the priority is to take into account the degree of uncertainty and risks correlated with the time factor. The study analyzes the state of power generation and distribution facilities in the conditions of full-scale military operations, the prospects for the development of alternative sources of electricity in Ukraine in the post-war period. The decentralization of power generation facilities and energy infrastructure as one of the ways to quickly ensure the stability of energy supply of communities is considered. In the strategic perspective it is necessary to consider the diversification of power generating facilities by primary energy sources as a factor in ensuring energy efficiency and energy independence of the country. The methods of comparison, scientific abstraction, deduction, inverse method of analysis and synthesis were used.

Back in October 2022, at a meeting of EU ambassadors in Brussels, European diplomacy chief Josep Borrell positioned world events as a radical uncertainty in which the speed and scale of change are exceptional. Then it was realized that there were events that had a very low probability, but they happened and had a strong impact. In his view, the European community was experiencing the consequences of a multi-year process in which the sources of prosperity (cheap Russian energy and access to the Chinese market) were perceived as separate from the sources of security. Also, the security of the European Union has been delegated to the United States. As a result: “There is no longer a world in which the US takes care of our security and China and Russia provide the basis for our prosperity” [*My vkhodymo v idealnyi shtorm: Vystup top-dyplomata YeS pro novu svitovu realnist, 2022*].

The energy industry of Ukraine and the world today exists in an extremely dynamic environment and is changing under the influence of internal and external factors. Over the last decades, the Ukrainian energy industry has been trying to diversify generation sources through the development of renewable energy sources, reducing dependence on imported energy resources and improving the efficiency of electrical equipment.

The global energy industry is undergoing significant changes under the influence of global challenges and uncertainties in geopolitics and economics. On the one hand, there is a growing interest in renewable energy sources, and on the other hand, discussions about traditional sources (coal, oil, gas) continue. Expert assessments from renowned organizations and statistics indicate an increase in investments in clean or green energy and digital transformation in the energy sector. The impact of global economic conditions, the growing share of electricity generation from renewable sources and trends towards decreasing dependence on traditional fuels are the key factors shaping energy strategies today.

Before the full-scale invasion, the share of renewable energy sources (RES) in Ukraine was 8.1%. Over the last 10 years, more than USD 12 billion has been attracted

into the renewable energy sector. In 2023, the share of RES in the structure of electricity generation in Ukraine (including large hydropower plants), reached 22%, (in Europe this figure is 42%) [*Alternatyvna enerhetyka*, 2024].

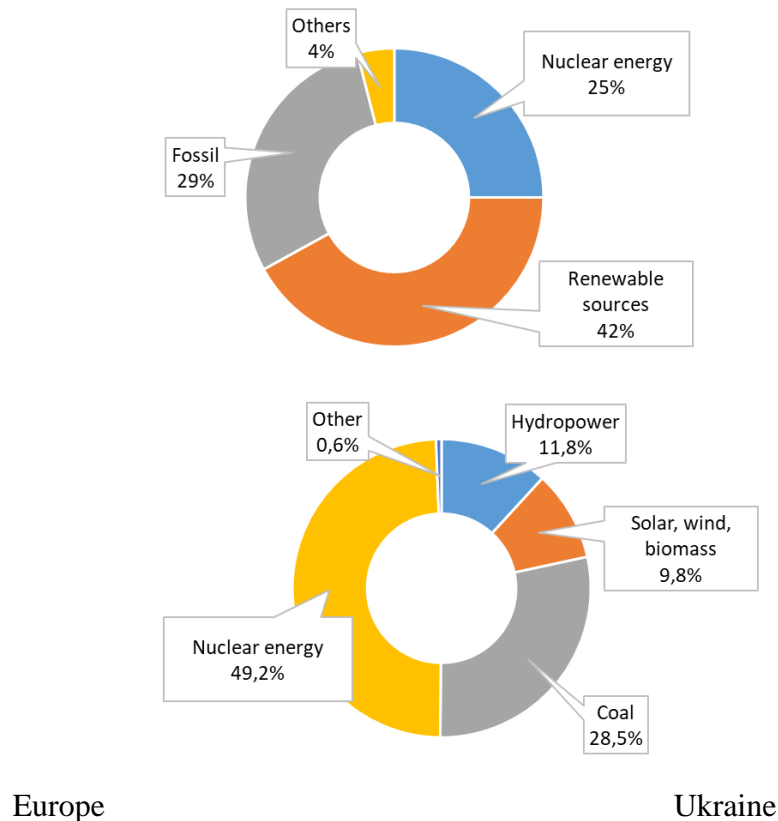


Fig. 1. Energy sources in Europe and Ukraine (2023)

Source: [*Alternatyvna enerhetyka*, 2024]

Despite the hostilities, more than 1,400 new RES facilities (182.3 MW of wind and 500 MW of solar power plants) were connected to the system during 2023.

Full-scale military operations on the territory of Ukraine posed serious challenges for the country - the destruction of energy infrastructure was seen as one of the main tools in achieving the aggressor's goals. The military invasion resulted in damage to the energy infrastructure and instability in energy supplies in 2022-2024.

Today in Ukraine, the most affected by shelling are shunting generation (TPPs) and backbone grids - elements of the energy system that are crucial for the energy stability of the system. In particular, the energy system according to [*Valovyi vnutrishnii product*, 2024], as an industry forms up to 14% of Ukraine's GDP.

According to KSE Institute [*KSE Institute*, 2024], as of May 2024, the most powerful sources of electricity generation and transmission in Ukraine - Kakhovskaya and Dniprovskaya, Zmievskaya and Tripolskaya – are completely destroyed. Up to 80% of thermal power plants and about 50-60% of high-voltage substations were damaged. Direct losses of Ukraine's energy sector as a result of the full-scale invasion

amount to \$16.1 billion [KSE Institute, 2024]. Generation lost more than 9 GW of capacity. This all entailed mandatory hourly outages to balance the system during peak load hours.

Let us consider the prospects for the development of alternative sources of power generation. Due to the military aggression, Ukraine's hydropower facilities suffered significant losses: about 45% of hydropower facilities (2500 MW) were destroyed or damaged - Kakhovskaya HPP, Kanevskaya HPP, Dnepro HPP [Alternatyvna enerhetyka, 2024]. The main hydropower capacities are located on the Dnieper and Dniester rivers, but the potential for installation of small capacity plants exists in all regions with rivers (including the Carpathian region), which would ensure significant energy independence.

The greatest potential for wind power installations is in the north and east of Ukraine (average wind speed exceeds 7 m/s). Solar power generation in the country has great potential: insolation in Ukraine varies from 1100 to 1500 kWh/m<sup>2</sup> [Rivni soniachnoi insoliatsii v Ukraini, 2024]. During 2018-2020, solar generation capacity grew almost fivefold and exceeded one of the industry leaders - Germany. As of 2024, there are about 1400 solar generation facilities of various capacities [Alternatyvna enerhetyka, 2024], which are concentrated in six regions of Ukraine: Ivano-Frankivsk, Dnipropetrovsk, Vinnytsia, Khmelnytskyi, Kyiv and Mykolayiv.

Ukraine's agricultural sector (one of the largest in the economy) may become key for bioenergy development. The potential for biomass production reaches about 34 million tons per year from 94 million tons of agricultural waste [Alternatyvna enerhetyka, 2024].

It is obvious that the priority for Ukraine today is to strengthen the stability of the energy system, ensuring energy independence and energy security through rapid restoration of damaged and construction of new decentralized generating capacities and modernization of the power grid. The larger the share of small power generation facilities, the less vulnerable it will be to the effects of uncertainty under martial law: if one facility fails, consumers throughout the country will not have to be cut off from electricity.

But it is worth considering the other side of the equation - powerful power generation facilities are built to reduce the cost of electricity. The creation of distributed generation facilities is a solution in the short term, but in the strategic perspective the following problems can be outlined:

- sources of primary energy. If we turn to traditional ones - gas, diesel - there are issues of security of the state as a whole (the reasons are outlined above); coal does not provide for compact size of generation; alternative sources (including hydropower) require significant capital investments and are characterized by dependence on weather conditions;

- problems of coordinating the operation of power plants (load, voltage, current frequency) in a common network.

This is reflected in the cost of production, which is justified by the payback period of capital investments, leveling of economies of scale (cost of maintenance, repair work). Although there are bright examples of decentralization of system reliability: the USA, Australia and Great Britain are looking for opportunities to make distributed power engineering a tool for ensuring power system reliability [*GTM, 2024*]

Decentralization of the energy system will be effective only in combination with diversification and combination of energy sources. Maximizing proximity to consumers will, first, solve the problem of power shortages today, and in strategic development will ensure energy independence and development of the regional economy.

Considering the above analysis of approaches to uncertainty, the state and strategic importance of the electric power industry both during the wartime and post-war period, it can be stated that the demand for quality electrical design services of various scales will increase. Any project in most cases is unique in nature. It is obvious that in the conditions of uniqueness of the project it is impossible to determine with high probability all the conditions of the project realization. In order to mitigate the impact of uncertainty and avoid or mitigate risks, the application of various project management methodologies (Waterfall, Agile, Scrum, Lean, Kanban, Six Sigma, PRINCE2), as well as their combination at different stages of project development or execution, becomes particularly relevant.

Design experts consider insufficient information at the beginning and during the design of the electrical installation to be the main cause of uncertainty, and therefore of risks. To create an information base for the development and execution of the project, it is necessary to follow the following steps (steps):

Step 1: The assessment of risks and uncertainties in electrical projects should begin by identifying sources that may affect the objectives, scope, quality, and timing of the project. Sources can be technical or non-technical, internal or external, deterministic or probabilistic. Examples of sources of risk and uncertainty include project errors and changes, component availability, environmental and turbulence factors, regulatory and legislative requirements, customer expectations and feedback, stakeholder communication, resource constraints and allocation, and project management and coordination.

Step 2: Analyze the impact and likelihood of risk and uncertainty on project milestones, cost, and schedule. Various methods and tools can be used to analyze the impact and probability: risk matrices, failure tree analysis, failure modes and consequences analysis, Monte Carlo simulation and sensitivity analysis, decision trees, and expected value analysis.



Step 3: Prioritize and rank risks and uncertainties based on their impact and likelihood, their interdependence and correlation. This will help to focus on the most important and significant sources that require more attention and mitigation of possible impacts. Criteria and methods of analysis may include Pareto analysis, criticality index, risk appetite and value change due to risk, utility and preference functions, multi-criteria analysis, analytic hierarchy process.

Step 4: Develop and implement a mitigation strategy for sources of risk and uncertainty that are high in priority and rank. Mitigation strategies are actions or plans to reduce the impact of sources of risk and uncertainty, or to improve project opportunities and benefits: avoidance and elimination, reduction and control, transfer and sharing, and acceptance and unpredictable actions.

Step 5: Monitor the analysis of sources of risk and uncertainty and the effectiveness of risk mitigation strategies throughout the project life cycle. This will track changes and variations in sources of risk and uncertainty and their impact on project performance, cost, schedules, and quality. The following tools can be applied: key performance indicators and metrics, risk registers and dashboards, change capture and reporting, and feedback loops and lessons learned.

The decision-making process to participate in a project is based on assessments of various project characteristics that allow you to realize and comprehend the situation of the future project and make a decision based on a meaningful set of facts and opinions. In the first stage, individual project characteristics are evaluated, organized into three broad categories (cost, time, quality). In conditions of uncertainty and increased risk it is worth putting the category of time at the top of the triangle, which is directly correlated with the study and ranking of the impact on the project activity of the negative consequences of uncertainty, which can be caused by unpredictable random external influences; insufficiency or incompleteness of information resources; associated with various counteractions (the behavior of competitors or customers for subjective reasons).

At the second stage within the quality category, self-assessment of the readiness of the project team and contractors to implement the project, as well as the attractiveness of the project for them should be carried out. At the third stage - assessment of the customer (the level of his interest and readiness for the communication process in projects with a high degree of uncertainty. Such an algorithm is provided by survey (questionnaire) procedures, where questions are formulated as positive judgments with the proposal to express the degree of agreement or disagreement (Likert scale). For each group of characteristics, private risk indices are calculated (their number depends on the number of factors included in each group). The final stage consists in the joint analysis of all indices and make a final decision on

the expediency of participation in the project, as well as on the use of special management tools taking into account risks and uncertainties.

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# **MARKET RESEARCH OF ONLINE EDUCATION IN UKRAINE DURING TURMOIL**

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As a result of the rapid development of innovative technologies, traditional education has recently lost its attractiveness in the market of educational services. The demand for flexible online courses is growing as consumers prefer foundational education in times of turmoil (for example, during the COVID-19 pandemic or active military actions in Ukraine since February 2022). At the same time, there is a lack of educational services using marketing innovative technologies. In the Ukrainian online education market, there is an active increase in online learning resources, leading to the growing competitiveness of modern educational institutions.

During martial law, most educational institutions in Ukraine were forced to abandon face-to-face learning in favor of online education, which highlights the high demand for online learning resources. Simultaneously, the number of online schools has significantly increased. One of the biggest challenges in this sector is gaining customer trust, creating conditions to build customer loyalty, establishing an emotional connection between the consumer and the educational service provider, identifying the competitive advantages, and effectively managing feedback from clients.

Market research of online education is highly relevant due to several key factors that influence the modern educational paradigm. The growth and rapid development of technologies, particularly in the field of communications and information technology, make online education more accessible and efficient. At the same time, the years of the COVID-19 pandemic highlighted the importance of online education as a key tool for ensuring continuous learning during restrictions and quarantines. During the full-scale invasion of Russia into Ukraine, online educational resources have played a responsible and defensive role in providing high-quality education to foster conscious youth.

Market research of online education requires studying the level of market concentration, the directions of applying innovative educational technologies, etc. In particular, improvements in the theoretical and methodological provisions on the marketing, innovative, and technological support for the development of online

education in Ukraine and the world were explored by S. Y. Kasyan and H. T. Kuroyan [1]. S. Petrenko [2] analyzed the role of Ukrainian massive open online courses in organizing the distance education system under quarantine conditions. O. Melnykova and Yu. Oliynyk in [3] defined the essence and revealed the specifics of online learning. V. B. Vasiliv and B. V. Vasiliv uncovered the peculiarities of the functioning of the online education market and interpreted the content of the customer-oriented aggregator of massive open online courses. However, despite the authors' contributions to studying the specifics of the online education market, the competitive environment of online schools, particularly in times of turmoil, has not been fully explored.

The purpose of the study is to examine the impact of rapidly developing innovative technologies on the educational sector, focusing on the study of the competitive environment in Ukrainian online education, considering the growing demand for flexible online courses. The research tasks are aimed at identifying and determining the main factors influencing the choice of online education during martial law, as well as uncovering the challenges and opportunities faced by educational institutions and online schools, and assessing the concentration of the online education market during wartime.

The object of the study is language online schools operating in the online education market during times of turmoil. The subject of the study is the directions of the development of distance learning in educational institutions in Ukraine during times of turmoil.

To achieve the purpose of the study, the article uses a combination of scientific methods, including:

Problem-oriented method – for identifying the main problems of the economic development of the Ukrainian online education market during the war and determining the influencing factors.

Comparative analysis – for calculating the market share of language schools in the online education market by the number of students in 2022.

Index method – for assessing the levels of concentration of language online schools in the online education market of Ukraine.

To assess the level of concentration in the Ukrainian online education market, the Herfindahl-Hirschman Index (HHI) was calculated using the following formula:

$$HHI = \sum_{i=1}^N S_i^2 \dots\dots\dots(1)$$

is the market share of the i-th company in the segment of language schools in the online education market (%), and N is the number of language online schools for which the indicator is calculated.

If the HHI is below 1000 basis points, it indicates low concentration in the online education market; 1000–1800 basis points indicate medium concentration, and above

1800 basis points indicate high concentration in the segment of language online schools.

The Linda Index is a tool for determining the degree of concentration in the online education market, particularly in the language school segment. Using this index, key players in the market can be identified, and the evolution of competition can be monitored based on the number of students.

For instance, when the value of the index increases by over 200%, it may indicate a significant increase in market concentration. The formula for calculating the Linda Index for two companies in the language online school segment is:

$$IL2 = \frac{s_1}{s_2} \cdot 100\% \quad (2)$$

Incorporating the Gini Index into the analysis allows evaluating the extent to which the distribution of companies by the number of students deviates from an even distribution across different online schools. The closer the Gini Index value is to 1, the greater the inequality in the distribution of students among these institutions.

The formula for calculating the Gini Index to reflect the level of inequality in student distribution is as follows:

$$G = 1 - 2 \sum X_i \sum Y_i + \sum X_i Y_i \quad (3)$$

Where:

- $X_i$  is the share of the  $i$ -th company among all companies;
- $Y_i$  is the share of the  $i$ -th company by the number of students relative to the total licensed capacity of all online schools in Ukraine.

The research is based on the use of a dialectical method for studying economic processes, as well as an analysis of scientific works and publications regarding the formation and development of the online education market both globally and in Ukraine.

In our current time, which is characterized by rapid technological development and constant societal transformations, education has become one of the most pressing and defining problems. Education serves not only as a key to a successful career but also as a tool for cultivating conscious, creative, and critical thinking. In this context, the growing popularity of online education, which offers new opportunities for accessing knowledge and learning at any time and place, deserves special attention.

Online education defines a new approach to learning, ensuring flexibility, accessibility, and the individualization of the learning process. By opening virtual doors to the world of knowledge, it expands learning opportunities for those who previously may have felt disconnected from educational resources.

The period from 2019 to the present has shown that online education is one of the most convenient ways to acquire knowledge. During the COVID-19 pandemic, all educational institutions switched to distance learning using online platforms, and online schools reached the peak of their popularity.

One of the key roles of educational systems is the transmission of knowledge, especially in times of rapidly growing information volumes. To achieve educational goals, instructors need to effectively find, process, conceptualize, and convey large amounts of information and knowledge, which exceed human intellectual capabilities. In other words, creating knowledge from vast amounts of information requires the use of various teaching methods to effectively convey and understand the expanding knowledge base.

Tens of millions of internet users in many countries have already participated in online learning. This process is effectively organized using innovative marketing techniques, as evidenced by the conclusions of educational management professionals—accelerators of online schools. The large amount of data collected opens up opportunities to identify patterns and optimize the virtualization of the learning process and online content.

Various forms of distance learning are available today:

- **Correspondence learning:** In this type of learning, students receive study materials, such as textbooks and assignments, by mail. They work on these materials in their personal time and at their own pace. The instructor can assist via email, phone, instant messaging, or traditional mail.

- **E-learning:** This form allows access to course materials on a computer. CD-ROMs, DVDs, and computer programs are used to conduct e-learning courses.

- **Online learning:** This is a form of e-learning that requires internet access. Online learning is more interactive, allowing students to communicate with instructors and peers in real-time. Students can download study materials from the internet, and instructors can send assignments through an online platform, conduct surveys, webinars, and virtual classes.

- **Virtual classrooms:** These are interactive learning sessions conducted via the internet. They can include web conferences, live broadcasts, or teleconferences. Virtual classrooms allow students to participate in learning activities together with peers, overcoming the lack of social interaction typically found in distance learning.

According to the author, virtual classrooms are the most optimal form of online learning, as they offer several advantages such as real-time learning, collaboration and communication that make students feel more comfortable and help reveal their leadership qualities and educational potential, minimizing the feeling of isolation. Most importantly, virtual classrooms allow students to participate from anywhere, regardless of geographical location, which is especially important during the wartime in Ukraine.

One of the paths for the modern modernization of education in Ukraine lies in the careful study and implementation of advanced ideas and practices that have already brought significant success in reforming educational systems and introducing innovative technologies in countries across Europe, North America, and Asia. In the

USA, there is currently an active campaign to eliminate the digital divide, which reflects inequalities in access to digital technologies. In a joint study by S. Chandra, H. Hill, T. Kotari, L. McBride, and N. Vaduganathan titled "Eliminating the Digital Divide in US Education—Forever" (2021), issues related to this initiative are examined. The authors note that in 2020, when distance learning was introduced in all schools due to quarantine restrictions, the size of the digital divide among students became dramatically evident. According to a 2020 Boston Consulting Group study conducted in collaboration with Common Sense, 30% of children (approximately 15–16 million students) did not have adequate internet access or electronic devices for effective distance learning.

Based on international experience, the main tasks that need to be addressed include:

- Providing additional funding,
- Adapting educational content (national and regional curricula, educational programs, guides, and textbooks) to the new conditions,
- Supporting students from low-income families,
- Collaborating with parents, and
- Partnering with private companies, including internet service providers and media.

Ukraine aims to implement and develop similar educational innovations, particularly in the field of educational technology. For example, considerable attention is paid to adaptive learning technologies, which are part of the trend toward personalized learning. However, despite the annual International Conference on Adaptive Learning Technologies in Ukraine, these technologies have not yet become widespread or practically implemented. Adaptive learning, which is based on technologies that track students' progress and provide analytics on the learning process, has the potential to change the teaching and learning paradigm in higher education institutions.

The improvement in the performance of smartphones, smartwatches, and tablets has made mobile learning accessible to students anywhere and on various devices. The convenience of this approach has created a demand for new services that can improve access to education. The use of mobile phones is also associated with the introduction of virtual, augmented, and hybrid reality into educational processes. The ease of using phones with virtual reality glasses and the availability of applications supporting virtual reality technology in app stores (Google Play and App Store) offer new opportunities for distance learning.

In Ukraine, a number of official documents regulate the implementation of distance learning and ensure the organization of high-quality training for specialists across various fields. However, teachers face several barriers to developing distance



learning, including the lack of desire or financial motivation, lack of computer skills, insufficient digital literacy, and prejudices against innovative technologies.

Despite these challenges, educators are actively working on modernizing the national education system in accordance with modern standards and the demands of integration into the global educational space. They continue to introduce modern distance learning technologies. Therefore, a promising direction for the development of distance learning in Ukraine is close cooperation between software developers for distance learning, distance education methodologists, and university instructors to develop strategies for the application of new information technologies in distance education.

The Ukrainian online education market is saturated with online courses for learning foreign languages, although this segment has not yet gained wide popularity in Ukraine. Many language schools still offer their services in a traditional way. Every year, new domestic and international schools aimed at teaching foreign languages appear in the field of online educational services. English is undoubtedly the leader. The demand for such educational services is constantly growing as people seek to master a foreign language for career advancement, passing international exams, the possibility of entering foreign universities, migration and employment abroad, or simply to improve their language skills.

Marketing analysis of the online education market requires an analysis of the leaders of online schools, chosen according to the 2022 rating (Table 1).

Table 1

Main Characteristics of the TOP-10 Language Schools in Ukraine by the 2022 Ranking

№	Name	Rating	Year of Establishment	Net Income (UAH)
1	International Language Center LLC	8.4	1992	8312299
2	Green Country Language School LLC	9.3	2006	3986500
3	Redford LLC	9.2	2017	3652500
4	Oxford House LLC	9	2007	1402200
5	Speak Well LLC	9.2	2010	1113100
6	English Prime LLC	9.7	2005	890500
7	AntiSchool LLC	9.3	2016	776300
8	Grade Education Center LLC	9.1	2008	263000
9	IT Step School LLC	9.4	2009	21664
10	Closer to the Dream LLC	9.1	2010	17805

*Source: Compiled by the authors based on data [4].*

Analyzing Table 1, several key conclusions can be drawn.

First, the online education market, represented by online schools of various thematic focuses, is competitive, with existing participants having both long-standing operations and rankings formed based on the opinions of end-users of online services.

Not always do companies with a higher ranking have a longer history of operation, indicating different factors of success in the online education market. It's important to consider not only the rating but also the duration of market presence, as this can point to the company's stability and experience in functioning.

Overall, Table 1 provides an understanding of the structure of the online education market in Ukraine and identifies the key players in this field. The analysis of companies based on the net income indicator in the field of online education in Ukraine shows significant differences in income figures among various market participants. The largest net income is noted for Green Country Language School LLC and Redford LLC, with income levels of 3,986,500 UAH and 3,652,500 UAH, respectively. On the other hand, there are companies like IT Step School LLC and Closer to the Dream LLC, which have net incomes of 21,664 UAH and 17,805 UAH, respectively. Hence, the top three leaders by income are International Language Center LLC, Redford LLC, and Green Country Language School LLC.

According to statistical data, as of January 1, 2023, the number of distance education students amounted to 790,834 people. Using this information, the market share of the mentioned enterprises can be calculated (Table 2).

Table 2

Market Share Calculation of Language Schools in the Online Education Market  
by the Number of Students in 2022

№	Name	Number of students (people)	Market Share (%)
1	Green Country Language School LLC	1176	0,148704
2	Closer to the Dream LLC	1500	0,189673
3	Speak Well LLC	1785	0,225711
4	AntiSchool LLC	2000	0,252898
5	Redford LLC	2500	0,316122
6	International Language Center LLC	2500	0,316122
7	English Prime LLC	2760	0,348999
8	Grade Education Center LLC	5000	0,632244
9	Oxford House LLC	6000	0,758693
10	IT Step School LLC	6790	0,858587
Licensed training capacity		790834	

*Source: Compiled by the authors.*

Most companies showed a decrease in net profit in 2022 compared to 2021. The highest net profit in 2022 was demonstrated by International Language Center LLC

(1,527,200 UAH) and Redford LLC (710,550 UAH). A significant increase in net profit was observed for Oxford House LLC (by 189,700 UAH), while AntiSchool LLC suffered the largest loss (-336,300 UAH). The profitability index indicates the degree of profitability of companies. Most companies have positive values, except for English Prime LLC and AntiSchool LLC, which may indicate financial instability problems.

Table 3

Calculation of Profitability of Language Schools in the Period 2021-2022

№	Name	Net Profit (UAH)	2022/ 2021	Assets (UAH)	Profitability Index
1	English Prime LLC	10300	-144200	-11,08	662400
2	IT Step School LLC	35000	27000	0,77	19582
3	AntiSchool LLC	100200	-336300	-3,35	452500
4	Green Country Language School LLC	817400	300200	0,36	2974900
5	Redford LLC	680000	710550	1,95	365300
6	Speak Well LLC	437150	305900	0,69	211071
7	Closer to the Dream LLC	13200	35600	2,69	13234
8	Grade Education Center LLC	31200	360900	11,56	594400
9	Oxford House LLC	2500	192200	76,88	280400
10	International Language Center LLC	1854500	1527200	0,82	144500
SUM		3981450	2979050	-	5352987

Source: Compiled by the authors by data [5]

Thus, the Ukrainian online education market remains competitive, but companies demonstrate different dynamics in development and financial results, requiring careful study and the development of strategies for the further growth of this market.

The concentration assessment of the Ukrainian online education market in the segment of language online schools is presented in Table 4.

Table 4

Assessment of the Herfindahl-Hirschman Index (HHI) for the Online Education Market in the Segment of Language Online Schools

№	Name	Number of Students (people)	Market Share (%)	
			S <sub>i</sub>	S <sub>2</sub>
1	Green Country Language School LLC	1176	0,148704	0,022113
2	Closer to the Dream LLC	1500	0,189673	0,035976
3	Speak Well LLC	1785	0,225711	0,050945
4	AntiSchool LLC	2000	0,252898	0,063957
5	Redford LLC	2500	0,316122	0,099933
6	International Language Center LLC	2500	0,316122	0,099933

7	English Prime LLC	2760	0,348999	0,1218
8	Grade Education Center LLC	5000	0,632244	0,399732
9	Oxford House LLC	6000	0,758693	0,575615
10	IT Step School LLC	6790	0,858587	0,737172
Concentration index (two-part)		1,61728		-
Concentration index (three-part)		2,249524		-
Concentration index (ten-part)		4,047753		-
HHI				2,207176

*Source: Compiled by the authors*

The Herfindahl-Hirschman Index (HHI) is calculated as the sum of the squares of the market shares of all companies in the segment. In 2022, the HHI for the language online schools segment in the online education market was 2207.176, indicating moderate concentration in this segment.

The Linda Index is another indicator used to assess the concentration of the market. Results of the Linda Index for the online education market in the language school segment for 2022 are presented in Table 5.

Table 5

Results of the Linda Index Calculation (Online Education Market, Language School Segment) as of 2022

Indicator	Value (%)
IL2 (for two enterprises)	113,1666
IL3 (for three enterprises)	125,6772
IL4 (for four enterprises)	175,904
IL5 (for five enterprises)	153,9732

*Source: Compiled by the authors*

The Linda Index value at the L5 level indicates a "disruption of the continuity of the L index" ( $L_{m+1} > L_m$ ). Therefore, in 2022, four enterprises (IT Step School LLC, Oxford House LLC, Grade Education Center LLC, and English Prime LLC) formed an oligopoly in the language school segment of the online education market.

The results of the differentiation index and the Gini coefficient in the online education market in the language school segment are presented in Table 6.

Table 6

Calculation of the Differentiation Index and Gini Coefficient: Ukrainian Online Education Market, 2022

Enterprise	$y_i$	$x_i$	Differentiation Index $y_i/x_i$	$\Sigma(x_i)$	$\Sigma(y_i)$	$x_i * y_i$	$x * \Sigma(y_i)$
Green Country Language School LLC	0,001487	0,1	0,01487	0,1	0,001487	0,000149	0,000149
Closer to the Dream LLC	0,0018967	0,1	0,018967	0,2	0,003384	0,00019	0,000338

Speak Well LLC	0,0022571	0,1	0,022571	0,3	0,005641	0,000226	0,000564
AntiSchool LLC	0,002529	0,1	0,02529	0,4	0,00817	0,000253	0,000817
Redford LLC	0,0031612	0,1	0,031612	0,5	0,011331	0,000316	0,001133
International Language Center LLC	0,0031612	0,1	0,031612	0,6	0,014492	0,000316	0,001449
English Prime LLC	0,00349	0,1	0,0349	0,7	0,017982	0,000349	0,001798
Grade Education Center LLC	0,0063224	0,1	0,063224	0,8	0,024305	0,000632	0,00243
Oxford House LLC	0,0075869	0,1	0,075869	0,9	0,031892	0,000759	0,003189
IT Step School LLC	0,0085859	0,1	0,085859	1	0,040478	0,000859	0,004048
SUM	0,0404775	1	0,404775		0,159161	0,004048	0,015916

*Source: Compiled by authors*

As shown in Table 6, the Gini coefficient (for the segment of language online schools in the Ukrainian online education market in 2022) was 0.972216.

Thus, it is established that there is low market concentration (high competition) in the language school segment in terms of the number of students. The Herfindahl-Hirschman Index for this segment was 2207.176 (<1000), indicating significant competition. According to the calculations, the core of the online education market includes such language schools as IT Step School LLC, Oxford House LLC, Grade Education Center LLC, and English Prime LLC, which have the largest number of students. The rating of these companies (94, 90, 91, 97, respectively) correlates with their market share, confidently indicating the dominance of these enterprises in the studied segment.

A high inequality in the distribution of students among language online schools is noted, as the Gini coefficient was 0.972216.

It is concluded that depending on the level of destruction, potential losses of educational resources and infrastructure used for storing online learning materials are possible. Research into the educational services market in Ukraine has revealed the following features in the development of education during periods of upheaval:

1. Destruction and damage to the infrastructure of extracurricular educational institutions (Table 3) and a reduction in funding for this sector. In the state budget for 2022, 153.7 billion UAH was allocated for education, but in the 2023 budget, 142.8 billion UAH was allocated—a decrease of 10.9 billion UAH compared to the previous year. However, two new subsidies were introduced: 15 billion UAH for setting up safe conditions in schools and 1 billion UAH for purchasing school buses. Additionally, there was an increase in funding for the National Research and Development Fund, expanding grant support for scientific research and experimental developments. In 2023, 2 billion UAH was allocated, compared to 1.5 billion UAH in 2022 [6].

2. Outflow of students and teachers abroad or internal displacement. Currently, only one in three Ukrainian children lives in their native country, as the rest have

moved to other regions of Ukraine or abroad due to the war. According to the Ministry of Education and Science, 672,000 Ukrainian students are now living in other countries. This research uses the term refugees to encompass not only children whose parents have received official refugee status but also those who have found themselves in foreign countries due to the war. The majority of these children reside in Poland, Germany, the Czech Republic, Moldova, Hungary, Slovakia, and Romania. For example, 200,000 Ukrainian students are currently living in Poland, 75,000 of whom are receiving education in local schools. In total, students, along with their parents, have relocated to 44 European countries, as well as to the USA, Canada, Australia, and Japan. However, there is no precise statistic on the total number of students abroad at the moment [7].

3. Need for rapid modification of educational programs to meet the needs of the wartime and post-war periods, including aspects of safety and psychological support. Sociologists' studies have uncovered the psychological consequences of the war for children: in the past month, 55% of surveyed mothers reported that their children are fearful of loud noises. According to a survey conducted by the Rating Sociological Group among mothers of Ukrainian children aged 3 to 17, mothers noticed signs of irritability and apathy (41%) in their children, and a lack of interest in learning and former hobbies (39%), especially among middle and older school-aged children. Other notable problems include outbursts of anger and aggression (38%), and mothers also reported fear and unexplained crying (35 %) [8].

4. The need for qualified practical psychologists to provide psychological assistance to those affected by military actions or experiencing the stress of displacement. The Ministry of Education and Science of Ukraine, with the support of UNESCO and the Government of Japan, introduced a qualification improvement course for practical psychologists in educational institutions on the topics of mental health and psychosocial support during armed conflict. Training within the program "Strengthening the Capacity of Practical Psychologists in Educational Institutions" began on July 10, 2023, and was conducted in two stages [9].

5. Insufficient coverage of children with special educational needs, a shortage of specialists, and non-compliance of school buildings with accessibility requirements. Compared to the previous year, there has been a decrease in the network of special general secondary education institutions by 20 units, which may affect access to education for children with special needs. For instance, the reduction of educational and rehabilitation centers for children with complex developmental disorders by 77 units could lead to insufficient coverage for this vulnerable category of students, threatening their access to quality education and rehabilitation services [10]. At the same time, the reduction in the number of students by 2,265 people, including a

decrease in the number of orphans and children deprived of parental care, may indicate insufficient attention to socially vulnerable groups in the special education system.

6. Lack of shelters/bomb shelters in certain extracurricular educational institutions complicates the transition to in-person learning. According to the State Budget of Ukraine for 2023, 1.5 billion UAH is allocated for the arrangement of existing and construction of new protective structures. These funds are provided through the budget program "Subvention from the State Budget to Local Budgets for the Arrangement of Safe Conditions in General Secondary Education Institutions" and are used in accordance with the procedure established by the Cabinet of Ministers. Ukrainian educational institutions have shelters covering 67.8% of their needs, and work is actively underway to equip and construct new shelters to ensure the necessary protective conditions [11].

7. The need to update the approach to the system of national-patriotic education and form a new Ukrainian identity based on national and European values. Stakeholders interested in this issue include the Ministry of Education and Science of Ukraine and international organizations, particularly UNESCO, which provides support and funds for the training of qualified personnel in psychology[12].

The Ministry of Education and Science of Ukraine places special emphasis on organizing extracurricular education, viewing it as a key element in ensuring psychological resilience and organized leisure for children and youth outside of school hours [13]. This sector plays a crucial role in developing creative abilities and deepening students' knowledge. In the context of martial law, the Ministry actively supports the work of extracurricular education institutions across all regions of the country, ensuring access to education for children who find themselves in difficult circumstances due to the war.

The majority of educational institutions have been destroyed or damaged, which significantly impedes the educational process in Ukraine (Table 7).

Table 7

Statistics on the Destruction/Damage to Educational Institutions During the War in Ukraine

Region	Total Institutions	Destroyed/Damaged	% Destroyed	Institutions Under Occupation	% Under Occupation
Vinnytsia	756	11	1,4	0	0
Volyn	485	0	0	0	0
Dnipropetrovsk	984	230	23,4	0	0
Donetsk	551	24	4	178	3,2
Zhytomyr	642	0	0	0	0
Zakarpattia	573	0	0	0	0
Zaporizhzhia	511	27	5	256	5
Ivano-Frankivsk	457	58	13	0	0

Kyiv	825	2	0	0	0
Kirovohrad	458	53	12	0	0
Luhansk	260	0	0	203	7,8
Lviv	901	68	8	0	0
Mykolaiv	541	2	0	25	0,46
Odesa	798	4	1	0	0
Poltava	620	0	0	0	0
Rivne	529	12	2	0	0
Sumy	425	1	0	0	0
Ternopil	590	178	30	0	0
Kharkiv	745	24	3	156	2,09
Kherson	468	1	0	367	7,8
Khmelnytskyi	710	6	1	0	0
Cherkasy	624	0	0	0	0
Chernivtsi	388	49	13	0	0
Chernihiv	404	30	7	0	0
Kyiv City	729		0	0	0
SUM	14974	790	-	1185	-

*Source: Compiled by authors by data [14]*

In total, there are 14,974 educational institutions, of which 790 (or 5%) have been destroyed or damaged. The highest rates of destruction are observed in the Dnipropetrovsk region (23.4%), Ivano-Frankivsk region (12.7%), and Kirovohrad region (11.6%). The Luhansk and Donetsk regions have a large number of institutions under occupation (78% and 32%, respectively).

When researching the Ukrainian online education market, it is essential to analyze consumer behavior in this service sector [15]. The main factor shaping the type of behavior in the decision-making process is consumer engagement. According to the author, engagement refers to the level of importance or interest a person feels toward a stimulus (or stimuli) in a specific situation. As the complexity of the purchasing process increases, the level of engagement rises [16].

The decision-making process that involves extended problem-solving indicates a high level of consumer involvement in the selection process. At each stage of this extended process, the consumer interacts with a variety of information and criteria to make an informed decision [17].

The stages of the consumer choice process are as follows:

1. Recognition of the need for education. The consumer realizes their need for self-development and self-assertion through educational courses, which leads to the active consideration of alternatives.

2. Search for a place to study. The consumer, taking into account convenient location, decides to attend English courses in the city center and begins actively searching for available options.

3. Evaluation of alternatives. At this stage, the consumer sets a large number of criteria, such as the quality of education, location, and cost, and conducts a thorough



evaluation of various schools. After rejecting unsuitable options, they choose the optimal one that meets their needs [18].

This extended problem-solving process reflects the importance of each step in making thoughtful decisions, relying on detailed searches and discussions of various aspects that determine the optimal educational path.

Types of reference groups that influence consumers can be divided into two categories: primary and informal reference groups. Primary reference groups include friends and family, and may also encompass informal groups such as colleagues. These groups interact with the consumer by providing informational influence in the form of recommendations based on personal experience or knowledge. In the case of informal groups, identification influence may occur, where the consumer makes decisions aimed at maintaining connection with the group. For example, when choosing an English language course at the same place where their colleagues attend, the consumer creates an opportunity to travel together and avoid alienation from the group [19; 20].

An important aspect is the analysis of demand in the online education sector. Considering the demand for e-learning, taking into account the consumer categories, the author identifies three main sectors that utilize online education:

1. Academic sector: Includes preschool and school preparation for children, higher education, and professional training. This sector involves students and their parents, who initiate funding and the acquisition of specific competencies.

2. Corporate sector: Uses online education to train its personnel. Small and medium-sized companies demand ready-made online courses, while large enterprises may invest in developing specialized courses or programs for their staff.

3. Public sector: Includes government organizations and institutions that use e-learning technologies for training and improving the qualifications of civil servants [21].

During periods of turmoil, over half of all online educational services are provided to the academic sector, significantly contributing to the education of schoolchildren and students. However, there is increasing interest from businesses in training their staff, indicating the growing role of the corporate sector in online education. In recent years, corporate service revenue has increased by 7.5%, reaching 59.3557 million USD in 2017 [22].

Statistical data from Preply shows that the most popular area of online education in the Ukrainian market is distance language learning, with particular interest in interactions with native speakers, which accounts for 43%. In second place is preparation for school programs and exams with a 21% share, and third place is occupied by professional training courses with a 12% share. There is also notable demand for programs in healthcare, business, and computer science. Regarding paid online courses in Ukraine, their number has increased significantly, yet the cost of

education remains lower than in traditional educational institutions. Private distance schools set tuition fees ranging from 750 to 3000 UAH per month, while online courses are available for as little as 240 UAH per course [23]. When determining the price of educational services, factors such as the number of lessons, the prestige level, the elite status of the educational institution, the country, and the success rate of completing the course are considered.

It has been noted that in the online education market, the phenomenon of "passive income" has gained popularity, where content developers and owners generate profits without direct involvement in the production process. When evaluating this phenomenon, it is important to consider not only the price but also the quality of the content, as well as the credibility of the author or the educational platform, which become crucial factors in determining demand and the duration of consumption of online educational services [24].

It has been established that in the modern world, where technologies are rapidly developing, online education is becoming a key component of the educational process, especially during times of turmoil. The research, which focuses on the formation and development of online education in Ukraine under external challenges, reveals a number of important trends and challenges that shape this sector [25; 26].

The research identified positive trends, particularly the increased accessibility of education for different population groups and regions. Online education in Ukraine has proven to be an effective tool for overcoming geographical limitations and inequalities in access to education during times of disruption [27]. The main challenges and, at the same time, drivers of online education development in Ukraine have been the COVID-19 pandemic and the war. The operation of online schools during periods of upheaval has provided an impetus for the development of this sector, ensuring the safety of both students and teachers [28].

The active use of modern technologies in the educational process should also be highlighted. Interactive platforms, virtual lectures, and other innovative methods are becoming an integral part of the educational environment [29]. This not only helps improve material retention but also creates an engaging and exciting space for students. However, along with these achievements, the research points to a number of challenges facing online education in Ukraine. The need to improve the quality of the teaching process and ensure a high level of interactivity are pressing issues. Additionally, it is important to consider cybersecurity and data privacy concerns to ensure safe learning in the online environment [30].

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**Section 3.**  
**SOCIAL RESPONSIBILITY OF NATIONAL**  
**AND INTERNATIONAL BUSINESS:**  
**TOWARDS CHANGING THE MARKET PARADIGM**

# **THE ROLE OF CORPORATE SOCIAL RESPONSIBILITY IN THE DEVELOPMENT OF MARKETING STRATEGIES FOR NON-PROFIT ORGANIZATIONS**

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In the modern market economy, especially amid the military conflict in Ukraine, the issue of corporate social responsibility (CSR) has gained significant importance. Companies are not only focused on profit-making but also actively engaging in addressing humanitarian and ethical societal issues, including assisting war victims and supporting the Armed Forces of Ukraine. This approach opens up new opportunities for collaboration with non-profit organizations providing humanitarian aid, supporting displaced persons, and working on restoring critical infrastructure.

The war in Ukraine has heightened the need for close cooperation between businesses and non-profit organizations. Corporate social responsibility (CSR) drives the development of marketing strategies for these organizations, aimed at attracting partners, donors, and volunteers, as well as enhancing public trust in their activities. Supporting the military, aiding affected communities, and contributing to the country's recovery have become integral parts of socially responsible companies' efforts, strengthening their image both nationally and internationally. This collaboration enables both businesses and non-profit organizations to more effectively achieve their goals, particularly in the areas of security, humanitarian aid, and social support during wartime. Furthermore, CSR can be integrated into the marketing strategies of non-profits through the concept of socially responsible marketing, which involves applying commercial strategies to address social problems.

Corporate social responsibility not only enhances a company's competitiveness but also contributes to the development of non-profit organizations by creating new opportunities for collaboration. In the context of the war in Ukraine, this interaction becomes especially relevant, as it enables more effective responses to current challenges and ensures support for those who need it most. It opens new horizons for both sectors in achieving shared goals in the areas of security, humanitarian aid, and social support.

Corporate social responsibility (CSR) encompasses a wide range of practices that include ethical, environmental, and social aspects of a company's operations. According to the definition proposed by Carroll Archie B., CSR consists of four components: economic, legal, ethical, and philanthropic responsibilities [1]. This model highlights the importance of integrating social goals into business strategy. Porter and Kramer emphasize the concept of "shared value," which involves creating economic value through social initiatives [2]. Romaniuk M. D. and Romaniuk T. M. note that in Ukraine, CSR has both societal and corporate dimensions, underscoring the importance of integrating social initiatives into business strategies [3]. Medynska T. stresses that CSR is becoming increasingly relevant in the context of globalization and examines the specific challenges and opportunities for its implementation in Ukraine [4].

Corporate social responsibility (CSR) directly influences companies' marketing strategies. According to research by Sen and Bhattacharya, consumers evaluate companies based on their social responsibility, which leads to shifts in consumer preferences [5]. This creates opportunities for non-profit organizations (NPOs) to collaborate with businesses on joint projects. A key aspect is the concept of "social marketing," which involves applying marketing principles to solve social problems (Kotler & Lee) [6]. NPOs can use these principles to shape their strategies and attract support from businesses.

Research shows that collaboration between businesses and non-profit organizations (NPOs) can be beneficial for both parties. For instance, Austin notes that strategic partnerships can provide non-profit organizations with access to resources and expertise, while businesses have the opportunity to enhance their image and attract new customers [7]. Furthermore, an analysis of the current state of corporate social responsibility, the challenges companies face, and the opportunities for developing this practice in the Ukrainian business environment highlights the importance of long-term relationships between businesses and non-profit organizations to achieve sustainable results [8]. Another study indicates that active business participation in socially responsible initiatives can significantly impact the development of non-profit organizations in Ukraine [9]. This is especially relevant in the context of the war in Ukraine, where the need for humanitarian aid and infrastructure recovery is critically important.

Despite the many advantages of collaboration between businesses and non-profit organizations, there are also certain challenges. For example, a lack of consumer awareness about social initiatives can limit the effectiveness of non-profit organizations marketing strategies [10]. Economic instability, imperfect legislation, cultural and social barriers, the absence of a strategic approach, and competition for resources [8] are additional hurdles. These challenges require attention from both



businesses and non-profit organizations to ensure effective collaboration and maximize social impact.

However, the growing focus on social responsibility in the context of globalization and crisis situations opens up new opportunities for developing partnerships between these sectors. The rise of socially responsible initiatives not only strengthens businesses but also supports the development of non-profit organizations, especially during periods of economic instability and geopolitical challenges. This can also help both parties better respond to societal needs and become more resilient to crises. Research confirms that active participation in social projects can positively impact companies' reputations and their competitiveness.

The research methodology combines a qualitative approach with various data collection and analysis methods, allowing for an in-depth exploration of the impact of corporate social responsibility (CSR) on the development of marketing strategies for both non-profit organizations and commercial companies within the Ukrainian context. The study is based on a comprehensive approach to studying CSR, which includes theoretical literature analysis, practical case studies, and an examination of real initiatives by Ukrainian companies and non-profit organizations, alongside expert evaluations. The combination of these methods has led to conclusions regarding the current state and development prospects of CSR in Ukraine, as well as the identification of effective strategies for integrating social responsibility into marketing strategies for both non-profit organizations and businesses.

The issue of consumer trust in businesses and non-profit organizations (NPOs) is becoming increasingly important in the face of global challenges such as war, economic instability, and social crises. Collaboration between businesses and NPOs has the potential to significantly strengthen trust in both parties, which, as contemporary research indicates, is a crucial component of successful socially responsible initiatives. One of the key aspects emphasized in academic literature is the role of transparency and accountability.

Transparency in partnerships between businesses and non-profit organizations (NPOs) involves open access to information regarding joint projects, their objectives, implementation stages, resource usage, and achieved outcomes. Appropriate reporting that publicly reflects these aspects contributes to increasing trust among consumers and the wider community. Notable research in the field of social responsibility marketing indicates that consumers prefer companies that demonstrate openness and clearly report on their social and environmental initiatives. Companies that maintain a transparent policy regarding their corporate social responsibility (CSR) enjoy a higher level of trust from consumers and the public, as well as increased customer loyalty. Several Ukrainian companies actively engage in social responsibility and transparency in their operations. For example, Kyivstar PJSC provides detailed descriptions of social

projects, focusing on achieved results and resource expenditures, which enhances consumer trust. Another company, “NEW POST” Limited Liability Company, also shares open information about its charitable activities, particularly during the ongoing war in Ukraine, demonstrating its social responsibility to the community. PrivatBank JSC, on the other hand, implements financial literacy programs, which are also reflected in its reports, helping consumers assess its contributions to societal development. Thus, transparency and accountability in social initiatives become crucial factors in strengthening trust between businesses and the public.

NPOs also benefit from such transparency, as it helps them attract more financial and institutional support. When consumers see that businesses not only fund social projects but also actively participate in their implementation alongside NPOs, it fosters a sense of shared responsibility and contributes to the establishment of long-term trust. A concrete example of such interaction is the campaigns launched by NPOs to address social issues like poverty, healthcare, and support for the Armed Forces of Ukraine. The Human Fund actively implements campaigns aimed at assisting those affected by military actions in Ukraine. As part of its initiatives, the fund collects donations for humanitarian aid, including food, medicines, and hygiene products for people left homeless due to the war. They also organize the delivery of humanitarian supplies to vulnerable populations, including women, children, and people with disabilities. The Human Fund collaborates with various businesses that provide financial or resource support for their campaigns [11].

However, transparency alone is not sufficient for building trust. Equally important is the alignment between the statements of businesses and NPOs and their actual actions. Social marketing becomes effective only when the organizations' social initiatives are not perceived as mere formalities but have a real impact on society [6]. Consequently, consumers increasingly evaluate the initiatives of businesses and NPOs based on their effectiveness rather than just declarations of goodwill. If businesses and NPOs can demonstrate tangible results—from infrastructure reconstruction to assistance for military personnel or affected communities – this significantly enhances their level of trust among the public. Long-term partnerships between businesses and non-profit organizations lead to a substantial improvement in the image of both parties. Such collaborations enable the adaptation of strategies to new challenges and opportunities, which is especially important in a rapidly changing social environment. New Post actively collaborates with the Red Cross of Ukraine within the framework of the "Humanitarian Post of Ukraine" project. This project provides free delivery of humanitarian supplies to affected regions and areas of military conflict in Ukraine. New Post offers its services free of charge for humanitarian shipments, allowing the Red Cross to effectively implement its initiatives. This joint effort mobilizes a greater number of resources for assisting those in need, including food, medicines, and other

essential items. This initiative enhances the reputation of both organizations and demonstrates their social responsibility.

Another important aspect is that trust cannot be built instantly—it is the result of ongoing, long-term interaction between businesses, NPOs, and the public. Research shows that successful strategic partnerships between businesses and non-profit organizations require planning and long-term communication with all stakeholders [7]. In such conditions, transparency and accountability are not just a requirement of the times, but important tools for building mutual trust, strengthening the connection between businesses, NPOs, and consumers.

Thus, transparency and accountability in the collaboration between businesses and NPOs are essential for building trust and loyalty among consumers. These factors not only enhance the image of the organizations but also make them more resilient to criticism, helping them create real social value.

Collaboration between businesses and non-profit organizations can be highly productive; however, there are challenges that can complicate this interaction. Moreover, economic instability and political risks in Ukraine hinder the implementation of social projects. Changing business conditions affect the funding of NPOs, which in turn impacts their ability to carry out programs that are important for society. The main challenges of collaboration between businesses and non-profit organizations are presented in Table 1.

Table 1

The main existing challenges of collaboration between businesses and non-profit organizations

Challenges	Description	Examples	Possible Solutions
Lack of Consumer Awareness	Many consumers are unaware of the social initiatives implemented by companies in partnership with NPOs. This leads to distrust, as people may perceive social efforts as marketing tricks.	The "Help Ukraine" campaign. In 2022, the company raised funds to support those affected by the war, but consumers expressed doubts about its effectiveness due to insufficient information on how the collected funds were used.	Conducting information campaigns that detail social initiatives, their results, and their impact on the community. Utilizing social media and media to disseminate information.
Economic Instability	The economic situation in Ukraine remains challenging due to the war and political risks. This leads to reduced funding for many NPOs that relied on corporate donors.	The "Red Cross of Ukraine" faced funding cuts, which hindered its ability to implement assistance programs.	Creating funds to support NPOs, as well as seeking alternative funding sources such as grants and crowdfunding.

Political Risks	Political instability complicates the implementation of social projects. Changes in legislation or regulatory requirements can affect NPOs' ability to obtain additional funding.	Changes in tax policy or regulatory restrictions complicate international transactions and funding acquisition.	Establishing partnerships with law firms to monitor changes in legislation, as well as actively lobbying at the state level to support legislative initiatives that promote social projects.
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*Created by the author*

As we can see, collaboration between businesses and NPOs has the potential to create significant social impact, but it faces serious challenges. To effectively overcome the challenges posed to collaboration between businesses and NPOs, it is important to focus on several key aspects that can significantly contribute to strengthening consumer trust. These aspects should be implemented in the context of the aforementioned issues, such as insufficient awareness, economic instability, and political risks. Each of the mentioned elements of interaction is crucial for enhancing the effectiveness of social initiatives and ensuring the sustainable development of collaboration.

Ensuring transparency is a fundamental element for building trust. Transparency means not only the availability of information but also its accessibility and clarity. Companies and NPOs should regularly publish reports on the projects they have implemented and their outcomes, using language that is understandable to the general public. This will allow consumers to better understand how their funds are being used and what results are being achieved. Publishing annual reports on social initiatives, clearly outlining how much money was spent, what results were achieved, and what actions are planned for the future, will help establish trust in the organization, as consumers can see that their participation has a real impact on society.

Communication with the public is also a key aspect that influences the level of trust in social initiatives. Using social media and other communication channels to inform the public about the goals, implementation stages, and results of projects is important for creating a positive image. Social media provides an opportunity not only to disseminate information but also to quickly respond to consumer questions and comments, fostering open dialogue and trust. Additionally, communication can include hosting webinars, seminars, and live events, where businesses and NPOs can interact directly with the public, discuss projects, and receive feedback.

Training and knowledge exchange are crucial for improving the effectiveness of social initiatives. NPOs need to organize training sessions for businesses on social responsibility, providing valuable insights into community needs and ways to address

them, including educational programs on environmental responsibility, sustainable development, and corporate social responsibility. At the same time, businesses can share their expertise in marketing and communications, helping NPOs more effectively convey information about their projects to target audiences. Joint training sessions can serve as a platform for exchanging ideas and best practices, enhancing the overall effectiveness of collaboration.

Lastly, but no less important, is the development of joint strategies. Creating collaborative strategies that consider the needs of both parties will significantly enhance the impact of social initiatives, including the establishment of joint funds for project implementation or coordination of efforts within specific initiatives. For instance, a business and an NPO might co-develop a program aimed at improving the environmental situation in a region, which would involve both financial support and participation in volunteer activities. Such programs can engage company employees in social projects, boosting their morale and contributing to a positive image for the business.

Moreover, effective communication of the results of joint initiatives is crucial. This involves not only reporting on expenses and outcomes but also actively informing consumers about the impact these initiatives have had on the community. After completing a social project, businesses and NPOs should hold press conferences or release informational brochures that highlight the results achieved and their significance for the community. This will help strengthen trust and demonstrate that companies are genuinely committed to improving living conditions in society.

Thus, the proper implementation of these aspects will contribute to strengthening consumer trust in both parties. In turn, this will lead to the successful execution of socially responsible initiatives, improvement of the image of companies and NPOs, and increased consumer involvement in social projects. Overall, enhancing collaboration between businesses and NPOs can become a key factor in creating sustainable social change within society. Implementing these strategies will not only overcome existing challenges but also lay the groundwork for long-term and productive partnerships, benefiting both businesses and society as a whole.

To support the presented ideas and provide a deeper analysis of the effectiveness of collaboration between businesses and NPOs, it would be appropriate to use economic-mathematical models and formulas. The application of such tools would allow for the evaluation of not only the qualitative aspects of social projects but also the quantitative indicators of their impact on a company's financial results, customer satisfaction, and economic stability. These calculations would enable a more detailed analysis of the costs, benefits, and overall effectiveness of social initiatives by employing economic metrics such as Social Return on Investment (SROI), cost-benefit analysis (CBA), regression analysis, and the social cost multiplier.

Moving on to mathematical calculations, let's consider the key formulas that will enable a detailed analysis of effectiveness and lead to well-founded conclusions. When discussing transparency and communicating the results of social projects, calculating the Social Return on Investment (SROI) becomes an ideal tool for enhancing public trust. Both companies and NPOs can regularly report on SROI metrics, demonstrating how much social value is generated for each hryvnia invested. This will allow them to visually show consumers that the initiatives bring real benefits rather than being mere marketing gimmicks.

$$SROI = \frac{\text{Total social benefit}}{\text{Total project costs}}, \quad (1)$$

The SROI method is a powerful tool for evaluating the effectiveness of social investments. It not only allows for measuring the financial impact of projects but also helps to understand their real contribution to improving people's lives. However, for the successful application of this method, it is essential to ensure data quality and take into account external factors that may affect the results.

Modeling the relationship between costs and benefits (Cost-Benefit Analysis, CBA) is an important tool for evaluating the effectiveness of social initiatives. This method helps compare the costs of implementing social initiatives with the direct and indirect benefits they bring to both businesses and NPOs. As a result, it is possible to obtain a measure of net profit or loss for each party.

$$\text{Net result} = \text{Total benefits} - \text{Total costs}, \quad (2)$$

Despite the challenges in assessing indirect benefits and the need for quality data, CBA remains an important method for ensuring the sustainable development of social programs and improving their effectiveness. Establishing effective communication through social media and other channels allows companies to showcase the results of cost-benefit analysis. By using CBA, a company can explain that despite the costs of social projects, they bring long-term benefits to both the business and society. Explaining these results to the public will strengthen trust in the company and help create a positive image.

Regression analysis for assessing the impact of collaboration on reputation and financial performance. Economic and mathematical methods, such as regression analysis, can be applied to evaluate the relationship between investments in social projects and changes in a company's financial performance, such as sales growth, improved image, or increased customer loyalty. With regression analysis, it is possible to assess how expenditures on social initiatives (independent variable) affect changes in the company's revenue or net profit (dependent variable). The regression equation is presented below.

$$Y = a + bX + \varepsilon, \quad (3),$$

Y - company's revenue indicator,

a - constant,

X - expenditures on social initiatives,

b - coefficient of the impact of expenditures on social initiatives,

$\varepsilon$  - error term.

In conditions of economic instability, it is important to assess how social investments impact a company's financial performance. Regression analysis allows businesses to model the effect of expenditures on social initiatives on future revenues. Such models help understand how efficiently a company is spending funds and how social investments can be safeguarded against economic risks.

Evaluation of the social expenditure multiplier. This approach allows assessing how investments in social projects impact the overall economy. The multiplier helps determine by how many units aggregate demand in the economy will increase as a result of expenditures on a social project.

$$\text{Multiplier} = \frac{1}{1-\text{MPC}}, \quad (4),$$

MPC (Marginal Propensity to Consume) — the marginal propensity to consume. The more funds recipients spend on goods and services, the stronger the effect of the investments will be.

In the case of political instability, the social expenditure multiplier allows for an assessment of how investments in social projects can impact the overall economic situation in the country. The funds invested can contribute to increased consumer demand, job creation, or the reduction of expenses on government programs.

Calculation of the Customer Satisfaction Index (CSI). To assess the impact of social initiatives on customer loyalty and satisfaction, the Customer Satisfaction Index (CSI) can be used. It allows measuring how the perception of the company and its products changes after the implementation of social initiatives.

$$\frac{\Sigma(\text{consumer ratings})}{\text{maximum rating} \times \text{number of consumers}} \times 100, \quad (5)$$

One of the components of training and knowledge exchange between NPOs and businesses can be the assessment of the impact of social projects on customer satisfaction (CSI). If training businesses in social responsibility includes tools for improving service and customer interaction, the company will be able to increase its CSI, which will directly affect its revenues and image.

The development of joint strategies based on economic calculations will help businesses and NPOs better understand which initiatives are the most effective in the long term. Incorporating economic and mathematical models (such as revenue forecasts, costs, and multipliers) into strategic plans will make collaboration more sustainable and effective. In addition, the use of economic and mathematical models can help reveal hidden opportunities for investment and optimization of resources. For

example, data analysis can point to non-obvious connections between different initiatives and their impact on the community, opening new avenues for collaboration. Involving experts from different fields to develop and validate these models also facilitates the sharing of knowledge and practices, which in turn improves the overall quality of solutions. This not only strengthens the trust between business and NPOs, but also forms the basis for more innovative and sustainable strategies that can adapt to changes in market conditions.

A detailed analysis of the role and significance of corporate social responsibility in the marketing strategies of non-profit organizations and commercial companies, with particular attention to aspects related to the realities of Ukraine, especially in the context of war and economic instability, reveals that the military conflict in Ukraine has opened new challenges and opportunities for interaction between businesses and non-profit organizations. It shows that social responsibility can not only enhance a company's image but also help address pressing social issues. The use of socially responsible marketing is an effective tool that enables businesses to remain competitive while strengthening consumer and partner trust. Consumers are increasingly attentive to the social activities of companies and are willing to support brands that are actively engaged in social initiatives, openly report their actions, and demonstrate real results. Transparency and regular reporting are essential components of a successful social responsibility strategy. They help build consumer trust and establish long-term relationships with both clients and partners, which is crucial for companies in times of crisis. The experience of Ukrainian companies demonstrates that strategic partnerships with non-profit organizations not only assist in addressing humanitarian issues but also enhance consumer loyalty to the brand. The joint activities of businesses and non-profit organizations hold significant potential. These partnerships can substantially help overcome the social and economic challenges faced by the country. A social responsibility strategy is not only a tool for solving social problems but also an effective mechanism for strengthening a business's position in times of crisis and instability.

Researching the challenges associated with implementing corporate social responsibility in the difficult conditions of war in Ukraine makes it particularly relevant, as Ukrainian companies and non-profit organizations operate in extremely unstable circumstances that require flexible and unconventional approaches to marketing. It deepens the understanding of how the business and non-profit sectors can collaborate to achieve common goals, using the concept of socially responsible marketing as a tool to support society and strengthen public trust. New approaches to evaluating transparency and accountability as key elements of corporate social responsibility can be used to overcome consumer skepticism and enhance the effectiveness of business communication strategies. Companies can gain a significant



competitive advantage by investing in the openness of their social projects and reporting their achievements not only to shareholders but also to a wider audience. This research has important practical implications for both Ukrainian companies and non-profit organizations seeking to make a positive impact on society while simultaneously strengthening their positions in an unstable economic environment.

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# **INCREASING THE COMPETITIVENESS OF ORGANIC PRODUCERS BASED ON PRINCIPLES OF SOCIAL RESPONSIBILITY**

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In today's world, the importance of sustainable development is increasingly recognized, leading to significant changes in humanity's worldview, its perception of society, the economy, and our everyday lives. There is an emphasis on the role of each individual as a unique person, with conscious existence, responsibility for one's life, and peaceful coexistence within society. As a result, actively adhering to the principles of social responsibility has become an urgent requirement for business owners and entrepreneurs. In doing so, they shape not only their business practices but also relationships with a broad range of stakeholders – suppliers, intermediaries, consumers, and competitors – as well as with the surrounding natural environment. Thus, social responsibility has become a vital aspect of modern entrepreneurship, guiding the process of ethical decision-making and promoting a harmonious balance between economic growth and environmental protection.

The production of organic products fully aligns with the new model of the economy and the world. Agricultural enterprises and organic producers strive to conduct business with integrity, complying with legal standards, meeting consumer needs, and acting responsibly toward the environment.

An alternative management model can enable organic agricultural producers to enhance operational efficiency, provide consumers with high-quality, safe agricultural products, and offer society reduced anthropogenic pressure on the environment and natural resources, as well as their preservation.

Organic farming employs resource-saving technologies, minimizes mechanical soil cultivation, rejects synthetic substances, and utilizes materials and methods that ensure the ecological balance of natural and agro-ecological systems. Proper labeling of organic agricultural products enhances their market recognition, boosts demand, and increases competitiveness.

High-quality organic products are gaining more and more supporters despite their relatively high price, providing agricultural producers with increased competitiveness both in domestic and international markets.

The growing demand for organic agricultural products and the need for business structures to adhere to principles of social responsibility call for a justified new concept of development and regulation in organic agricultural production based on social responsibility principles, aimed at enhancing the competitiveness of agricultural producers.

The formation of new concepts is always based on previous scientific research and the results obtained through practical implementation. The essence and aspects of organic product production were studied in the past by T.O. Chaika [1], V.H. Hranovska [2], Y.V. Nehoda, M.M. Huz [3], O.I. Shkuratov, V.A. Chudovska, A.V. Vdovichenko [4], and others.

The theoretical foundations of business social responsibility have been researched by A.M. Kolosok [5], O.E. Kuzmin, N.S. Stanasiuk, O.Z. Uholkova [6], O.F. Novikova, M.Ye. Deich, O.V. Pankova [7], O.B. Shuminska [8].

The issues of forming the concept of organization and management of the development of organic agricultural enterprises based on social responsibility principles have been studied in the works of N.P. Novak [9], N.I. Stepanenko and I.M. Volkova [10], M.M. Ihnatenko [11]. The adherence to business social responsibility principles by organic agricultural producers has been addressed in the works of T.I. Lunkina [12]. The state and prospects of the organic product market development in the context of business social responsibility have been examined by L.S. Zakharkina, V.M. Novikov [13], T. A. Kundilovska, N. M. Zelenyanska, V. G. Zakharchuk [14], Ya.M. Lahuta and N.V. Mykhailenko [15], K.O. Prokopenko and L.O. Udova [16], O.P. Khaietska [17].

The essence and methods of enhancing the competitiveness of organic agricultural producers have been studied by M.S. Kotsenko [18], L.P. Kulis [19], Yu.P. Kalyuzhna, L.M. Koshova, I.O. Yasnolob [20], O.Yu. Niskhodovska [21], L.D. Pavlovska [22], V.V. Zhurylo [23], and others.

Despite numerous contributions in these specific areas, there remains a need to study the mechanism for ensuring high competitiveness in the market for organic agricultural producers based on social responsibility principles.

In the course of the research, general scientific and empirical methods were employed: induction and deduction, comparison and systematization – to clarify the essence of basic terms; analysis and synthesis – to define and characterize types of social responsibility; the historical method – to establish the origins and development of organic production; statistical observation – to collect information on the state and development of organic agriproduction; trend analysis – to study changes in key indicators over time; graphical and tabular methods – to visually present the results obtained in the research process; and the abstract-logical method – for theoretical generalizations and the formulation of conclusions.

At the end of the 20th century, an important new idea emerged in business – "corporate social responsibility." While scholars and practitioners still lack a single, clear definition, the core of this idea lies in developing a socially responsible approach to business, particularly in the behavior of leaders and decision-making. Corporate social responsibility emphasizes the importance of how company leaders should treat all people and organizations connected to their activities. It is not just about honesty and ethics, but also about commitment and care for the employees who work daily toward the success of the organization. Leaders must care for their rights, working conditions, and development, as they are the foundation for achieving the company's goals. Moreover, corporate social responsibility calls for honest and transparent relations with competitors and intermediaries. It also extends beyond these traditional stakeholders to include consumers, whose trust and loyalty are integral to the longevity of the business, and the natural environment that sustains all human and economic activity. This broad focus highlights the idea that today, businesses are expected to act not only for profit but also with a sense of responsibility for the welfare of society and the preservation of nature.

L.S. Zakharkina and V.M. Novikov, based on their research on the essence of "social responsibility," suggest considering it as "a set of voluntarily accepted principles of openness, transparency, balance, effectiveness, and adequacy that are mostly adhered to by large companies in the process of making business management decisions. The decisions made have an impact on the quality of organizational management, environmental protection, the observance of employees' rights, and the interests of the surrounding social masses, which compels businesses to maintain transparent and ethical behavior. Socially oriented businesses understand the consequences of their destabilizing activities and therefore transition to more environmentally friendly means of production, becoming more socially focused towards both their subordinates and clients, as well as the surrounding people. It is worth noting that not all enterprises can afford to implement social programs and initiatives. For example, for small businesses, this can be costly, while large corporations have sufficient resources to cover such expenses" [13, p. 290].

Investing additional resources in organic production is justified by numerous positive outcomes across economic, social, and environmental aspects. From an economic perspective, such investments lead to increased sales volumes and enhanced overall profitability, strengthening companies' market positions and boosting their competitiveness. Socially, a commitment to organic production enhances the reputation of businesses, positioning them as responsible and forward-looking, thus attracting a broader consumer base. Consumer loyalty not only supports business growth but also promotes clients' physical health and well-being by offering healthier and more natural products. From an environmental standpoint, expanding the organic

sector helps protect and conserve natural resources by encouraging waste-free and resource-saving production technologies without harmful substances or materials, aligning with global efforts to mitigate environmental degradation. Thus, the positive impact of additional investments in organic production extends beyond immediate business gains, contributing to long-term benefits for both society and the planet as a whole.

N.I. Stepanenko and I.M. Volkova identify the essential elements of business social responsibility: "openness of information regarding the company, its products, advertising messages, resources, the environment, human resources potential, and so on" [10].

O.Ye. Kuzmin, N.S. Stanasiuk, and O.Z. Uholkova, while studying various approaches to the classification of social responsibility, identify the following types (Fig. 1): ethical, environmental, economic, and philanthropic [6, p. 58].

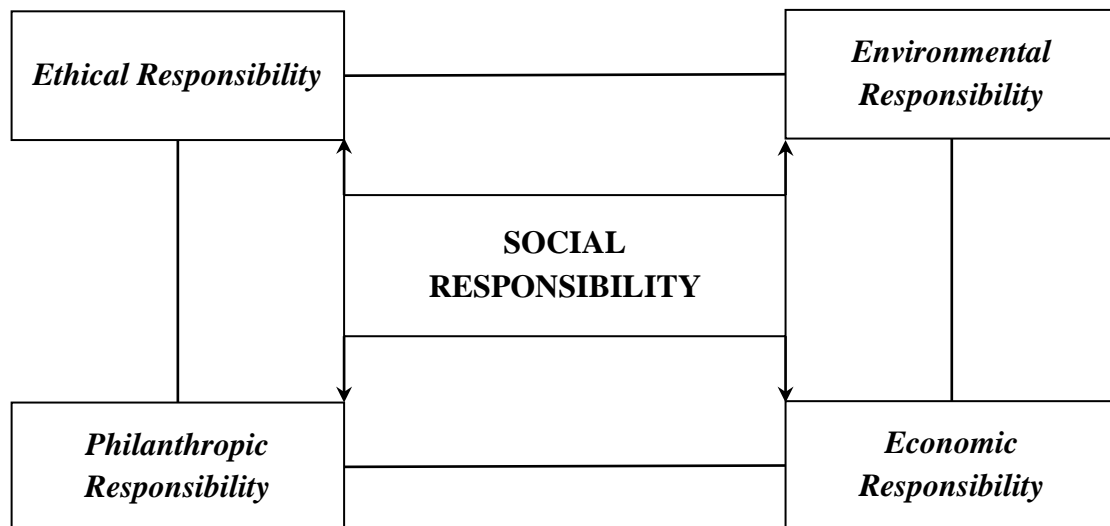


Fig. 1. Types of Business Social Responsibility\*

\*Constructed based on the source [21, p. 58]

Ethical responsibility of business structures requires them to show care towards their employees and the staff of their partners regarding equal treatment of employees based on gender, race, religion, etc., equality in remuneration for the same work in terms of volume and professionalism, and respectful treatment of employees, partners, and clients.

Perhaps, organic farming, specializing in the production of organic products, best aligns with the principles of environmental responsibility as a type of social responsibility. Environmental responsibility implies adherence to maximum permissible concentrations of harmful substances in emissions, discharges, and waste,

as well as a transition to technologies, substances, and materials that are safe for the natural environment.

Depending on the size and industry of the business, environmental responsibility can take various forms. For some companies, this means using alternative energy sources and environmentally friendly materials; for others, it involves implementing company-wide recycling programs or donations and volunteering for local environmentally oriented organizations [6, p. 59].

Companies that have established themselves in the market as caring for the natural environment and preserving life on the planet have improved their image and increased their competitiveness, as consumers increasingly prefer such businesses.

Serving humanity reflects a company's philanthropic responsibility. Adhering to this principle, businesses engage in charitable activities, donate to charitable organizations to support disadvantaged communities, help in disaster relief efforts, provide clean drinking water to those in need in remote areas, and more.

Economic responsibility is an interconnected sphere focused on achieving a balance between business, ecology, and philanthropy. Economic responsibility adheres to established ethical and moral norms. In this context, companies strive to find solutions that can facilitate their business and ensure profitability while benefiting the community and our society. When a business operates with economic responsibility in mind, it makes financial decisions prioritizing the common good rather than merely profit-making [6, p. 60].

Considering those above, it is important to note that all types of social responsibility are interconnected. When making production and business decisions, company leaders also care about the well-being and appropriate working conditions, their employees' compensation, environmental preservation, and helping those in need. When choosing between several alternative ways of operating, applying technologies, and using various materials and raw materials, companies, adhering to the principles of social responsibility, will select the option that meets the specified requirements.

Agricultural producers of organic products operate on the principles of social responsibility, enhancing their image among consumers and increasing their competitiveness in the market (Fig. 2).

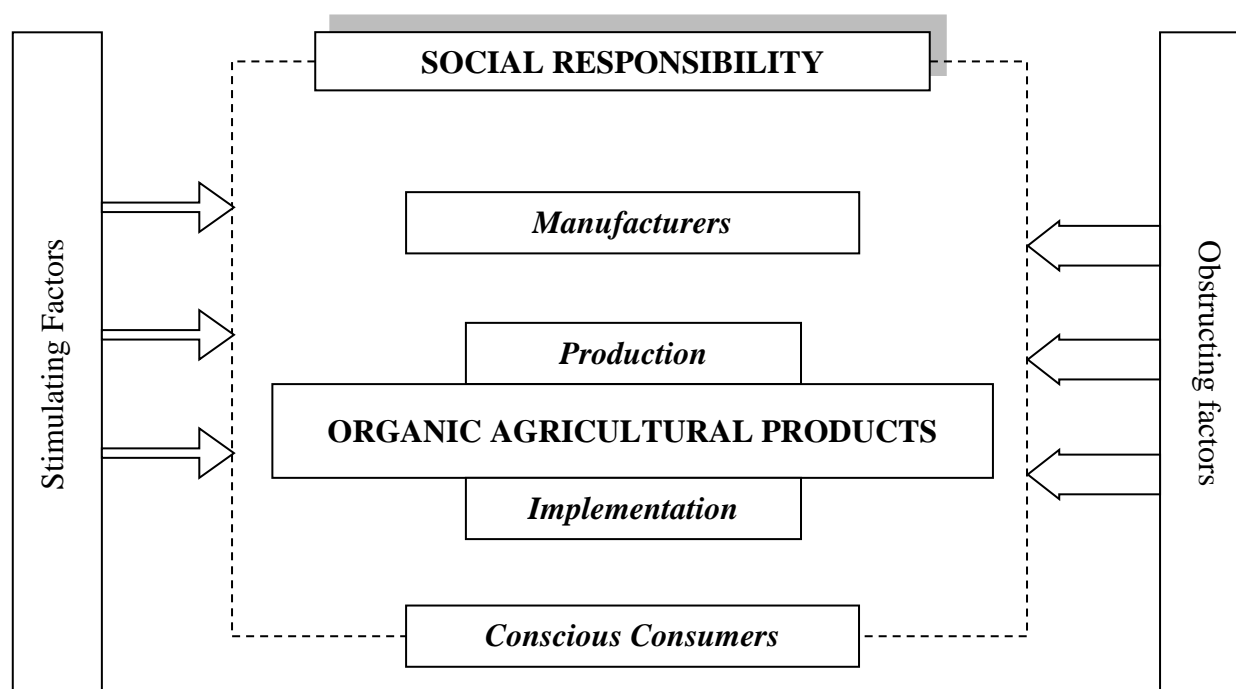


Fig. 2. The Market for Organic Agricultural Products Based on the Principles of Social Responsibility

*\*Constructed by the authors*

The introduction of organic cultivation methods began in 1976 when S.S. Antonez initiated the use of surface soil treatment, abandoning the use of mineral fertilizers, herbicides, and other chemical plant protection products on his farm in the Poltava region. As a result, the enterprise "Agroecology" served as an example for demonstrating environmentally friendly activities in Ukraine in the following years [24]. This set a precedent for other agricultural producers and spurred the rapid development of organic agricultural production in Europe and Ukraine, starting from the last decade of the 20th century.

The idea of organic farming is based on a complete rejection of genetically modified organisms (GMOs), antibiotics, pesticides, and mineral fertilizers. In addition to benefits for consumer health, such production contributes to enhancing the natural biological activity in the soil and restoring the balance of nutrients [25, p. 39]. The regenerative properties are strengthened, the functioning of living organisms is normalized, and there is an increase in humus, resulting in higher crop yields. The outcome of organic production is ecologically safe products. Organic farming is now being implemented in more than 150 countries around the world, with over 37 million hectares of agricultural land dedicated to it globally [26, p. 319].

The potential for the development of organic agricultural enterprises in Ukraine is considered immense, including: 8 million hectares of ecologically clean land; a low level of pesticide and chemical fertilizer usage; availability of labor resources in the



agricultural sector; strong traditions of agricultural production in harmony with nature; and the export attractiveness of organic products for EU countries and the domestic agricultural market [11, p. 8].

According to official data from the State Statistics Service of Ukraine [27], the domestic organic product market is rapidly developing despite a number of unfavorable conditions and threats. In particular, during the period from 2014 to 2023, the areas used for organic production increased by 17.6%, while the number of organic agricultural producers grew by 2.6 times (Fig. 3).

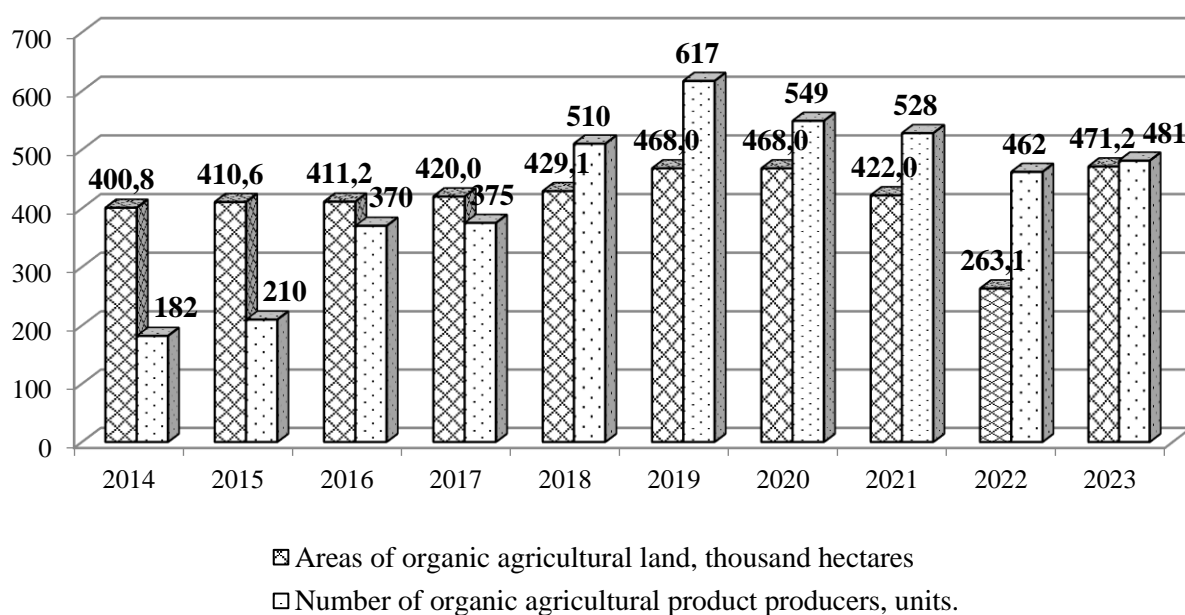


Fig. 3. Development of Organic Agriculture in Ukraine, 2014-2023.\*

\*Constructed based on data from source [27]

Ukrainian organic products are of high quality and competitive, which is why they are in demand both in Ukraine and on global markets. Interest in them continues to grow. From 2015 to 2023, the export of domestic organic products increased every year, reaching its peak in 2021. Overall, during the analyzed period, the volume of organic product exports grew by 2.9 times. The chain growth rates indicate annual increases in organic product exports up to 2018, after which the growth was not as significant, and in 2022-2023, organic product exports began to decline, which is not surprising for a country in a state of war (Fig. 4).

Consumers who strive to live more consciously care about their health and that of their loved ones, attempt to lead a healthy lifestyle, and choose healthy and safe organic products produced without harming the environment by socially responsible businesses.

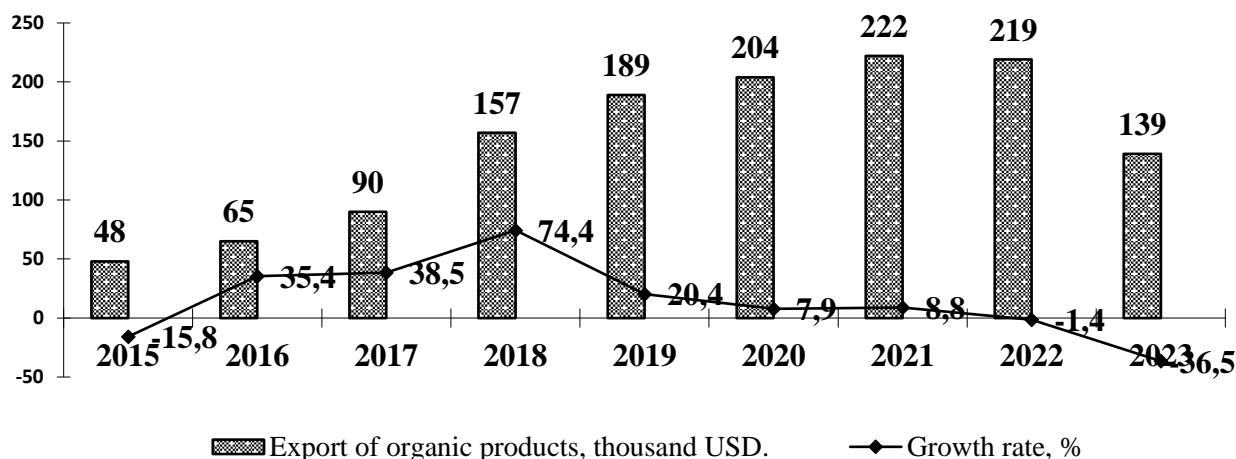


Fig. 4. Export of domestic organic products, 2015-2023.\*

\* Constructed based on data from source [27]

Therefore, conscious consumers are driving the growth of demand for organic products. As a result, agricultural producers are paying increasing attention to the production of organic products to meet the existing demand and saturate both domestic and foreign markets.

Informing the public about the properties, advantages, and benefits of organic products will contribute to forming consumers' willingness to purchase them, even at a higher price. Such consumers are referred to as "internally motivated." They are guided by their preferences and tastes, certain family traditions, and financial capabilities, but are capable of adjusting these according to changes in living conditions, acquiring certain experiences, and so on. By purchasing organic products, consumers strive to meet certain time requirements, avoid standing out, align themselves with other members of their social group, and follow fashion trends or public opinion. This category of consumers is known as "externally motivated" [26, p. 319].

Y.E. Kyrilov rightly notes that "organic production can be considered an alternative to competition, which can provide competitive advantages for domestic agricultural producers in competitive conditions by increasing the food security of the country and strengthening its export potential through expanding sales markets" [24].

The growth in demand for organic products and the saturation of the market provide an impetus for increased competition among agricultural producers. As a result, producers of organic agricultural products are compelled to ensure high quality and appeal, certification, the application of marketing tools to promote their products in the market, the use of tracking methods, and the mitigation of risks and threats, among other strategies.

The level of competitiveness of organic product producers in the market is shaped by a number of factors [28, p. 112]:

- product quality: consumers of organic products are mainly individuals who choose a healthy lifestyle and care about their health, therefore the quality and safety of the products are of primary importance to them;

- consumer demand: stable consumer demand for organic products stimulates their production and strengthens the position of agricultural enterprises in the market;

- marketing strategies: aimed at retaining existing consumers and attracting the attention of potential clients, increasing brand awareness;

- ecological responsibility: adherence to environmental standards and requirements for the certification of organic products;

- adaptiveness and innovation: the ability to respond quickly to changes, including skillfully and, most importantly, rapidly applying innovations, will contribute to strengthening the competitiveness of agricultural producers;

- stability of production: agricultural production in general, and organic production in particular, are significantly influenced by external environmental factors and weather conditions; therefore, the development of measures that ensure the stability of organic production, its demand in the market, and overcoming various risks is extremely important for ensuring the competitiveness of agricultural producers;

- social responsibility: the stability of a company in the market is also determined by its ability to provide adequate working conditions for its workers, mutually beneficial partnerships with suppliers and consumers, etc.

There are also several obstacles to the development of organic agriculture, including natural and climatic conditions for cultivation, lower yields, more complex technological conditions, significant production, storage, and processing costs, difficult product certification conditions, low purchasing power of consumers, and so on.

Increasing the competitiveness of organic agricultural producers requires state support and assistance in fostering a positive attitude among global consumers towards domestic organic products and improving their image in the international market.

To improve the institutional regulation of organic production, storage, transportation, circulation, and labeling of organic products, and to adapt the requirements of organic legislation to EU law, the Verkhovna Rada of Ukraine adopted the Law of Ukraine "On the Basic Principles and Requirements for Organic Production, Circulation, and Labeling of Organic Products" (No. 2496-VIII, effective from August 2, 2019). This law takes into account the directives and regulations of the EU, allowing for the adaptation of Ukrainian legislation to European standards; it enhances the requirements for the production, labeling, and circulation of organic products; and it introduces other requirements for both producers and other potential market participants in organic agricultural products, as well as certification and control bodies [29].

Enhancing the competitiveness of domestic organic products in international markets will be supported by promoting these products abroad through representation at international exhibitions, government support, and the creation of alliances.

Increasing the competitiveness of domestic organic products can ensure the country's food security and address a range of social and environmental issues in line with corporate social responsibility.

The production of organic agricultural products is a promising field that aligns with the principles of social responsibility and can address various issues faced by agricultural producers. It can enhance their competitiveness and strengthen food, environmental, economic, and social security, contributing to national security as a whole. It is worth noting, however, that achieving these goals requires government support and the development of various measures for its advancement.

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# **THE CORPORATE SOCIAL RESPONSIBILITY OF BUSINESS IN UKRAINE: ADAPTATION TO MARTIAL LAW CONDITIONS**

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Russia's full-scale invasion of Ukraine has had a significant impact on various aspects of the population's life and the functioning of domestic businesses. The destruction of housing, loss of jobs, mobilization of Ukrainians, relocation from the war zone to safer western regions of Ukraine, and reduced income are the problems that make life much more difficult for Ukrainians, and they often need help from the government and businesses to solve. That is why the latter has partially changed the vector of corporate social responsibility (CSR) activities in an effort to bring victory closer, help the army and people affected by the war, and provide them with employment and housing. In general, CSR activities have always contributed to strengthening the company's competitive position in the market, but businesses adapt them in accordance with changes in the factors of their marketing environment. CSR activities of a business attract investors and talented employees to it (this is especially important in the current conditions of a shortage of personnel in the market), expand its customer base (which has also decreased due to the decline in the population of Ukraine), and form a proper image among creditors, so they are relevant for all companies in the market.

Companies can Implement CSR activities in different directions. In [1], Kuzmin O., Stanasyuk N., Ugolkova O. identify 4 types of business CSR, such as ethical and environmental, as well as philanthropic and economic. Ethical CSR is aimed at business observance of human rights, existing legislative acts, combating corruption, taking care of staff and creating safe and optimal working conditions for them, implementing proper, respectful attitude to customers and other market players, and conducting fair competition. Environmental CSR is aimed at reducing business consumption of energy and various types of resources, recycling waste and packaging, using renewable energy sources, and active participation of businesses in solving environmental problems. Philanthropic CSR involves voluntary financial assistance to charitable organizations and people in need, sponsorship, volunteering, support for educational and cultural projects, and healthcare. Economic CSR is aimed at creating



additional jobs, paying taxes in full, and investing in the sectors of the economy that are a priority for the state and are inextricably linked to other areas of CSR. The above-mentioned types of CSR are analyzed in [2, 3].

Bobko L. and Maziar A. emphasize the important role of CSR activities for business activities and the promotion of its further development [4]. Kozmuk N. [5, p. 73] notes the important role of CSR measures in the implementation of the concept of sustainable development, emphasizing that they require proper financial support. Moiseienko T., Harbarchuk Ya. also emphasize the importance of CSR measures in ensuring sustainable development of the country, as well as increasing the competitiveness of the enterprise in the market through the implementation of such measures [6]. Zalizniuk V., Tsymbal Ye. present a classification of business costs for the implementation of CSR measures, the authors note that in Ukraine CSR is implemented within the framework of the theory of corporate altruism, that is, these measures are carried out as voluntary contributions of business to ensure the development of various spheres of society - social, economic and environmental, they are directly related to a specific area of activity of the enterprise [7]. Banik A. and Mitra A. emphasize the expediency of using CSR not only by business but also by educational and research institutions that should implement them in their policies and practices [8].

Kosar N., Pylypenko V., Kuzo N. note that domestic enterprises in the manufacturing and service sectors conducted CSR activities even before 2014 [9]. In the pre-war period, business CSR activities were often aimed at solving social and environmental problems, developing culture, health care, creating safety and professional growth of employees, and promoting the development of local communities. They were especially actively implemented by consumer goods manufacturers, retail chains, and banking institutions. Kharchuk V., Chernobay L., Ryabichina Y. analyzed various existing models of business CSR implementation - American, European and Asian, potential difficulties of business in implementing CSR measures, perception of CSR measures in the pre-war period by company managers and the population, investigated the peculiarities of disclosure of information on the implementation of CSR measures by business in Ukraine [10]. Varieties of internal CSR measures of business, their role in the formation of staff loyalty to the enterprise were studied by Sardak S. and Haslenko K. [11, p. 343-345.] These scientists also provide examples of the implementation of such measures by large domestic enterprises. However, businesses should harmoniously combine both internal and external CSR activities. Luchko H. notes that in the conditions of war, the role of volunteering has increased among CSR activities, i.e. collecting donations for the army, helping the victims of war [12, p. 153]. Chervinska L., Chervinska T., Kalina I., Koval M., Shulyar N., Chernyshov O. [13] also pay considerable attention to the

analysis of CSR activities in war conditions. Analysis of the literature shows that they do not analyze the attitude of the Ukrainian population to various CSR activities of business in wartime through the collection and processing of primary marketing information.

The study will use the method of systematic analysis and synthesis of scientific publications, a survey and analysis of its results, a graphical method and a method of systematization.

As already noted, in the current environment, CSR has become an integral part of any company's success, as customers are more favorable to businesses that are responsible to society and strive to improve the quality of life of mankind. This concept forces companies and organizations to combine market activities with ethical principles and ensure sustainable environmental and social development.

According to Kotler's classification, CSR of enterprises and organizations can be implemented through six main initiatives [14, p. 232]:

1. Charitable activities aimed at drawing public attention to certain social needs or assisting in fundraising, attracting participants and volunteers.
2. Charity marketing, is when enterprises and organizations undertake to make contributions or deduct a certain percentage of sales to charitable causes.
3. Corporate social marketing consists of activities aimed at improving public health, safety and environmental protection.
4. Corporate philanthropy is when a participant makes donations to charitable organizations through cash grants, gifts or goods and services.
5. Volunteer work in the public interest, in which case companies and organizations support and encourage their employees to help local public organizations and initiatives.
6. Social and ethical approaches to doing business, which involve the implementation of practices that contribute to the welfare of society and environmental protection.

The development of CSR in Ukraine is regulated by the Concept of Implementation of the State Policy in the Field of Promoting the Development of Socially Responsible Business in Ukraine for the Period up to 2030, approved by the Order of the Cabinet of Ministers of Ukraine No. 66-p of January 24, 2020 [15], which is aimed at forming the regulatory and legal support for the implementation of sustainable development goals, encouraging Ukrainian companies to comply with international standards and business principles.

The main criteria of CSR in the pre-war period were [16, p. 96]:

- promotion of equality in remuneration of men and women;
- reduction of income differentiation of the population;
- increasing the rate of nominal wage growth;

- increasing the share of infrastructure facilities equipped with the needs of people with disabilities;
- increase the share of public transport vehicles that are adapted for use by persons with disabilities;
- increase the share of websites accessible to people with visual and hearing impairments;
- promote employment of people with disabilities;
- reducing the number of employees injured in workplace accidents;
- reducing the share of people working in hazardous conditions;
- reducing the share of polluted wastewater discharges into water bodies in the total volume of emissions;
- increase in the growth of foreign direct investment in the Ukrainian economy, etc.

Changes in the factors of the business marketing environment significantly affect the relevance of various CSR activities. The Covid-19 pandemic has shifted the focus of CSR activities of both domestic and foreign companies. For example, in 2020, PJSC Carlsberg Ukraine allocated a significant amount of money from its internal fund - UAH 3 million - to protect the population from the coronavirus pandemic. These funds made it possible to purchase 3 lung ventilators and 8 oxygen concentrators for hospitals in Zaporizhzhia region. In May 2020, with the active support of the Lvivske brand on 1+1 TV channel, Ukrainian pop stars raised a significant amount of money for the purchase of personal protective equipment for Ukrainian doctors at the national music telethon "You are not alone". With the financial support of Enzym Company and Kormotech LLC, an insurance fund was formed for Lviv region doctors in case of coronavirus infection and the necessary equipment and medicines were purchased for hospitals. At the same time, the companies actively implemented measures to support people in difficult life circumstances - children in orphanages, people with disabilities, etc.

The war has also changed the emphasis on the implementation of CSR activities. The priority ones in modern conditions include [12, p. 153; 16, p. 98]:

- volunteer events or programs in which employees carry out certain activities that are useful for other people (primarily for the military, people affected by the war) or for the environment;
- making regular fixed or irregular payments to the funds of non-profit or charitable organizations;
- conducting activities that contribute to solving environmental problems that have arisen primarily as a result of the war, saving traditional energy sources;
- employment or assistance in employment of internally displaced persons, as

well as veterans and disabled persons;

- participation in the implementation of various public initiatives;
- support of existing ethical values, including the implementation of programs to ensure inclusiveness, equality and justice, both for its employees and other persons;
- establishing charitable organizations, including those for animal protection;
- popularization of Ukrainian culture and traditions;
- humanitarian assistance to the population;
- support of those in need with medicines, medical equipment and medical services;

• assistance in evacuating and accommodating the population from the areas of active hostilities;

- organizing shelters for the population;
- assistance to the Armed Forces of Ukraine and territorial defense;
- payment of taxes in advance;
- information campaign to spread the truth about the war;
- assistance in staff retention, business relocation;
- providing free access to information resources;
- 24/7 operation to meet the urgent needs of the population;
- international organizations leaving the Russian market, etc.

Domestic businesses are developing CSR in the context of war, supporting Ukraine, in particular, 52% of enterprises have approved CSR strategies, and 83% are implementing CSR (according to CSR Ukraine [17]). This is also due to the fact that companies are interested in continuing their operations in Ukraine even in peacetime, and selling their goods both on the domestic and foreign markets.

The areas of activity of the most active socially responsible domestic enterprises and organizations during the war are shown in Fig. 1.

In today's environment, the most socially responsible enterprises and organizations include those operating in the field of telecommunications and mobile communications, food industry, logistics and banking.

Under martial law, not only companies but also their employees are involved in implementing socially responsible measures. They actively transfer their own funds to meet the urgent needs of the Armed Forces and people affected by the war, volunteer, donate, and help their mobilized colleagues and their families. The business itself also donates its funds to charity. In particular, in 2023, JSC Oschadbank transferred UAH 1 million to the Kherson City Council fund to restore and develop both the infrastructure and housing stock of this affected region [19]. A characteristic feature of CSR activities in times of war is that businesses implement them promptly, responding to unexpected situations that require immediate resolution.

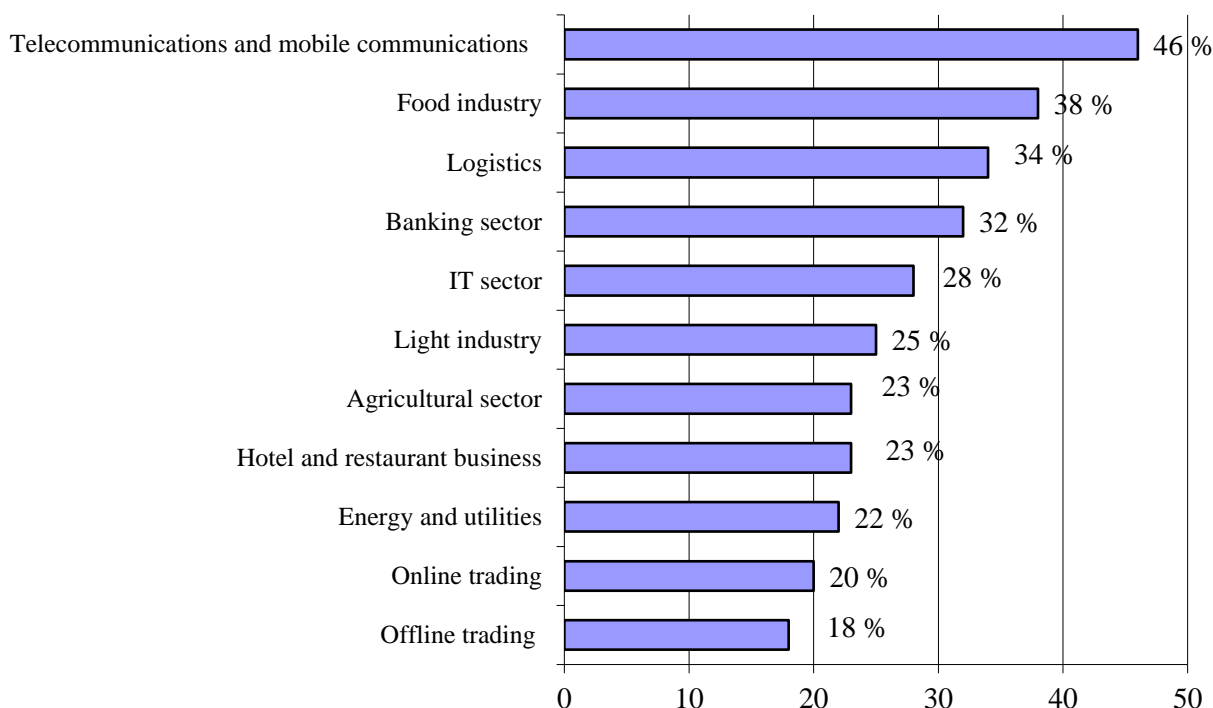


Fig. 1. Spheres of activity of the most active socially responsible domestic enterprises and organizations in the context of war, according to Factum Group research, %

*Source: [18]*

Specific CSR measures also depend on the company's business area. For example, back in the pre-war period, Kormotech LLC implemented the Humane Education project, held Take a Dog to Work days, and organized the Responsible Neighbor campaign, shaping the public's humane attitude towards animals. Since the beginning of the full-scale invasion, this feed manufacturer has been actively taking measures to help animals and people affected by it [20, p. 51]. Here we can name the initiative of Kormotech LLC to rescue pets, called Save Pets of Ukraine, which has provided for the rescue of more than 230 thousand animals. This company initiated the formation of the U-Hearts charitable foundation, which allowed to unite donors from different countries; it also developed a free veterinary care service called Optimeal 9100, where veterinarians provide free consultations to owners to help their pets [21].

Farmak JSC contributed to the implementation of the Mobile Doctors project, which helps people from the de-occupied territories to undergo free health check-ups and receive the necessary medicines [22].

Due to the need to fill the budget in times of war to finance the needs of the Armed Forces, economic CSR measures related to the full payment of taxes by businesses remain relevant. After all, according to secondary marketing information, almost 3 million people in Ukraine are unofficially employed, and about 2 million people receive unofficial salaries [23]. This has a negative impact on Ukraine's budget, especially in such difficult times of war. The expert survey shows that the tax increase announced by the government in Ukraine will lead to even greater shadowing of

business, reducing the profitability of those businesses that pay taxes in full and, accordingly, the funds they can allocate to CSR activities. In general, CSR activities of business should be properly supported by the state in general.

Business CSR measures can be considered as a certain form of investment in the formation of a positive image of the company in accordance with the existing values of society in a certain period of time [16, p. 98].

When developing promising measures in the field of CSR, the business should take into account both the existing urgent needs in the country and at enterprises and their assessment by society.

To determine the impact and promising areas of CSR in Ukraine, the authors conducted a study that found that 40 % of respondents need support in times of war. According to the survey, Ukrainian citizens primarily rely on the support of the state, relatives, and friends (Fig. 2).

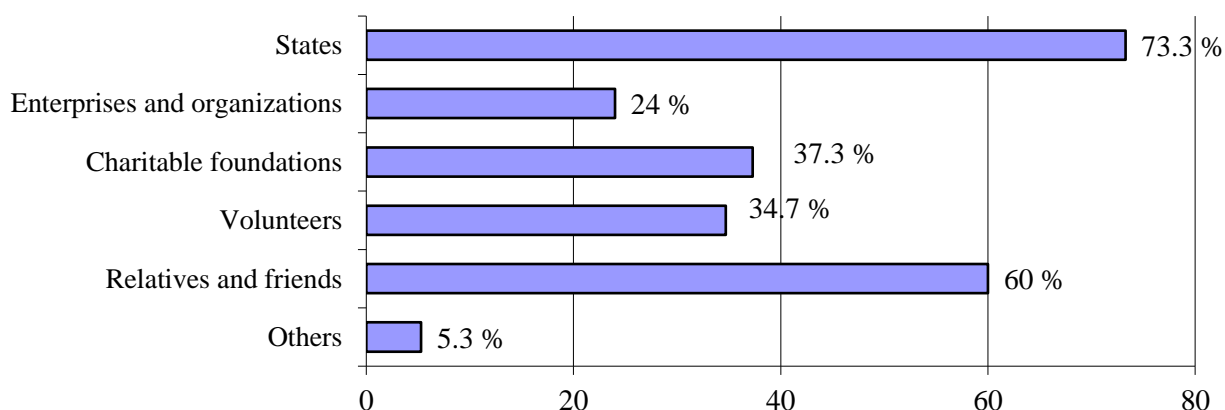


Fig. 2. Expectations of support from Ukrainian citizens under martial law

*Source: authors' research*

However, 37.3% of respondents expect help from charitable foundations, 34.7% of respondents expect help from volunteers, and 24% of respondents expect help from businesses and organizations. For 54.9% of respondents, psychological support is primarily important (Fig. 3).

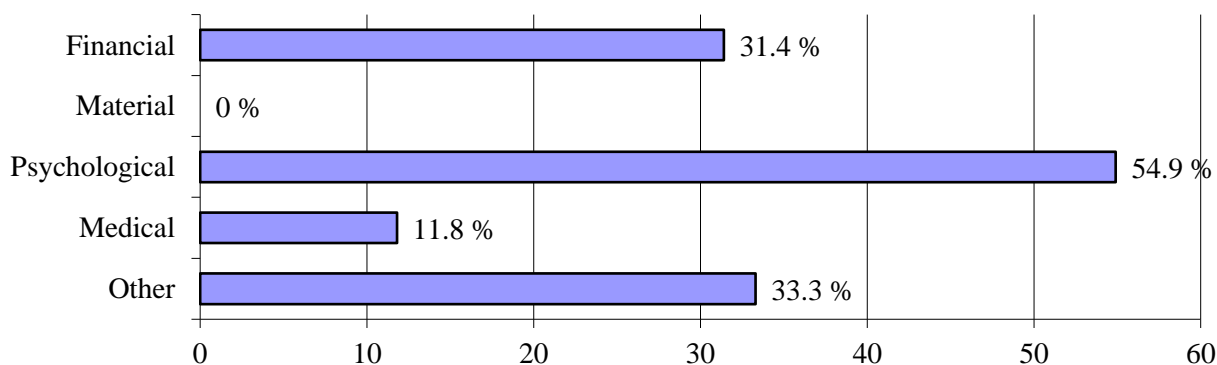


Fig. 3. Preferences for types of support for Ukrainian citizens in times of war

*Source: authors' research*

Also, 31.4% of respondents expect financial support, and 11.8% of respondents expect medical support.

In general, society is convinced that domestic businesses should adhere to CSR in times of war (98.7% of respondents), which helps companies achieve important goals (Fig. 4).

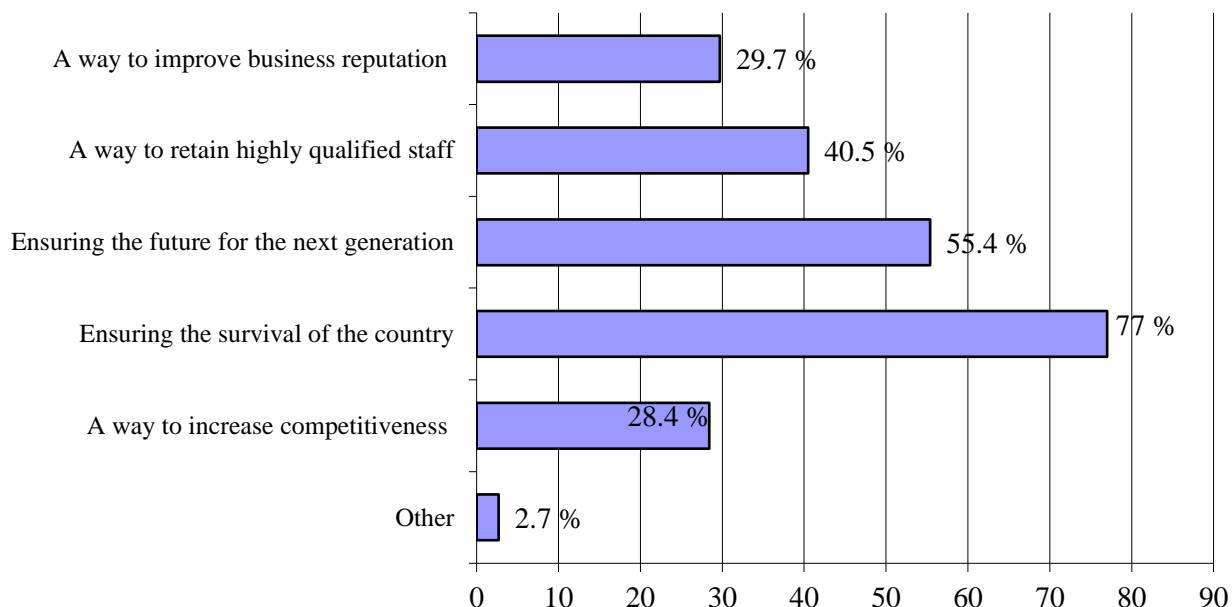


Fig. 4. The main goals of CSR in times of war

*Source: authors' research*

77% of respondents believe that by adhering to CSR, companies ensure the survival of the country, 55.4% of respondents - ensure the future of the next generation, 40.5% of respondents - retain highly qualified personnel, 29.7% of respondents - improve business reputation, 28.4% of respondents - increase competitiveness.

89.3% of respondents believe that socially responsible companies and organizations are more trusted by customers. The most important area of CSR of domestic enterprises and organizations is to help the army (Fig. 5). Respondents also consider care for the safety and well-being of staff (68.5%), business continuity and protection (46.6%), and assistance to local communities (39.7%) to be important areas of CSR. In times of war, respondents consider environmental protection and partnership development to be less important areas of CSR.

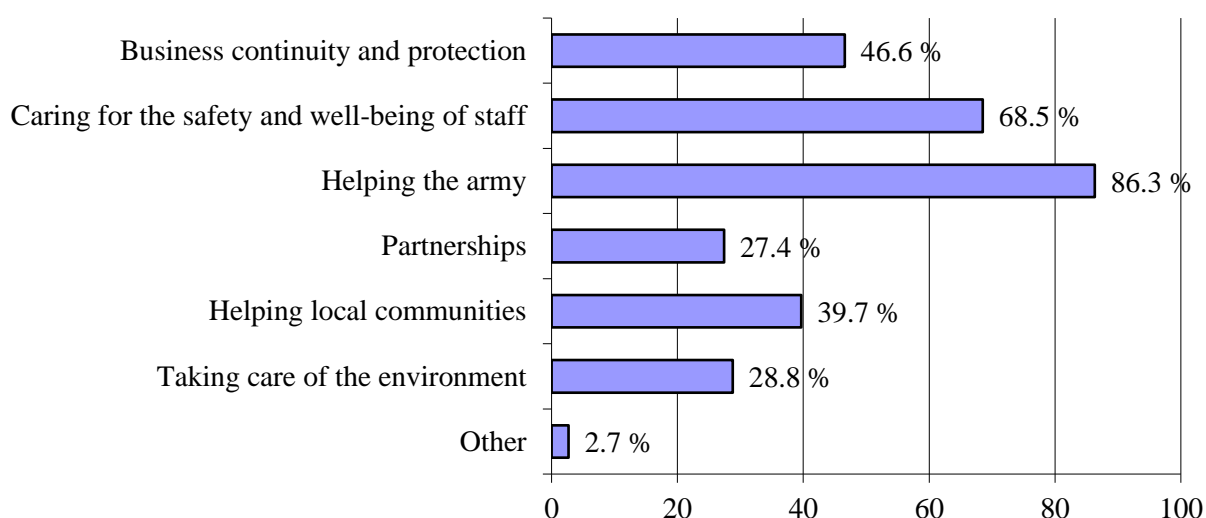


Fig. 5. Main directions of CSR of domestic enterprises and organizations

*Source: authors' research*

The importance of the main directions of CSR of domestic enterprises and organizations by age categories is shown in Table 1.

Table 1

Importance of the main directions of CSR of domestic enterprises and organizations by age categories

Areas of CSR	Up to and including 20 years of age	21-35 years	36-50 years	51-65 years	66-80+ years
Business continuity and protection	55.5 %	62.1 %	25 %	41.7 %	16.7 %
Caring for the safety and well-being of staff	66.7 %	72.4 %	75 %	58.3 %	33.3 %
Helping the army	77.8 %	75.9 %	95 %	100 %	66.7 %
Partnerships	22.2 %	27.6 %	30 %	8.3 %	33.3 %
Helping local communities	33.3 %	41.4 %	50 %	41.7 %	0 %
Caring for the environment	44.4 %	24.1 %	40 %	8.3 %	16.7 %
Other	0 %	3.4 %	5 %	0 %	0 %

*Source: authors' research*

Helping the army is the most important CSR area for all age groups, but it is most supported by respondents aged 36-50 and 51-65. Business continuity and protection is an important area for respondents under 20 and 21-35 years old, care for the safety and well-being of staff - for respondents under 20, 21-35 years old and 36-50 years old, assistance to local communities - for respondents aged 21-35 years old, 36-50 years old and 51-65 years old, and care for the environment - for respondents under 20 and 36-50 years old.

To inform the society about CSR activities, enterprises and organizations should first of all use their own official websites and social networks (Fig. 6).



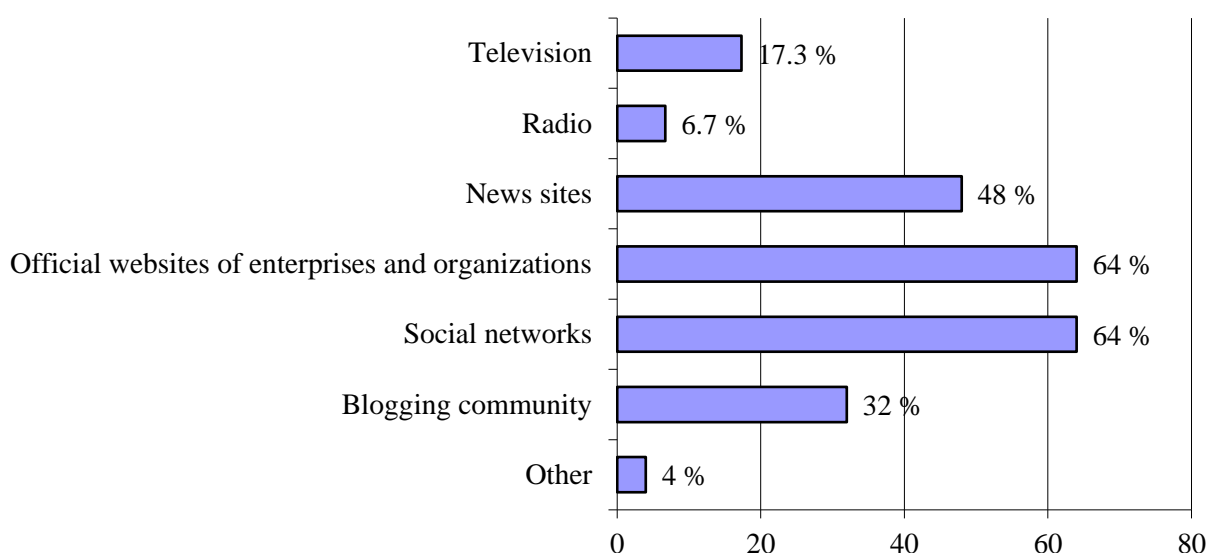


Fig. 6. Effective sources of information on CSR of enterprises and organizations  
*Source: authors' research*

News websites (48% of respondents) and blogging community (32% of respondents) are also quite effective. Respondents consider radio and television to be the least effective sources of CSR information. Therefore, business representatives should take these survey results into account when developing their marketing communications.

CSR activities are relevant for companies of different business sectors in all conditions of their functioning. When developing them, a company often takes into account the specifics of its field of operation. The socio-economic effect of CSR measures implemented by a business under martial law contributes to the company's reputation and trust from customers and society as a whole; growth of the company's market share; support for the development of the economy and socially vulnerable groups of the population, its employees; increase in employment; and attraction of investors' attention.

Changes in the factors of the business environment also change the priority and essence of the CSR directions and activities implemented by the business. In Ukraine, under current conditions, businesses must respond promptly to the urgent needs of society and the army, adapting the development of new CSR activities to them. However, it is also important for companies to properly inform their customers and society in general about them, which will positively affect their image in the market.

To determine the impact and prospective directions of CSR in Ukraine, the authors conducted a survey, which revealed that 40% of respondents need support in times of war. In general, society is convinced that domestic business should adhere to CSR. To inform society about CSR activities, enterprises and organizations should first use their own official websites and social networks, news sites and blogging

community. The most important areas of CSR of domestic enterprises and organizations are assistance to the army, care for the safety and well-being of staff, business continuity and protection, and assistance to local communities.

During the war and the post-war period, an important area of business CSR can be considered investment activities in various areas to restore the economy and social sphere. However, such activities may be accompanied by significant investment risk.

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# THE IMPERATIVE OF SOCIALLY RESPONSIBLE MARKETING IN WARTIME

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Rapid changes in the Ukrainian economy and society necessitate the formation of new business models that can enhance competitiveness, consolidate the market, and adapt to external challenges. The acceleration of technological progress and the growth of risks demand that companies be flexible and agile in their decision-making.

The war in Ukraine has acted as a catalyst for change, requiring businesses to adopt unconventional solutions and quickly adapt to new realities. Enterprises must develop marketing strategies that not only meet consumer needs but also address the challenges of the present.

To succeed in the new environment, companies must focus on values that are important to society. In this context, socially responsible marketing (SRM) is becoming increasingly popular, as it allows companies not only to meet consumer needs but also to build a positive brand image and strengthen consumer trust. SRM is an integral part of corporate social responsibility (CSR) and aligns with international standards aimed at standardizing non-financial reporting and assessing a company's contribution to sustainable development.

These postulates are the foundation of international standards such as:

- SA8000 (Social Accountability 8000), which assesses the social components of a company's management systems [1];
- GRI (Global Reporting Initiative), which is a voluntary reporting framework for corporate environmental performance [2];
- AA1000SES (Stakeholders Engagement Standard), which outlines the principles for developing international standards for reporting on social activities [3];
- ISO26000 "Guidance on Social Responsibility", which creates a common understanding of social responsibility and provides detailed guidance on its development, outlines key principles, issues, and tasks, and includes a methodology for integrating CSR into all business processes, including the development of SRM [4].

The main approaches to the formation and development of SRM have been the subject of research by many domestic and foreign scientists. The lack of a unified view of its interpretation and use can be explained by the divergence of financial and ethical aspects.

Foreign scientists Maon, F., Swaen, V. & De Roeck, K [5] argue in their research that in order to form a high level of customer loyalty, a company must conduct active activities in the field of SRM. Such an approach will contribute to attracting customers and retaining their attention in the long term. Retaining the attention of consumers can be the result of their understanding of the socially responsible steps taken by the company. In the era of digitalization, companies must understand how to convey information to their audience in order to achieve the maximum effect from the implemented measures.

Tong, J., Shahid, I. [6] and others in their research demonstrate the interaction between sustainable marketing and responsible sustainable behavior towards consumers at various levels of CSR. The authors consider CSR as a factor that strengthens the link between brand image and its marketing activities.

Safeer, A. A. & Liu, H. [7] believe that for the implementation of CSR-related measures, "word of mouth" plays an important role, which can strengthen the authenticity of the brand and its role among the target audience, and identify the social actions of the enterprise. Thanks to this approach, target audiences, interacting with each other, exchange information by providing advice on a particular brand, its advantages over others. This relationship is based on the target audience's own experience and the desire to share experiences about a particular brand, for example.

Thottoli M. and Thomas K. [8] prove the feasibility of using websites and their development as effective channels of communication with the target audience. They explain how to build relevant content in combination with SRM. The scientists explain their approach by the fact that the vast majority of consumers are active participants in social networks and have their own developed audience. They note that SRM should be evaluated using such financial indicators as return on equity (ROE), Tobin's Q, and return on assets (ROA).

The research of other foreign authors, including Hosta M. and Zabkar V. [9], who reveal the prerequisites for the implementation of SRM, was no less interesting. While Choi S. and Ng A. [10] pay attention to the change in price as a result of the implementation of SRM and obtaining an emotional effect.

Souto J. [11] emphasizes creativity and innovation that can be the driving force for overcoming economic and social problems. Stahl G., Brewster S. and others [12] highlight the process of human resources management as a tool through which effective SRM can be formed.

Domestic researchers have also conducted extensive research on the formation of SRM. Biletska I. and Romanchukevych M. [13] emphasized the role of SRM in wartime. They noted that SRM is a tool that can overcome a number of problems that have had socio-economic consequences as a result of military actions in Ukraine. One way to solve them is to involve representatives of businesses that are focused on cooperating with society in terms of social responsibility. The authors pay special attention to internet social responsibility and internet marketing.

Sobko O. [14] in her research emphasizes that SRM is an important component of the modern paradigm for studying the problem of emerging from crises and requires an expansion of the scale and types of activities within which it can be implemented. She notes that the war has conditioned new directions for the development of SRM, including:

- Supporting the Armed Forces of Ukraine and fighters in the war zone;
- Providing housing and employment for internally displaced persons;
- Building social housing, schools, and orphanages;
- Equipping medical institutions with equipment and medicines;
- Implementing social projects;
- Rehabilitation and adaptation of veterans, and others.

Lyashuk K. and Gordovskiy A. [15] believe that the situation in Ukraine is uncertain and pessimistic. Therefore, SRM is capable of not only solving the problems of a certain social stratum but also stabilizing the activities of work collectives, contributing to the growth of labor productivity, and stabilizing the activities of enterprises in the long term. The authors emphasize that business and society are inseparable and must build relationships taking into account the norms of morality and civilized relations.

However, in the current environment, there are ambiguous opinions about whether it is necessary to create social advertising during wartime? Is society able to perceive information in the context in which it will be presented?

The study employed a mixed-methods approach to examine the relevance of socially responsible marketing in wartime. The theoretical framework was established through a comprehensive literature review of academic articles, international organizational reports, and media analyses. Empirical data was collected through an analysis of SRM practices of domestic and foreign businesses, as well as existing analytical and research data. Both quantitative and qualitative methods, including statistical and content analyses, were applied to analyze the data. To further enrich the findings, case studies, expert evaluations, and scenario analyses were conducted.

The modern business environment is undergoing constant dynamic changes, driven not only by economic but also by social and political factors. In the context of global crises, such as war, the issue of corporate social responsibility becomes

particularly acute. CSR has become an integral part of business and involves the active participation of companies in solving social problems, integrating their social and environmental expectations into daily activities through achieving a balance between the social and financial aspects in making economic, financial, and investment decisions. CSR has become not just a trend but a strategic approach that allows companies to enhance their reputation, strengthen customer relationships, and achieve long-term success.

Businesses are increasingly aware of their role in society. Companies that until recently focused exclusively on profits now see themselves as active participants in social processes. This shift in focus has been driven by the growing awareness of consumers who prefer the products and services of companies that care about the social and environmental aspects of their activities, care about society, and help solve socially significant problems of both the individual community and the state as a whole.

SRM is a significant part and a logical continuation of CSR as a process of applying marketing tools to promote the values of social responsibility. SRM can be seen as a carrier of CSR, through which society perceives the company and forms an attitude towards it.

Unlike traditional marketing, which focuses on meeting the individual needs of consumers, SRM aims to create positive changes in society. It involves creating and communicating a value proposition that resonates with the values of the target audience.

SRM can be considered a practical implementation of the CSR concept, focused on building partnerships with consumers by meeting their needs and interests in a way that will have a long-term positive impact on both their well-being and the well-being of society as a whole, as well as on the company's financial and market position [16]. SRM is a marketing management concept based on the principles of responsibility to consumers and customer orientation, responsibility to employees in accordance with existing social goals and standards [17].

As Kotler F. noted, SRM is a voluntary activity of business entities aimed at solving social problems and providing assistance to the population and territories, based, on the one hand, on decisions made from general humanitarian goals and values of society, and on the other hand, taking into account the objective need for business to be socially responsible, including through the active implementation and actualization of its activities before the population, strengthening its business and social reputation [18].

We believe that Kotler F.'s definition reflects the growing awareness of enterprises of their role in solving social problems, a positive impact on the external environment, and emphasizes the importance of satisfying the long-term interests of consumers as a prerequisite for the sustainable and successful operation of a company,



which makes it relevant today [19]. Therefore, to implement SRM, companies need to achieve a balance between such, usually conflicting, criteria as company profit, consumer satisfaction, and the interests of society.

The idea of SRM is to apply the same marketing principles to the ideas of promotion, attitude, and behavior that are used to sell products to consumers. This is an understanding of how to properly influence people's behavior and achieve a better quality of life. Thus, SRM is an adaptation of commercial marketing technologies to programs aimed at influencing the voluntary behavior of the target audience to improve their personal well-being and the society in which they live. Today, SRM is widespread in many areas, such as government agencies, private non-profit organizations, companies, educational institutions, etc. [20].

The main goal of SRM is social welfare - creating value not only for business but also for society as a whole. And this is the main result of SRM, while the financial result is the main goal of commercial marketing. At the same time, achieving the public good can also contribute to achieving the company's commercial goals.

SRM differs from traditional marketing in several aspects. Firstly, it covers a wider range of stakeholders, including not only consumers but also employees, investors, the public, and the environment. SRM is focused on the long term, not just short-term results or for PR purposes, and is integrated into all aspects of the business, from production to marketing. Consumers have defined SRM as a practice that conveys specific, transparent, accurate, and understandable information about corporate responsibility for the social and environmental situation.

SRM not only adapts to new conditions but also plays a critically important role in building trust between businesses and society. In the context of war, when society faces numerous challenges such as humanitarian crises, social inequality, and environmental threats, enterprises have a unique opportunity not only to demonstrate their responsibility but also to significantly influence the recovery of the national economy and the morale of the population.

Under such conditions, SRM can become a crucial tool for strengthening brand reputation, attracting customer loyalty, and increasing competitiveness. Companies that implement social responsibility strategies are able to not only maintain their market positions but also directly support fellow citizens in difficult times. Therefore, SRM is a management strategy that combines a company's commercial goals with social and environmental aspects, meaning it strives to achieve a balance between company profit, customer satisfaction, and preserving the well-being of society and the environment.

Thus, SRM is an integral part of modern business. It enables companies to contribute to the development of a sustainable society while achieving commercial success. The integration of CSR principles into a marketing management strategy

indicates a conscious investment in the future of the business and a demonstration of social responsibility.

To avoid ambiguities in the interpretation and common understanding of the essence of "socially responsible marketing" for the company, its employees, partners, and consumers, which will ensure consistency in the implementation of CSR in general and the marketing strategy in particular, we will outline the main principles of SRM proposed by Patrick Byers, based on the study of the principles of responsible marketing [21]:

1. Strategic responsibility. Each enterprise must develop its own strategy of responsible marketing in order to save resources and time, which will allow it to focus more on the problems that arise in current activities.
2. Responsibility for one's own messages. The company must treat its audience with respect, taking into account the intellectual abilities and experience of its consumers. Messages must be truthful, respect confidentiality, not be overloaded with advertising, and responsibly treat young audiences.
3. Social responsibility. Entrepreneurs should consider that marketing not only sells a product but also affects every aspect of a person's life.
4. Responsibility for performance. Best practices should always be used.
5. Responsibility for the selection and recruitment of employees. Company management must be confident that the right employees are in the right positions.
6. Environmental responsibility. It is necessary to use environmentally friendly raw materials, environmentally friendly technologies for the production of environmentally friendly products.
7. Responsibility for return on investment. It should be remembered that every decision has an impact on the company's net income.

Thus, the outlined principles of SRM encompass the ethical behavior of the company towards employees and all stakeholders, social responsibility in all its manifestations, environmental responsibility, a long-term perspective focused on building long-term relationships with customers, partners, and society, as well as consumer centrism, focused on meeting the needs and values of customers.

According to Leonova S. and Shevtsov L. [17], adherence to the principles and basic provisions of SRM harmonizes the goals of the company, society, and consumers, which will ensure a number of advantages from the implementation of SRM for each of them. In particular, the advantage for society will be the established cooperation of enterprises with local authorities and non-governmental organizations, participation in the resolution of crisis situations in the community, sponsorship and charitable activities, the production of quality and safe goods; for consumers - the opportunity to purchase quality and safe goods, a sincere interest in solving consumer problems; for

enterprises - expanding the market, improving reputation, increasing investment opportunities and company capitalization, strengthening the brand, increasing business activity, etc.

The advantages of socially responsible marketing are numerous: it helps companies create a positive image, strengthen customer trust and consumer loyalty, attract and retain talented employees, and reduce risks associated with negative social and environmental impacts. In addition, SRM stimulates innovation and promotes the development of sustainable business, which contributes to the long-term development of the company and its integration into society.

Given the relevance and modern demand for socially responsible marketing from all stakeholders interested in its implementation, SRM covers a variety of manifestations that contribute to a positive impact on society and the environment. Examples of SRM manifestations may include:

1. Social responsibility of the brand: using environmentally friendly materials in its products; reducing the negative impact of production on the environment; implementing policies that take into account the interests of various stakeholders, including customers, employees, suppliers.
2. Implementation of social initiatives: supporting charitable organizations, financing social and charitable projects, local communities, educational programs, etc.
3. Partnership with non-governmental organizations to achieve common social goals.
4. Open and transparent communication with customers about the impact of products on the environment and society, as well as about corporate values and practices.
5. Promotion of responsible consumerism through information campaigns that encourage responsible consumption of goods, especially in cases of ethical, environmental or social aspects.
6. Promotion of inclusivity and diversity by conveying the values of equality, diversity, and inclusion in its campaigns and within the company.
7. Implementation of ethical marketing as a striving for honesty, transparency, and ethics in advertising and promoting goods or services.

Early manifestations of SRM included restrictions on marketing aimed at children, especially for products such as tobacco, alcohol, and gambling. Over time, this list of products was expanded to include restrictions on "junk food," partly due to the increase in childhood obesity [20].

However, each company views the implementation of SRM principles in its own way, emphasizing different aspects of its manifestation. Nevertheless, in general, the

actions of companies in various directions of SRM bring powerful joint results for society on a global scale.

There are many striking examples of socially responsible marketing from both Ukrainian and foreign companies. Let's consider a few of them to understand the directions of SRM implementation in peacetime.

For example, the well-known coffee company Starbucks, since its founding in 2001, has been promoting its brand while caring for the environment, customers, and suppliers, and for over 20 years has been evaluating its own activities in the Annual Global Impact Report. From the very beginning, Starbucks became much more than just coffee. Starbucks is a company for people that makes a positive contribution to every community it serves through 38,000 stores in 86 countries around the world [22].

Starbucks promises to give more than it takes from the planet and keeps that promise every time. The company's comprehensive approach is based on the desire to build a more sustainable, equitable, and resilient future for coffee, farmers, communities, and the planet, which is achieved by testing and scaling innovative solutions to support workers, farmers, and communities in the context of global climate change. Starbucks aims to lead the movement to reduce the use of single-use packaging and wants to empower customers to make environmentally conscious choices with every visit to Starbucks around the world. The company has set an ambitious goal for every packaging that comes into contact with customers to be 100% reusable, recyclable, or compostable; made from 50% recycled materials; and by 2030 produced using 50% less virgin material derived from fossil fuels. In addition, all Starbucks stores are certified as "Green Store", which meets strict standards, confirmed by a third-party auditor, in eight areas of environmental impact.

Another example of a socially conscious brand is the sports apparel and accessories company Nike, which views social responsibility as its core mission and philosophy of operation. The brand creates initiatives to support the development of amateur sports, helps beginners in football, running, tennis, and basketball. Throughout its history, Nike has quite often raised important social issues under its own Just Do It label. Back in 1994, the company launched a large-scale P.L.A.Y. project, which promoted an active and healthy lifestyle among teenagers. In 1995, the "If You Let Me Play" advertisement was released, which drew attention to women's rights in sports and gender equality. In the mid-90s, Nike released the first video on the issue of HIV and AIDS [23].

The company Nike has also not ignored the problems of the environment and reducing its negative impact on it. The company actively implements the Move to zero slogan and for the period 2025-2030 has committed to reducing greenhouse gas emissions by 0.5 million tons through increasing the use of environmentally friendly materials to 50% of all main materials: polyester, cotton, leather, and rubber; reducing

the consumption of fresh water per kilogram of textile dyeing and finishing by 25%; increasing the recycling of production waste back into Nike products and other goods by 80% [24].

McDonald's also views relationships and connections with the community as the foundation of its brand. As an integral part of society, the company strives to fulfill its corporate social responsibilities, build a sustainable community, and care for the environment and society [25]:

- McDonald's became the first restaurant group to participate in the Battery Recycling Program, providing convenient battery collection points in its extensive network of restaurants;
- Since 2012, McDonald's has been using highly efficient LED lighting, which has reduced CO<sub>2</sub> emissions by more than 2 million kg per year, equivalent to the total amount of carbon dioxide absorbed by approximately 90,000 trees each year;
- McDonald's restaurants use the MADE FOR YOU system, which helps minimize kitchen waste;
- McDonald's restaurants have reduced the use of plastic, in particular, replacing plastic cups and styrofoam containers with paper ones.

The McDonald's charity program in Ukraine, "Palm of Happiness," which the company has been running for over 20 years, deserves special attention. Every year on June 1, the company organizes the sale of paper "Palms of Happiness" in all its restaurants operating in Ukraine. The money is directed to support children's hospitals, and in particular to the development of Family Rooms and family-oriented medicine in Ukraine. In 2023, McDonald's in Ukraine transferred 18.6 million hryvnia, which was raised from the sale of "Palms of Happiness" and Apple Pie [26].

A large number of Ukrainian companies also see their mission as caring for the social well-being of individuals, communities, and society as a whole, and actively implement various initiatives under their brands. For example, OKKO GROUP (OKKO gas station network) cares about the comfort and accessibility of OKKO network services for its customers, including parents traveling with young children or people with disabilities. Therefore, since 2008, the company has been implementing a barrier-free program at its facilities. All new gas stations in the network are designed and built in compliance with these standards.

Since 2014, used things have been collected at OKKO gas stations for low-income citizens. At the beginning of 2022, 29 special containers were installed at the company's gas stations in 7 cities of Ukraine: Lviv, Kyiv, Odesa, Dnipro, Kharkiv, Mariupol, and Zaporizhzhia. With the beginning of a full-scale war, the geography of the project changed [27].

Every year, the company chooses a new topical issue on which it focuses the attention of all road users. For example, in 2019, OKKO urged drivers and pedestrians to refrain from using smartphones and other gadgets while driving. Customers of gas stations passed a specially developed VR test. The project involved 3.9 million Ukrainians. In 2020, "OKKO" was included in the list of the fifteen best CSR projects. Experts noted the company's experience in implementing the national project "Please, live! Road safety".

The company's environmental policy is aimed at minimizing emissions and other types of air, water, and land pollution; implementing practices for the efficient use of energy and other natural resources; and forming environmental awareness among employees, customers, and B2B partners [28].

Social responsibility is a key component of the strategy of the international food and agrotechnology company MHP ("Myronivskyi Hliboprodukt"). The company actively supports local communities through various charitable programs, including its own MHP Charity Fund - GROMADI. Support is focused on key areas such as education, cultural initiatives, social assistance, and environmental projects aimed at preserving natural resources and reducing the impact on the environment.

In 2020, MHP initiated a donor movement, collaborating with the public organization "DonorUA". The company became the largest corporate team that donates blood through the DonorUA for Teams platform and received an award from the organization for this achievement [29].

The implementation of socially responsible initiatives under the auspices of the company has become a positive trend in Ukrainian business. Numerous companies support, finance, and assist, forming their own positive image and attracting the attention of partners, consumers, and investors.

For example, the EVA store chain - the largest national network of beauty and health stores - annually organizes the "ORANGE DAYS IN EVA!" campaign to help premature babies. This project brought the company victory in the competition initiated by the UN in Ukraine, the Partnership for Sustainability Award in 2018-2020. Over 5 years of the project's existence, the company managed to collect more than 1.2 million hryvnia and transfer new equipment to 11 perinatal centers and children's hospitals in Ukraine. Kyivstar, together with the International Charitable Foundation "Ukrainian Charity Exchange" (UCF), launched its own SMS charity initiative "Children's Hope" in December 2018, aimed at providing children's oncology and cardiology dispensaries with modern equipment, medical consumables, and instruments. Nestlé, since 2016, has been actively supporting initiatives related to the development of canistherapy in Ukraine (a method of rehabilitation for children with various developmental disabilities using specially trained therapy dogs). The IT company EPAM in 2015 began investing in the intellectual potential of schoolchildren with the Ekids program. Since mid-2018,

the social initiative has been expanded to include children from orphanages and children's homes [30].

Thus, socially responsible marketing programs have become an integral part of the business and CSR strategy of conscious Ukrainian and foreign companies that saw their future in the further development of society and wanted to remain on the market. SRM projects covered various goals and directions, but the goal united everyone - to make the world around better and kinder, to make life easier for those in dire need, to support education, culture, science, and preserve nature.

However, Russia's war against Ukraine changed everything. The full-scale invasion of Ukraine by Russia in February 2022 caused an unprecedented shock to the country's economy and society, including the CSR sphere. The war has significantly changed the context of CSR in Ukraine, creating both numerous new challenges and opening up new opportunities for development. The priorities and focus of both CSR in general and SRM have changed dramatically and simultaneously.

Since the beginning of the war in Ukraine, enterprises have been actively involved in solving social problems, such as helping victims, restoring infrastructure, and supporting local communities. In the period from February 24 to December 31, 2022, most efforts were directed towards ensuring the safety of employees, supporting the combat readiness of the Armed Forces of Ukraine, and supporting the community. It was CSR that became a means of overcoming numerous challenges caused by the war. In particular, part of the Ukrainian business, in response to the military threats, not only continued to work, taking care of its employees, but also provided assistance to local communities, the army, territorial defense, and internally displaced persons. There was an unprecedented consolidation of businesses around the goals of victory, which was manifested in contributing to the provision of the Armed Forces of Ukraine, helping internally displaced persons, Ukrainians who found themselves in difficult life circumstances (in particular, those who suffered damage caused by hostilities, enemy terrorist acts, temporary occupation). On the other hand, the war has influenced consumer preferences, forming new ethical standards and requirements for business responsibility. Consumers have become more demanding, which has necessitated a rethinking of company strategies. The role of social media and public control has increased, which has affected the transparency of doing business, forcing it to be more accountable for its actions than before. In the conditions of war, elements of CSR, such as social justice, human rights support, sustainable development, and SRM, have acquired special significance. In particular, SRM during wartime has become sensitive and attentive to the needs of society, perceiving challenges and providing real assistance where it is most needed.

It is precisely the division of the modern history and real life of Ukrainians into the pre-war period and existence in wartime conditions that necessitates the study of

the implementation of SRM at these two different stages of the Ukrainian economy and the determination of its relevance for uniting business, the state, and the population, overcoming the enemy and achieving victory, restoring everything destroyed.

SRM during the war manifested in forms that significantly differed from pre-war ones and, for the most part, were aimed at supporting the Armed Forces of Ukraine, those affected by military aggression, and society as a whole with its new needs and values. The main directions of SRM since the beginning of the full-scale invasion can be highlighted as follows:

Ensuring combat readiness and assisting the Armed Forces of Ukraine. Ukrainian businesses provided the Armed Forces of Ukraine with material and humanitarian aid in the form of finances, vehicles (including armored cars), office equipment, first-aid kits, body armor, clothing and footwear, food, thermal blankets, hygiene products, etc.

Supporting victims, internally displaced persons, and refugees. Enterprises organized fundraising, provided free essential goods, organized free meals, transportation, etc., and also donated part of their profits to humanitarian needs.

Information campaigns - to inform the public about the importance of mutual support, peace, and unity; to raise patriotic spirit and motivation to resist the enemy; to provide general information about the state of affairs in the country, etc.

Social initiatives - to raise donations for the Armed Forces of Ukraine; implementation of programs to help refugees, veterans, and other vulnerable groups of the population adapt to new conditions, recover, rehabilitate, find employment, etc.

Supporting the national economy. Implementation of initiatives by enterprises to pay taxes in advance to fill the state budget, exit the shadow economy, etc. In wartime, it is important for consumers to support local producers and entrepreneurs, use their products and services.

Supporting ethical brands. Companies openly severed economic relations with Russian enterprises and closed production facilities in the aggressor country. Businesses made decisions in favor of honest practices and refused to cooperate with companies that support aggression or military actions. Consumers were able to choose products of those companies that expressed an anti-Russian position and not buy goods from the aggressor country and companies that continue to do business in Russia.

Environmental responsibility is manifested in supporting environmental initiatives during the war; helping the population affected by environmental disasters (blowing up the Kakhovka HPP); demining territories; financing and conducting environmental assessments in territories affected by hostilities; rescuing animals (wild and domestic) in areas of hostilities, etc.

Before the full-scale invasion of Russia, Ukrainian enterprises demonstrated significant progress in implementing CSR, focusing on sustainable development, environmental management, various social programs, and philanthropy. Accordingly,



the concept of SRM also developed in similar directions as a basic component of CSR practices of enterprises. However, since the beginning of the war, a significant transformation in approaches to CSR in general and SRM, in particular, has been observed. The conditions of wartime forced enterprises to focus their efforts on supporting the country's defense capability, helping victims, and developing initiatives aimed at restoring the country's economy and individual communities. This shift in focus demonstrated the adaptability of business to extreme circumstances and the need to rethink social obligations in the context of new challenges.

On the other hand, the war has influenced consumer preferences, formed new ethical standards and demand for business responsibility. Consumers have become more demanding of the goods and brands they offer, necessitating a rethinking of companies' marketing strategies and business ethics. The role of social media and public control has increased, contributing to greater business transparency, forcing companies to be more accountable for their actions than before.

Thus, the war has become a test for the CSR of Ukrainian enterprises, underlining its importance in times of crisis but also demonstrating its ability to adapt to new realities. The difference in the manifestation of SRM of Ukrainian enterprises before the war and during the war is characterized not only by a change in priorities and directions but also by an increased readiness of businesses to act transparently and in the interests of society in the conditions of a military crisis, in order to ensure their own competitiveness and social reputation in difficult circumstances.

The most active Ukrainian companies in implementing CSR practices during the war were included in the CSR Index 2023, which was researched and calculated by the organization CSR Ukraine, the Center for CSR Development, together with The Page. The leaders of the CSR Index 2023 were Nova Poshta, PJSC Kyivstar, EPAM Ukraine, Infopulse, and Sense Bank. The average score of the CSR Index 2023 was 60 points. Nova Poshta, as the leader of the rating, received 92 points [31]. The main components of CSR practices that were evaluated were:

1. Business continuity and tax payments.
2. Employee safety.
3. Combat readiness.
4. Unity.
5. Community support.

Almost all companies that participated in the study provide assistance to the Armed Forces of Ukraine, support their employees who are fighting. 23 companies maintain their salaries, 17 provide military equipment. 16 out of 30 companies have started implementing reintegration or support programs for veterans among the staff. 13 out of 30 companies have started implementing programs/measures to support veterans at the national level. 25 out of 30 companies have relocated employees with

their families to safe regions, provided material and psychological assistance to employees, and organized transfers and accommodation. 21 companies have experience uniting with competitors in implementing projects during the war. 14 out of 30 companies support contractors and partners.

The study revealed that all CSR activities during the war are directly implemented within the framework of SRM: they cover a wide range of stakeholders, influence consumer behavior, affect the company's reputation, determine its competitiveness in the market, incline consumers, clients, and customers to cooperate, expand communication channels, make business transparent and open, etc. SRM has not only adapted to new conditions but also plays a critically important role in building trust between business and society. In times of war, when society faces numerous challenges such as humanitarian and economic crises, social inequality, and environmental threats, enterprises get a unique opportunity not only to demonstrate their responsibility but also to significantly influence the restoration of the national economy and the moral spirit of the population.

In the context of studying SRM during wartime, it is essential to consider the crucial communication tool – advertising. Socially responsible advertising is an integral component of responsible marketing and, as an element of mass communication, exerts a powerful influence on people's cultural and socio-psychological values, their attitudes, behavioral patterns, and worldview [32].

Bugaiova, O. defines social advertising as "an informational phenomenon and a crucial tool in shaping a civilized society. It allows us to outline societal problems and define ways to solve them" [33].

Modern social advertising in Ukraine has acquired new content and external stylistic features. Social advertising is a specific type of non-commercial information, the action and impact of which are aimed at achieving certain social goals by the state, executive authorities, businesses, and society. It significantly contributes to the socialization of modern individuals, offering them specific models: "socialization through prohibition," "socialization through alternative," and "socialization through imitation" [34]. The objective of social advertising is to draw society's attention to a particular social phenomenon, often negative; to encourage recipients not only to deeply understand the problem but also to change stereotypes of personal behavior, the behavioral model of society as a whole [35].

During wartime, social advertising, with its powerful potential, has become an integral part of communication, transmitting vital messages, responding to the pressing needs of society, and motivating action. It has emerged as a tool capable of uniting people in their fight for victory and peace. In wartime, when the lives of many people are shattered in an instant, social advertising does not simply inform but creates a space for empathy and recovery. It calls for humanity, emphasizes the importance of

supporting one another, and reminds us of the shared values that shape the identity of the Ukrainian nation. Through social advertising, people have the opportunity to feel part of a larger and important process where everyone can contribute to the restoration of their country and the dignity of human life.

In Ukraine, the trend of shifting focus in advertising communication towards socially significant themes was developing even before the full-scale war. However, the brutal invasion of the country stimulated an active transition of brands towards social responsibility and corresponding communications [36,37].

SRM and social advertising are complementary concepts that, together, can contribute to achieving socially beneficial goals for society. Companies use social advertising to promote initiatives and programs, communicating about their efforts in tackling social issues. Brands implementing SRM can build their image and enhance the appeal of their products through social advertising, which, in turn, leads to increased sales and strengthens their market position. At the same time, social advertising benefits from the participation of brands with a solid reputation in the field of social responsibility.

The main participants in the modern Ukrainian social advertising market are state institutions, public organizations, business structures, and religious confessions. Using social advertising as one of the tools of social policy, participants not only outline the scale and significance of the identified social problem but also create an image of their participation in its solution [38].

The defining goal of social advertising is to change people's views and attitudes towards a particular problem, to prevent the occurrence and spread of the problem, to prevent it, and in the future - to form new correct social values and skills [39]. Social advertising becomes a kind of regulator of society, a way to positively adjust the situation. In wartime, this became especially relevant, as the war and its consequences caused a surge of social problems in Ukrainian society, and solutions and resources for this had to be found immediately [40].

In the difficult conditions of the present-day Ukraine, social advertising has undergone significant changes, which primarily manifested in the appearance of advertising on patriotic-military themes aimed at drawing attention to the Ukrainian army, its needs, role, and importance in society, increasing the level of patriotism in the country, as well as understanding the role of national unity in overcoming the enemy. In such a difficult period for the state, social advertising has become an integral part of propaganda [41]. In fact, during the full-scale war in Ukraine, social advertising has acquired the features of "social-patriotic" and differs significantly from peacetime social advertising in form and content.

Unlike commercial and political advertising in peacetime, social advertising does not have the task of overcoming competition, creating an attractive image of a product

or politician, rather the main task is to notify, inform and remind about the rules of careful behavior. To remind about the daily feat of the military and volunteers [42].

Since the beginning of the full-scale armed aggression of Russia against Ukraine on February 24, 2022, and the introduction of martial law in the country, social advertising has instantly responded to new challenges. Outdoor advertising operators began to provide large-scale support to patriotic forces. From the very first days, plots gained popularity that gave a clear understanding to the occupiers that they were not welcome in Ukraine ("Putin lost. The whole world is with Ukraine! Russian soldier, leave without blood on your hands," "Russian soldier! Instead of flowers, bullets await you. Leave!" etc.), then there was a wave of support for occupied cities and the Armed Forces of Ukraine ("Kherson is Ukraine," "We are on our land! Truth and victory are on our side!"), calls to close the sky over Ukraine, thanks to brave soldiers of the Armed Forces of Ukraine, the need to rescue pets from the war zone, the need to comply with safety regulations, etc. [43].

Despite the passage of time and the excessive duration of the war in Ukraine, social advertising has not lost its relevance and is actively developing throughout the country.

Since the beginning of 2022, social advertising for the state portal "Children of War" has been launched, which publishes up-to-date information about victims and accepts requests to search for a child or information about their whereabouts.

Military personnel have become an important topic of social advertising. In August 2022, the Ukrainian Veterans Fund launched an information campaign called "I am a Veteran." Billboards and citylights with photos of Ukrainian defenders appeared on Ukrainian streets. This social campaign aimed to change society's perception that veterans are only elderly people in orders and medals. At the end of 2022, the "United" social advertising campaign was launched in Ukraine. It was launched by the Armed Forces of Ukraine together with the "Return Alive" foundation, the media "The Ukrainians" and the company "BigMedia" to demonstrate the strength and unity of the Ukrainian nation. The heroes of the campaign were three military personnel [44]. At the beginning of 2023, social advertising with Ukrainian veterans appeared on the streets of Ukrainian cities with respect for everyone who makes Ukraine stronger. The project "Veterans are Different. Victory is One" was initiated by the Ukrainian Veterans Fund to remind about respect, non-discrimination, and equality among defenders of Ukraine, regardless of their gender, age, ethnicity, or sexual orientation [45].

To popularize service in the Armed Forces of Ukraine, social advertising calling for joining the ranks of the Armed Forces of Ukraine, individual assault brigades, and signing up for recruitment centers has been placed on advertising spaces throughout

the country. Such patriotic slogans have inspired many Ukrainians to join the ranks of defenders of the Motherland and fight the enemy.

A separate group of advertisements is inspiring to victory. Social advertising with faith in victory has become a powerful tool for stimulating moral support for the population in wartime, provided people with an emotional charge and contributed to increasing motivation and belief in their own abilities [46].

In addition to caring for civilians, another idea of social advertising was the rescue of animals from war zones. For example, the animal welfare organization "UAnimals" released a social advertisement featuring Ukrainian soldiers who, on their positions, do not forget about humanity and save the lives of not only people but also animals. Its slogan: "You can judge a nation's development by how it treats animals." The advertisement was dedicated to how, during the war, millions of Ukrainians are ready to save not only people but also animals, when Russian missiles destroy everything living in their path [47].

Thus, social advertising as a tool of SRM has a powerful impact on society, shaping its behavior and public opinion in wartime, supporting and motivating for victory, drawing attention to pressing social issues, and activating their solution.

Socially Responsible Marketing (SRM) is a voluntary business strategy that adapts traditional marketing tools to address social issues, provide assistance to the community and the state, and achieve both commercial and social well-being.

SRM has become an integral component of contemporary business, distinguished by its long-term perspective, transparency, and integration into all business aspects, thereby creating value for both businesses and society. It fosters a positive company image, strengthens consumer trust, and enhances loyalty.

The foundational principles of SRM include: strategic responsibility, accountability for messaging, social responsibility, commitment to performance, responsibility in employee selection and recruitment, environmental responsibility, and return on investment responsibility. Adherence to these principles harmonizes the objectives of companies, society, and consumers, yielding numerous benefits for all stakeholders.

SRM encompasses a broad spectrum of practices that contribute positively to society and the environment, such as: brand social responsibility, social initiative implementation, partnerships with non-governmental organizations, open and transparent customer communication, promotion of responsible consumerism, fostering inclusivity and diversity, and ethical marketing.

Illustrative examples of companies successfully implementing SRM include Starbucks, which makes a positive impact on every community it serves; Nike, where social responsibility is a core mission and philosophy; McDonald's, which prioritizes relationships and connections with the community; OKKO Group, a gas station

network committed to customer comfort and accessibility; and MHP (Myronivskyi Hliboprodukt), where social responsibility is a key strategic component.

SRM plays an especially crucial role during wartime, enabling businesses to demonstrate their social responsibility and contribute to the nation's recovery.

Prior to the full-scale invasion, SRM was already actively implemented in Ukraine. However, the war necessitated new forms and content for social marketing due to the significant challenges faced by society and the state. Since the war's onset, Ukrainian businesses have been actively addressing social issues such as aiding victims, restoring infrastructure, supporting local communities, providing for the Armed Forces, and assisting internally displaced persons.

Research has shown that all CSR activities during the war are directly aligned with SRM, encompassing a wide range of stakeholders, influencing consumer behavior, enhancing company reputation, and bolstering market competitiveness. It also fosters collaboration with consumers, clients, and suppliers, promotes transparency, and opens up new communication channels. However, the war has presented certain challenges to SRM implementation, including a decline in purchasing power, shifting consumer priorities, and the need to adapt marketing strategies to new realities, as well as the emergence of new ethical standards and business accountability requirements.

Social advertising has emerged as a crucial tool within SRM and a vital component of mass communication during the war. Patriotic-military advertising has gained prominence, drawing attention to the Ukrainian military, its needs, and its pivotal role in society, fostering patriotism, and emphasizing the importance of national unity in overcoming the enemy. The impact of social advertising on consumer behavior and public opinion demonstrates that socially responsible companies gain competitive advantages and customer loyalty.

Thus, this research underscores that SRM is not merely a trend but a strategic imperative during wartime. It serves as an essential tool for Ukrainian businesses, enabling them to strengthen their brand image, enhance customer loyalty, contribute to social development, and foster societal cohesion. The active implementation of SRM principles during wartime is crucial for socio-economic recovery, building societal resilience, and bolstering the morale and solidarity of the population. Integrating SRM practices into business strategies, especially for those seeking both commercial success and social progress, is vital for their continued growth and development in the national market.

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# **NEGATIVE IMPACT ON THE ENVIRONMENT AWARENESS AS AN FACTOR OF INCREASING YOUNG PEOPLE ENVIRONMENTAL CONSCIOUSNESS**

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The foreign experience of socio-ecological planning and management demonstrates examples of successful cooperation between the local community and the state with the participation of civil society representatives, who identify themselves as a globalist community that shares the values of preserving the planet ecological well-being, trying to protect and promote them.

Sweden is considered one of the most environmentally conscious countries in Europe. The ecological thinking of society in this country is formed from kindergarten. From an early age, the smallest members of society are taught how to care for nature, sort waste, save water and electricity. Children know about modern environmental problems, the state of nature in their country and abroad, which allows them to develop a high level of environmental awareness and the ability to take actions to preserve the environment.

The combination of ecological consciousness elements forms the general ecological consciousness level, which will first of all depend on knowledge, then on the assessment and dependence of "human-nature" awareness, and the final link will be readiness for decisive actions to minimize the negative impact on the environment. Regarding the peculiarities of environmental consciousness formation of the population, it is advisable to single out the main impact sources:

- the personal experience impact on the formation of environmental consciousness elements;
- the activities impact of non-governmental organizations on the environmental awareness development;
- mass media and social networks impact;
- the state impact on the environmental awareness development:
  1. Implementation of education and enlightenment measures.
  2. Behavior rules acceptance, restrictions, prohibitions, responsibility establishment, permit procedures

### 3. Infrastructure creation.

It is expedient to single out the essence of a person's ecological consciousness through its structure, which is formed on the basis of three elements combination: cognitive, emotional (affective) and (emotional), behavioral (conative) (Fig. 1).

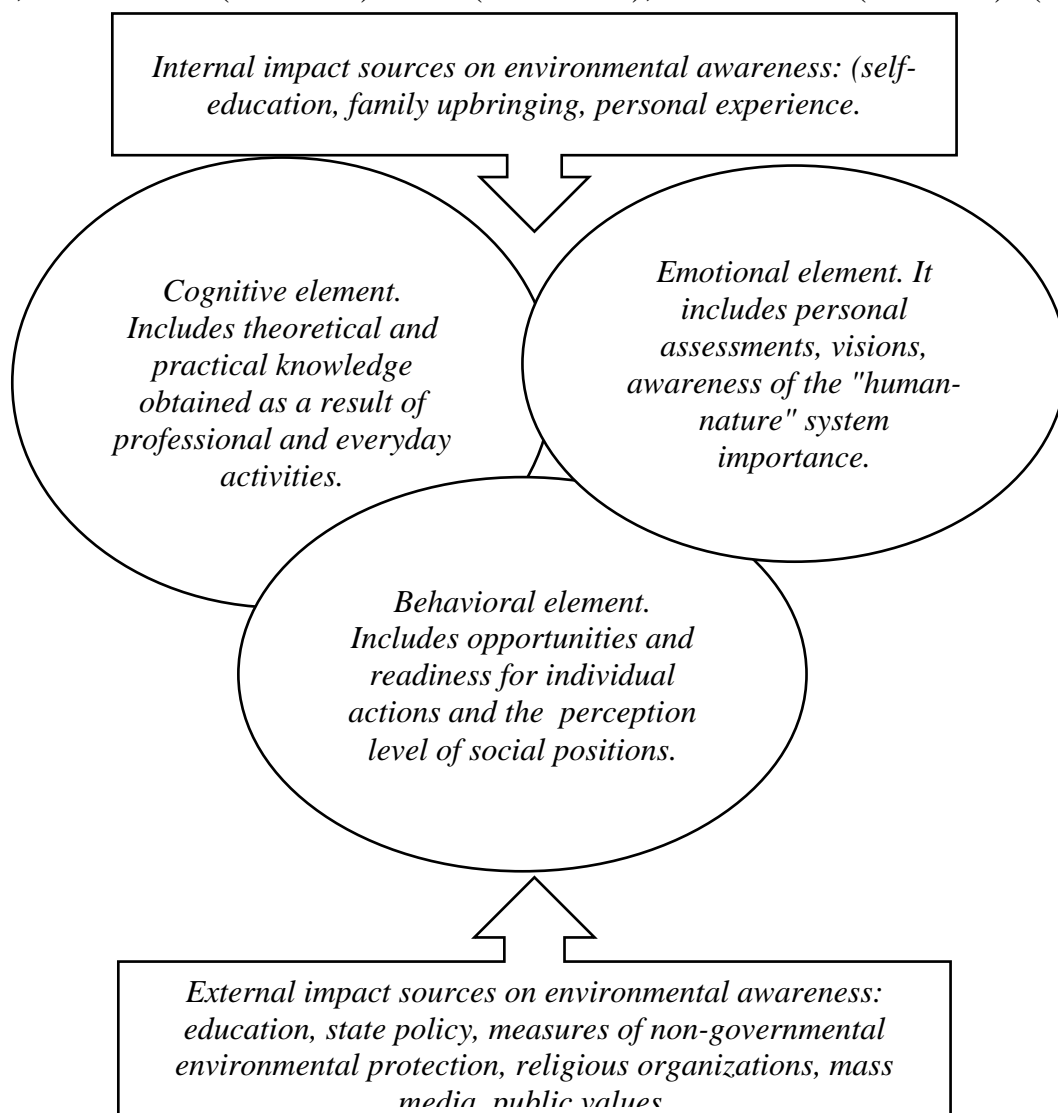


Fig. 1. Impact sources and elements combination of human ecological consciousness

*Source: authors' own development based on [1]*

The environmental consciousness of Ukrainian population is quite controversial. On the one hand, our population believes that the state of the environment has an impact on their life and health, they also recognize the existence of numerous priority environmental problems, and express their deep concern about the rapid deterioration environmental state. On the other hand, the majority does not take part in the damage prevention and environment preservation, or they commit those actions that cause damage to the environment. And although the number of eco-activists has increased in recent years, their share in society is still not significant compared to the increase in the number of Ukrainians, for whom economic growth is a priority, even at the environment cost. That is, the value attitude towards the environment, which

Ukrainians verbally declare, for the most part does not correlate with their real actions and readiness for actions to preserve the environment. That is why Ukraine faces the problem of strengthening environmental awareness with all available tools at the state and local levels.

The author N. Kuts determines that the level and type of persons' environmental consciousness affects his behavior in relation to the environment, the actions choice that can harm the environment, or those that minimize negative environmental impact. Therefore, the environment state depends on the level and type of population environmental awareness. In order to increase Ukrainians environmental awareness level and to form a valuable attitude towards the environment, it is necessary to implement legislative, institutional, and budgetary solutions: to initiate systematic sociological studies of Ukrainians environmental awareness state, to develop an actual concept of continuous environmental education and enlightenment of all categories and population strata, to lay down funds in the budget for implementation of these measures, attract international financial assistance, public-private partnership mechanisms, disseminate information with legislation explanations, implementing environmental regulations methods [1].

The authors M. Tomchuk and S. Tomchuk in the scientific study "Environmental awareness development of students through informational tools" note the importance of creating a of environmental education system and its consolidation as state environmental policy basis as a constitutional norm with the information technology tools use. Institutions of higher education graduates, namely, they have the future of our people, after consolidating basic environmental education skills, they must have a high level of environmental culture, which is, in turn, a component of general human culture, and professionally approach the solution of environmental problems from their profession position [2].

The author O. V. Strilchuk in the scientific article used a research method widely used in environmental psychology - a case control tool, followed by a theoretical comparison of the identified features of citizens environmental consciousness with different levels of territorial identification in each regional units selected for analysis. As a research result, the author notes that the cause of the unfavorable environmental situation in Ukraine is the historical, political and socio-psychological background. In Ukraine, there was still a constant disconnection of the population with its ethnic, cultural and territorial heritage, which prevented the formation of a single national community, one of the key identities of which is the land and its value [3].

A historical review of environmental education and consciousness was conducted development by the author C. Peterson. In his article, the scientist believes that environmental education is an ideal way of integrating several academic fields,

promoting the intellectual and social development of young people and changing their behavior in the environmental protection direction [4].

The author T. Schlossberg, with her research described in the book "Inconspicuous Consumption: The Environmental Impact You Don't Know You Have", aims to increase the environmental awareness of mankind by acquainting them with the inconspicuous impact of their actions and deeds on the environment. In her opinion, climate change is not just a remote problem of the natural world caused by the fossil fuel industry, but is created in our society, which is focused on convenience and comfort. Solving the natural problems of humanity is possible through a change in the population daily habits, through a change in their environmental consciousness in the population direction [5].

Investigating foreign and domestic scientific and practical research in which the problem solution of environmental awareness formation was initiated and on which the authors rely, we singled out the unresolved parts of the general problem in the environmental awareness context of the professional direction and the consequences of low environmental awareness among future specialists.

On the theoretical and methodological conducted analysis basis of the domestic and foreign scientists views regarding the importance of environmental awareness in society, as well as the determination of the elements and features combination for environmental awareness formation, we determined the feasibility a marketing research on the environmental awareness level among future specialists in the management and marketing field. Marketing research was conducted within the Erasmus+ Jean Monnet Modules program and the project: "Dissemination of EU practices through e-marketing, conscious consumption, circular economy, resource efficiency". Marketing research was carried out on the Lviv Polytechnic National University basis, in which 220 students participated. The ethical rights of all participants were respected. The marketing research was conducted in the educational process natural conditions of a higher education institution with the general conditions provision for participation in the survey through a questionnaire and with the Google Forms help. The survey results were obtained with the general conditions provision for participation in the study: uniform the questionnaire questions, the same duration, the same measuring technologies and the results formation, which made it possible to diagnose the environmental awareness level and readiness to increase it. After the obtained results, it is also advisable to compare the environmental awareness level of the young Ukrainian generation with Europeans based on publicly available results of similar marketing research.

According to the World Health Organization, human impact on the environment continues to grow, leading to disease, affecting quality of life, reducing productivity

and becoming an additional burden on the health care system. Yes, known avoidable environmental health risks cause at least 12.6 million deaths worldwide each year [6].

It is known that under the environment impact, changes (mutations) can occur in the human body and are inherited. The constant environment deterioration can ultimately lead to a decrease in the protective properties of the body, which will cease to resist various diseases.

Human has long considered the surrounding natural environment mainly as a source of raw materials (resources) necessary to meet his needs. At the same time, a large part of the resources taken from nature is returned to nature in the waste form. This is how the modern economic development model works, and it has a devastating negative impact on the environment, so it should definitely pay more attention to the analysis of the elements and ways that have this negative impact. In fig. 2 shows the main global sources of environmental pollution and it shows that the largest share of 24% is domestic pollution, which is carried out by each individual. Other pollution types sources belong to individual economy branches, but the greatest influence is still exerted by mankind [7].

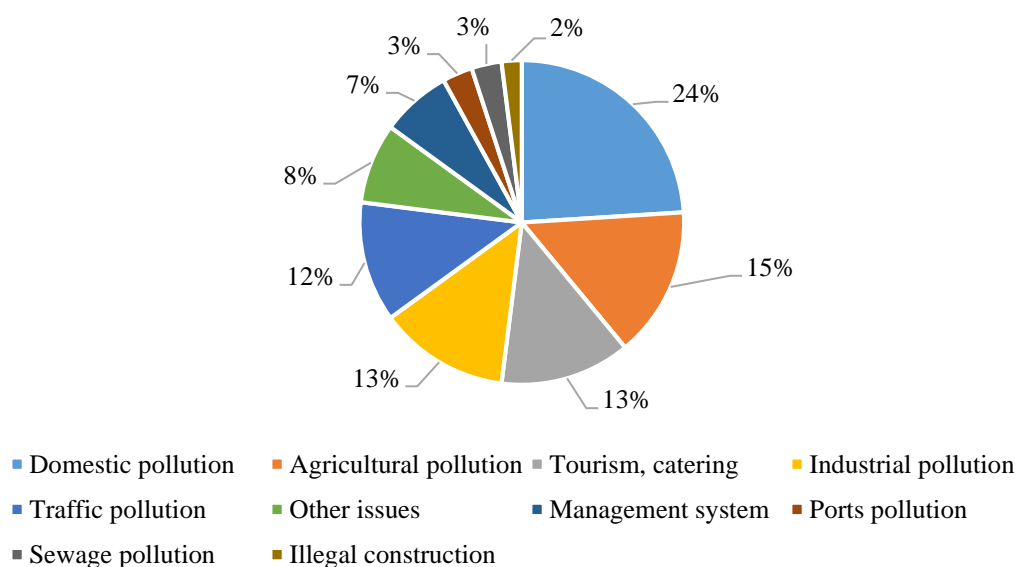


Fig. 2. Main sources of global environment pollution

Source: [7]

People all over the world are taking certain measures to reduce harmful industrial emissions into the environment, but this is still not enough. Each person should take care of the environment and their own health. Modern comfortable housing, warm clothes, transport, and other benefits of civilization have reduced the impact of natural factors on the human body, but reduced its resistance to their unexpected changes. Caring for the environment begins with one's own house, street, park, etc. It is necessary to change one's consumerist, aggressive attitude towards nature, replace it with care for the environment preservation [8].

In addition to all known factors of the greatest pollution and negative impact on the environment, today Ukraine has an extremely difficult ecological situation due to the aggressor's third year of war. As a result, the country receives colossal environmental losses and negative results such as: impact on the landscape and settlements; biodiversity loss and threat to red-listed species; fires in ecosystems due to war; chemical pollution from shelling and rockets; soil and sea pollution by oil products; consequences of fires at industrial facilities, wastewater in the Dnipro and other reservoirs [9].

Ye. Aratovska, the NGO "Ukraine without garbage" founder, believes that taking care of the environment is now a duty for people who do not protect the integrity of the country at the front. "Because it's about our culture, guidelines and respect. Attention to common space, attention to each other, protection of each other's rights indicate that we have democratic-European values." Ukraine is losing ground today: large areas are mined or contaminated with heavy metals from shelling. That is, the country territory is noticeably decreasing, and part of the land is also being diverted to landfills. A mass educational campaign is mandatory at the national level to raise Ukrainians awareness to form good habits [10].

After the war, the country will face the hostilities consequences - the ecosystems destruction, soil pollution, a decrease in biodiversity, and an increase in the number of pests in forests. In addition, in the future, the reconstruction of the country will require a significant amount of natural resources. Another problem is the fulfillment of the climate goals set for Ukraine, since war is a negative contribution to climate change, and further country recovery will inevitably be accompanied by significant greenhouse gases emissions. In turn, significant chemical soil and water pollution is expected, so it is very important to take care of an effective system of environment state monitoring after the war. The monitoring system should record the real environmental damage volume and also allow the most effective measures to be taken to avoid further deterioration of the situation. It is important that the state and all its relevant institutions, as well as citizens of the country, should play a role in this process. This is confirmed by the student survey results conducted at Lviv Polytechnic University, in which students noted that solving environmental problems and climate change should be initiated by the state and citizens - more than 90% of responses (Fig. 3).

Currently, the Ministry of the Environment, civil society and Verkhovna Rada environmental committee activity is very important, so that all damage to the environment is recorded as much as possible and in the future compensated by the aggressor. It is also important that Ukraine's reconstruction plan includes measures to restore and preserve ecosystems, as well as nature-oriented solutions and measures to adapt to climate change [9].



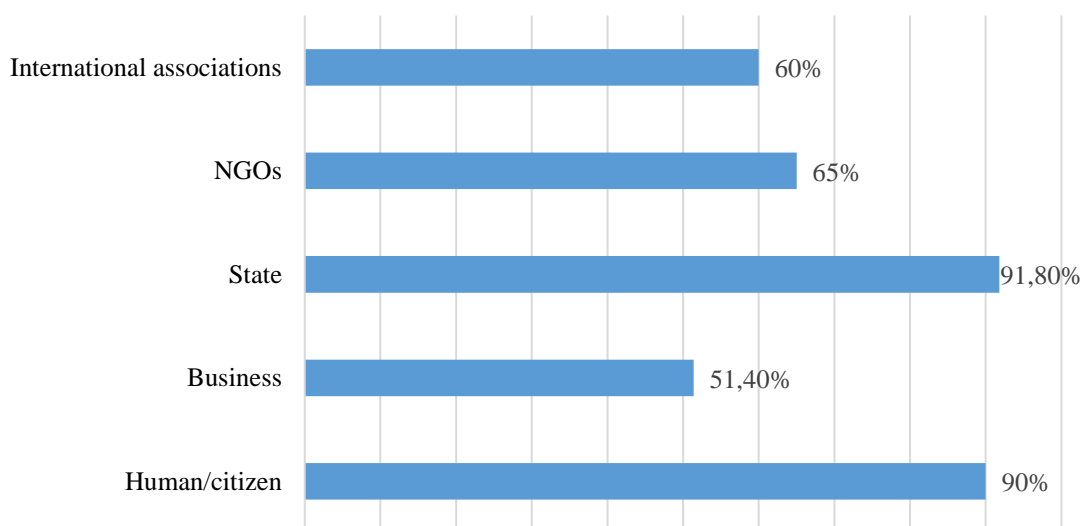


Fig. 3. Initiator of environmental problems and climate change solutions

An inevitable problem for Ukraine is the significantly lower environmental population awareness compared to European countries. Ecological awareness is an individual and collective (social) ability to realize the inseparable connection of each individual person and all humanity in general with the integrity and relative immutability of the human existence natural environment, awareness need to use this understanding in practical activities, the ability and acting habit in relation to nature, not disrupting the connection and natural environment circulation, contribute to their improvement for the life of current and future generations [11].

As a research result, analysts from CEDOS determined that Ukrainians consider the level of culture, indifference and low awareness to be the main causes of environmental problems. They also noted the excessive consumption problem due to the desire to have everything and to spare and emphasized the need to promote environmentally conscious behavior. This is influenced by the environment and the popularity of certain practices among acquaintances. Respondents who regularly see examples of environmental actions among familiar or famous people are more open to change [12].

The global survey results of consumers in 23 countries conducted by the Mastercard company on their environmental awareness subject showed quite high indicators of understanding their impact on the environment (Fig. 4).

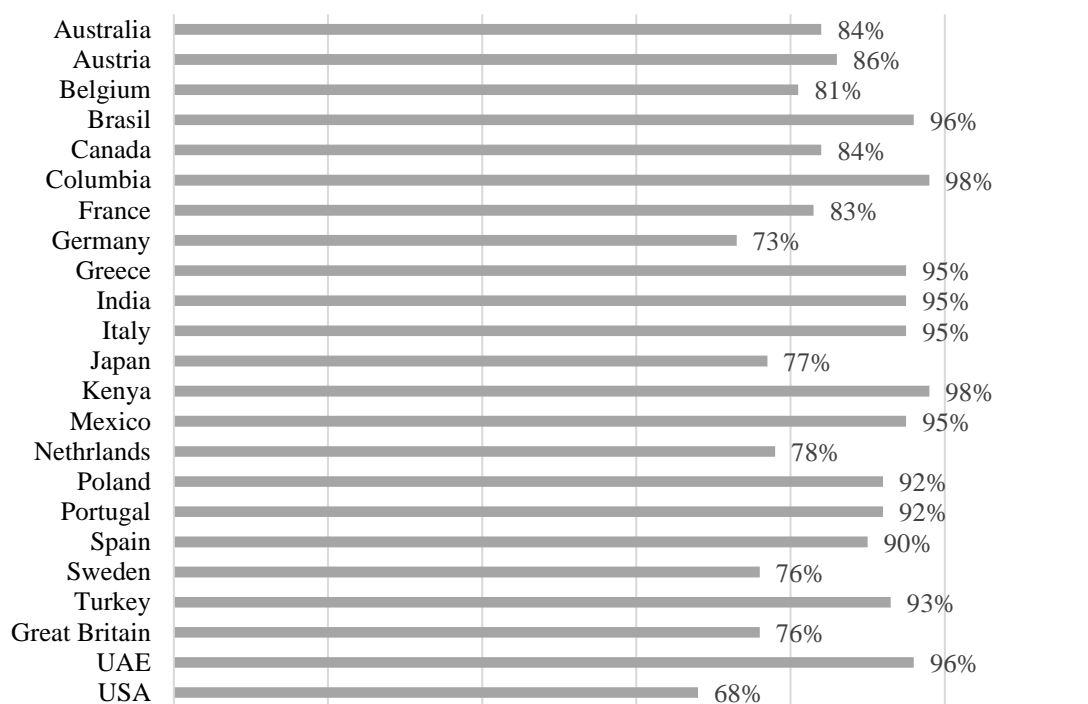


Fig. 4. Environment awareness of respondents about their impact

Source: [13]

Research conducted by the Ukrainian research agency Gradus Research among 50,000 Ukrainians aged 18-60 on their actions in solving environmental problems showed that they are the least active in providing resources/funds, but more than 60% of them research information about rational resource use and conscious consumption (Fig. 5).

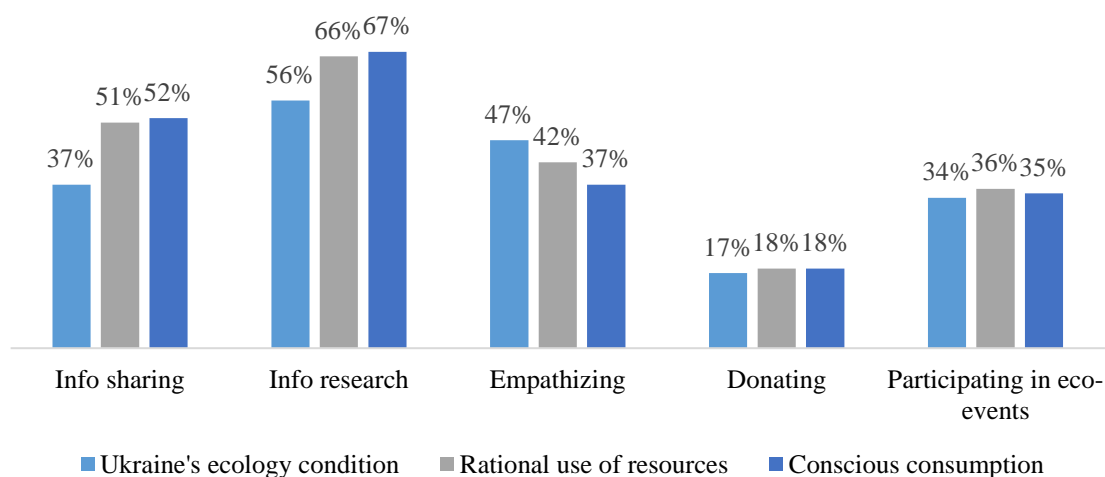


Рис. 5. Ukrainians actions in solving environmental problems

Source: [14]

In mass media, online publications and other information public sources, the negative environment state is often associated with the low environmental awareness of Ukrainians. During the students survey in Lviv Polytechnic National University,

data was obtained about the main information sources from where they get information about environmental problems, initiatives and environmental impact. Undoubtedly, the interviewee belongs to the generation Z representatives, which draws all information from the Internet and social media (98.2%), but the second place is occupied by the educational process (35%), which indicates the positive dynamics and prospects of environmental education in the environmental consciousness formation of Ukrainians ( Fig. 6).

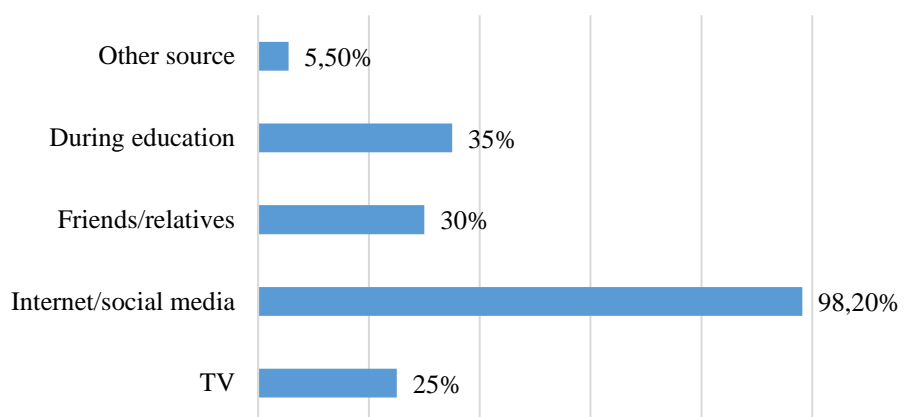


Fig. 6. Information sources from where is getting information about environmental problems, initiatives, impact on the environment

Moreover, almost 90% of surveyed students expressed a desire to learn new practices and initiatives of conscious consumption, resource efficiency during the educational process, which indicates their willingness to increase their environmental awareness and consciousness (Fig. 7).

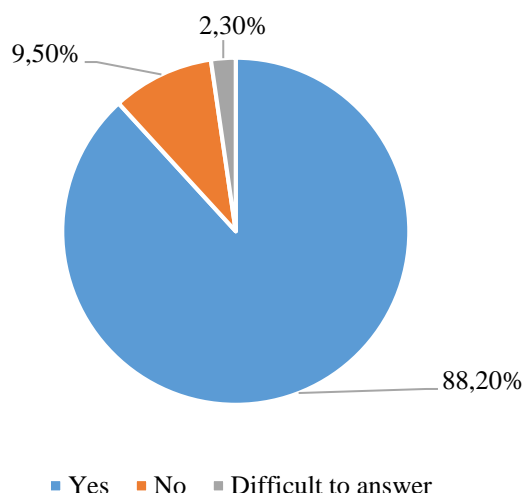


Fig. 7. Students' desire to learn new practices and initiatives of conscious consumption, resource efficiency

Therefore, Ukraine should continue to raise the populations' environmental awareness through various educational programs, tools and environmental measures.

It should be noted that in order for the increasing policy of the population environmental awareness to be effective, it is necessary to take into account the structure, components and features of the environmental awareness formation among the Ukrainian population.

In this study, we proposed a two-vector concept of a person-individual + person-specialist impact on the environment: an individual who impacts through everyday personal processes and lifestyle; a specialist (professional) of a certain industry, who, through business processes, has a larger-scale impact on the environment (Fig. 8).

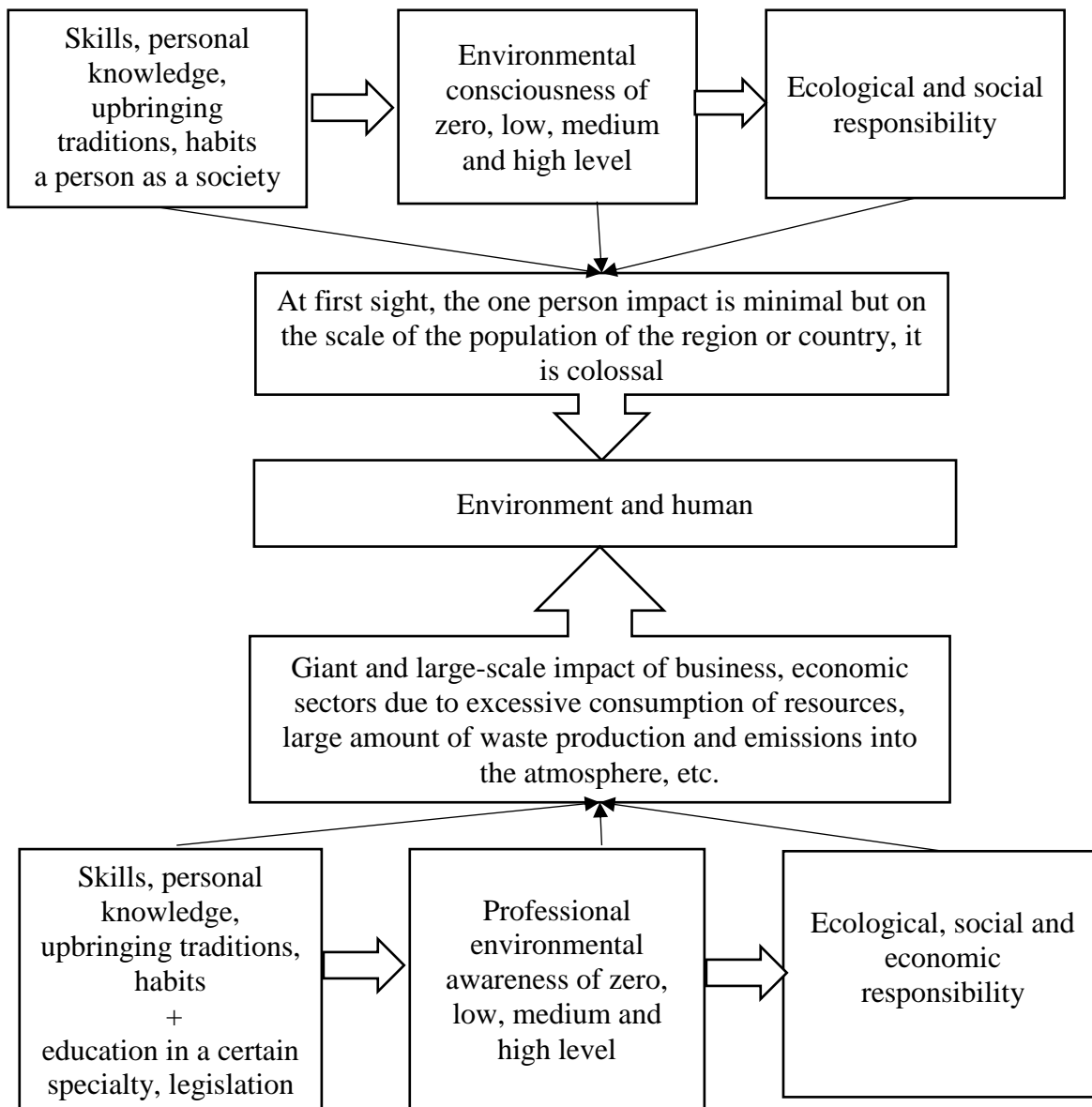


Fig. 8. Two-vector concept of impact on the environment

*Source: authors' own development*

If we examine the marketing field, then professionals in this field should possess the knowledge and skills of ecological marketing and form strategic directions of

business greening as a whole, using resource-saving technologies and forming environmental awareness among consumers.

After environmental awareness or, conversely, unconsciousness, environmental responsibility as an element of business social responsibility is interpreted differently by representatives of economic directions. According to the classical approach, environmental responsibility arose under the impact of environmental legislation: in order to avoid sanctions, enterprises were forced to revise their environmental policy and take measures to reduce the negative impact of their activities on the environment. According to the neoclassical approach, environmental responsibility is a consequence not only of regulatory and legal restrictions, but also of the producers moral responsibility for causing damage to nature. The sustainable development concept is an organic synthesis of classical and neoclassical approaches, combines limitations established by environmental legislation and moral obligations of business representatives. Today, environmental responsibility ceases to be something coercive, it turns into internal business rules [15, c. 44].

Increasing the process effectiveness of forming environmental awareness is possible through the content harmonization, the personal-oriented interactive methods introduction of environmental education and upbringing, aimed at the motivational value and behavioral-activity components formation of environmental awareness and behavior. Modern environmental education of future specialists in marketing and management is a continuous complex process of forming an ecological outlook, ecological consciousness and culture of all population strata, social groups and business environment and society as a whole. Future specialists must have systemic knowledge about ecological and social systems and the role of the individual + specialist in environmental protection. In order to ensure the skills process environmental education and training, development of professional knowledge and, it is necessary to introduce changes in educational and professional programs. The formation of environmental awareness of future marketing and management specialists in higher education institutions through the use of modern and innovative teaching methods will allow to significantly increase the environmental awareness level and environmental responsibility at the personal and professional levels, will strengthen the society awareness and cohesion in the face of various global and local dangers, the consequences of military actions , will reduce human losses and damages.

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# **THE ROLE OF GREEN MARKETING IN DRIVING GLOBAL CORPORATE SUSTAINABILITY**

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Initially identified as a niche approach for a particular group of customers sensitive to environmental issues, green marketing transitioned into a mainstream strategic tool and contributed significantly to corporate sustainability [1]. Green marketing was broadly defined as promoting products and practices designed to be environmentally responsible, with environmental responsibility applied to the entire product lifecycle - from design to production, distribution and disposal. This method comprised eco-friendly product design, resource-efficient production, sustainable packaging, and communicating environmental impact. While green marketing was once a value-added feature, it slowly became part of brand identity and competitive differentiation. Due to rising consumer expectations, intensifying regulatory push, and exacerbating environmental matters, companies within all industries are forced to integrate environmental consciousness into their value chains [2]. They sought to build trust and loyalty and emerge as leaders in the movement for a sustainable world.

As climate change, resource depletion, and environmental degradation become reality, corporate sustainability becomes a fundamental objective of modern businesses. As a concept, it meant that a company operated in an environmentally, socially, and economically responsible way, trying to strike a balance between profits and positive contributions to society and planet Earth. Its increasingly interlinked nature of the global economy highlighted sustainability goals that necessitated collaboration across markets and industries. Raising awareness about green marketing, taking advantage of the same, and pushing companies towards adopting responsible practices became a necessity for raising the bar as companies gradually started to respond to the public demand [3]. Green marketing promoted products that helped corporations adapt to the triple bottom line of people, a planet, and profit. In the global marketplace, the alignment was critical because companies were required to 'show' a tangible commitment to sustainability, for regulatory reasons and to gain competitive advantage.



The purpose of this research was threefold: first, to examine how green marketing can assist in brand value enhancement and satisfaction of customer's environmental concerns by expanding its functional role beyond promoting; second, to evaluate the potential and challenges of implementing green marketing globally by taking into consideration the obstacles such as geopolitical instability, digitalization and changing environmental regulations. The research looked into these factors to find possible effective strategies to enable companies remain relevant and yet align with global sustainability trends.

Finally, this research was intended to examine how green marketing can be one of the leading levers of corporate sustainability, with its place embedded in the broader context of sustainable economic development and global corporate responsibility. This discussion was intended to provide insights to corporations, marketers and policy makers on how to incorporate innovation in addressing sustainable development goals through innovative marketing strategies.

In recent years, the point of intersection of the green marketing and corporate sustainability has been receiving much attention. Increasingly, the business world is beginning to realize the concerns that are related to the environment. Where green marketing concerns itself with strategies that market products and practices that lessen the impact on the environment with regard to overall sustainability. To this end, this literature review synthesizes the key findings of recent studies which shed light on green marketing as a crucial corporate sustainability practice, both theoretically and empirically.

Pavlyk studied the effects of green investment to improve the energy efficiency of the national economies, thus establishing the baseline of the way in which financial resources for sustainability have the potential to fill the energy efficiency gap [1]. The results of this research show the importance of green marketing as a mean of communication for companies aimed at making the most of their sustainability and investment strategies. Firms that use green marketing position themselves as leaders in energy efficiency so as to entice environmentally conscious consumers and investors.

O'Neill et al. highlights the essential need for coherent climate change scenario frameworks to inform corporate strategies [2]. Research indicates that organizations that integrate green marketing will better match climate goals and play major role in propelling sustainable development. Alignment with consumers, however, gives birth to trust, transparency, demand on the accountability from brands with regards to their environmental practices.

In this regard, Zhang et al. measured sustainability of transportation industries in BRICS countries and showed that green marketing strategies can help increase its public perception regarding efforts towards sustainability of the transportation industry [3]. They find that consumer awareness of environmental impacts is important in

creating a market for sustainable practices and green marketing as a key influencer for spreading the word of eco-friendly practices.

Six transformative pathways necessary to realize the sustainable development goals are discussed by Sachs et al. [4]. In this framework, green marketing is viewed as a critical engine, initiating these transformations by motivating corporations to embrace sustainable practices, and package them in communicable form. In this sense, integrating green marketing into business strategies fits in with the rest of the aims of sustainable development and corporate responsibility.

To design effective regulatory frameworks guiding corporate behavior, Ding et al. analyzed the effect of environmental administrative penalties on the disclosure of environmental information [5]. According to their findings, the companies involved in proactive green marketing do not only abide by the regulations but they also increase their reputational capital. Reinforcing the idea that through transparent marketing of sustainable practices brand loyalty and consumer trust can be improved.

Industry 4.0 and circular economy practices were introduced by Khan et al. and their connection to the innovative business strategies supporting environmental sustainability were made [6]. And their research shows that digital technologies can support green marketing in a way that helps companies to demonstrate their sustainable efforts and communicate with consumers at the moment. However, the synergy between technology and green marketing helps to adaptive a firm to the pace of a new emerging market landscape.

According to Chițimiea et al., the drivers for green investment are market demand and consumer preferences [7]. They find that their results indicate how the growing consumer preference for environmentally friendlier products can be harnessed to push corporate sustainability. Through connecting marketing efforts to the values of the consumer more companies can improve their market standing and, at the same time, provide positive environmental outcomes.

Based on the data from the 31 regions of China, Shuai and Fan studied the effect of environmental regulations on the regional green economy efficiency in China and discovered that environmental regulations can be effectively translated into green marketing efforts [8]. According to their study, when firms employ green marketing to promote their compliance, their public image is boosted and they incite consumer participation and support for sustainable behavior.

Su examines the return performance of green investment stocks in China and finds evidence that investors react to firms that do a good job at marketing their green initiatives [9]. This reinforces the argument that investments, and the resulting enhancements in corporate financial performance, are key ingredients for long term sustainability and they can be achieved by effective green marketing.

Central Bank digital currencies: the advantage and the disadvantage, said Guley and Koldovskyi, who stressed the gain of digital financial innovations in sustainable development [10]. While only time will tell if green marketing will prove to be successful in the digital currencies market, the importance of green marketing as a tool to promote environmentally friendly financial products may become more and more important, as corporations look for new ways to connect their marketing goals with their sustainability ones.

The studies of Chien et al. explored the combination of green energy, eco innovation and environmental taxes in order to reduce air pollution in leading Asian economies [11]. Findings accentuate that corporate use of such green marketing approaches as those of product and practices has a potential to help accomplish national environment goals. Communicating their commitments to green energy and innovation through marketing channels helps the companies increase their reputation and further achieve broader environmental objectives.

Mirzoieva and Tomashevskaya stumbled upon the economic effects of market concentration in Ukraine's spice and essential oil industry [12]. Despite focusing primarily on market dynamics, the implications for green marketing are apparent. Green marketing can effectively be used by companies in this sector to differentiate their products while competing in a market dominated by other brands, including stress on sustainable sourcing and production practices. Differentiating on this basis is critical in order to entice environmentally conscious consumers and has the potential to beget a more sustainable market environment.

Koldovskyi also talked about architectural frameworks for the financial transformation of Ukraine, and suggested that with changing economic landscapes, businesses need innovative approaches to financial practices [13]. The transformation of financial products into green products can be a major responsibility on green marketing in the promotion of financially sustainable products and services that can respond to the increasing demand of green investment by consumers. Along with this alignment being reflected within the corporate sustainability also results to a more reliable consumer trust and loyalty towards a brand based on the social and environmental consciousness.

In addition to that, Shahzad et al. discuss how knowledge management processes can interact with sustainable development practices for boosting corporate green innovation [14]. The knowledge about sustainable practices can be spread by their research, and it can also drive innovation and enhance organizational image. Placing themselves as leaders in sustainability gives companies the competitive edge that may provide their economic advantage in the marketplace.

A comparative analysis of Central Bank Digital Currency and the Quantum Financial System with respect to their abilities to reform the financial system was provided by Shafranov et al. [15]. In this case, green marketing strategies can emphasize on the environmental benefits of digital currencies that advocate for sustainability. This financial innovation may attract environmentally aware investors and or consumers when it aligns with green marketing.

On the other hand, Prokopenko et al. examined green entrepreneurship models in an innovative perspective and their social impact on local economies [16]. According to them, their findings also highlight the need for a promotion of sustainable entrepreneurial practices through green marketing. Entrepreneurs can secure investment and grow community participation by effectively communicating green initiatives, and help to local and national sustainability goals.

A literature review of the CSR determinants of CSR disclosure in other economic contexts conducted Ali et al., highlights the importance of transparency in corporate practices [17]. One important vehicle through which this transparency is made is green marketing, which helps companies to tell their stakeholders about their ongoing CSR efforts, their sustainability commitments and how they can engage positively with stakeholders around these commitments.

Mukonza and Swarts investigate the influence of green marketing strategies on business performance and corporate image in the retail sector [18]. According to their findings, the implementation of green marketing can create positively impact upon the corporation image and business performance. When marketing strategies are a reflection of sustainability goals, retailers can meet the growing expectation among consumers for more friendly renewable products, thereby transforming the market.

Tamvada proposed a new theoretical groundwork for regulation of the CSR as an accountability of CSR sustainability practices [19]. Green marketing complements this theoretical approach because firms that adopt green marketing will probably have enhanced accountability and also transparency which will positively impact with stakeholders' relations.

Then, Shahzad et al. studied the link between environmental sustainability, CSR, and green innovation at the manufacturing industry in Pakistan [20]. This research also shows how green marketing can tie these components together to help companies become more sustainable, by engaging consumers and driving innovation. Green marketing companies are more fit to compete in sustainable development facing the complications of sustainability principles, and also complying to regulatory and consumer expectations.

The works indicate that green marketing serves to push forward the companies' sustainability. Effective environmental commitment communication by companies helps build reputations, attracting consumers and propelling the companies onto more

sustainable paths. As sustainable products become in high demand for consumers, including the green marketing aspects in organizational tactics will be vital for enterprises striving to be wealthy in a swiftly changing market.

This work is qualitative and employs secondary data to examine how green marketing is used in enhancing corporate sustainability. The methodology is set up to thoroughly analyze existing literature, case studies, and industry reports on the intersections of green marketing practices and eco-friendly business strategies.

Academic journals, industry reports, government publications and reliable online databases were the primary sources of secondary data [21-25]. The main focus of the review was to point out the gaps in current literature and to propose a theoretical framework to comprehend the role of green marketing in corporate sustainability.

Practical applications and outcomes were analyzed through case studies of successful corporations that have successfully integrated green marketing into their business strategies. These specific case studies were chosen because they are recognized in sustainability award programs, considered best practices in green marketing, and show documented positive environmental impact. It wanted to discover when the same strategies and lessons were learned so that these could be transferred into future green marketing practices.

Data collected from these sources was analyzed through the use of qualitative content analysis. Coding and categorizing main themes associated with green marketing strategies, corporate sustainability initiatives, and outcomes on brand reputation and consumer involvement took place. The research synthesized these themes with the hope that it could improve our understanding of how green marketing practices enhance the practice of sustainable business practices.

The data used for this research is secondary and may contain biases that are inherent in original sources. In addition, the findings do not reflect the latest developments in green marketing practices because data collection was based on existing literature and reports accessible until the time of the study. A mixed methods approach going forward could include collecting primary data, through surveys or interviews, to have a better understanding of the effect of green marketing on corporate sustainability.

#### *Transformation of green marketing approaches through innovative economic development*

Similar to other changes in innovative economic development, companies have developed green marketing approaches through parallel evolution, companies have been migrating towards adoption of a sustainable practice approach to cope with environmental challenges because of changes in market demand [26]. New trends and technologies, leading the charge of this transformation, redefine the eco-friendly product innovations as well as green branding.

Companies are bringing products to market made from sustainable materials, using energy efficient production methods while significantly reducing their negative waste output. Further, in fashion, automotive and technology brands, bio-based materials, circular product design and upcycling are explored as ways to minimize their ecological footprint [1]. The shift to innovation in product design, in turn, diminishes the negative environmental impact, and makes a positive contribution to brand image because consumers begin to look for brands with which they identify. As a tool, this has made green branding a very effective means by which these companies can differentiate themselves, build and maintain customer loyalty and position their brand as a responsible market leader.

Thanks to digital globalization, the outreach and impact of green marketing strategies are now far reaching and powerful for companies to communicate sustainability initiatives around the world. The need to spread awareness about green practices can be fulfilled by digital platforms and social media channels; through these, companies can share their progress, goals, and achievements in real, real time with all who can hear. The amount of transparency that companies bring to bear through digital channels also means they can launch interactive campaigns, demonstrate the extent of their environmental impact, and get consumers involved in a discussion about sustainability.

For instance, social media platforms permit viral campaigns around eco-friendly practices and educate the consumer through these platforms, with the help of a community built around sustainable values. Moreover, e commerce allowed brands to advertise sustainable options directly to consumers while providing the essential detail of how each product helped enhance the environment, which is especially important considering that the main audience for sustainable products are the consumers who look for transparency and hold you responsible [2].

Numerous corporations have made use of green marketing as a part of their business transformation, and thereby have also maintained competitiveness and showed social responsibility [12]. A range of innovative approaches to green marketing are illustrated through studies of leading corporations such as multinational firms that have revitalized their supply chains around sustainability. Take consumer goods as an example, some leading companies in the industry have pledged to eliminate plastic waste by reengineering their packaging, or switch to biodegradable alternatives, while some tech conglomerates are putting large amounts of capital into renewables to power their business.

In each case, these adaptations serve to align corporate strategies with global sustainability goals, thereby enhancing brand reputation and consumer trust. By integrating green marketing into their business models, these corporations not only respond to growing consumer demand for sustainable products but also future-proof

their operations against potential regulatory changes and environmental challenges [13]. Through these transformations, green marketing has evolved into a critical component of competitive business strategy, proving that companies can drive both economic success and positive environmental impact.

*Strategic dimension of green marketing amidst global geopolitical and environmental challenges*

Marketing based on “going green” has emerged as a major component of business strategies of today’s companies doing business in today’s interconnected global market, providing the opportunity for companies to link their brands to environmental sustainability. The implementation of the green marketing strategies at a global level faces off many challenges such as diverse regulatory pressures, market resistance, and geopolitical tensions [27]. All this can make it hard for companies to achieve consistent sustainability goals across these regions, and they have been forced to develop adaptive strategies to accommodate local conditions. Table 1 presents an overview of these challenges, and discusses strategic responses that organizations may adopt for continuous green marketing practices in unfavorable geopolitical and environmental contexts. How multinational corporations case studies have been analyzed to show how they were able to overcome these challenges effectively by being resilient, adaptable and engaging in the local community for the success of green marketing across different markets.

Table 1

An overview of challenges and explores strategic responses

№	Aspect	Description	Examples / Case studies
1.	Challenges and opportunities	<p>1. Regulatory pressures. Environmental standards and emissions regulations differ among regions making it hard for companies to pursue a uniform green marketing strategy. Companies may have to rearrange their operations, as well as offer more transparency, as a result of stricter environmental policies.</p> <p>2. Market resistance. In some markets, the demand will be affected, as there are still certain markets resistant to these eco-friendly products, for few are cost sensitive or unaware.</p> <p>3. Geopolitical tensions. Global supply chains can be impacted by trade restrictions, tariffs and political instability, making it difficult for firms to adopt sustainable practices and more difficult for green marketing to take place.</p>	<p>1. Volkswagen faced regulatory challenges in meeting emissions standards in different markets, which led to an overhaul in its sustainability strategy.</p> <p>2. Unilever adapted green marketing initiatives to address different market awareness levels, focusing on education in resistant regions.</p>

2.	Global strategy development	<p>1. Obtaining compliance to local regulations. Propose flexible, region specific strategies that are also able to meet diverse regulatory requirements increasing credibility and meaning.</p> <p>2. Initiatives of consumer education. In markets where consumers have a low awareness about environmental problems, build demand by investing in the education of consumers on eco-friendly products benefits.</p> <p>3. Resilient supply chain. Consider designing adaptive supply chains, which can survive the edges of everchanging geopolitics by sending materials from multiple suppliers and various locations.</p> <p>4. Interaction with local entities. Team up with local organizations/governments/NGOs to establish community buy in and overcome political hurdles.</p>	<p>1. Patagonia has a supply chain that prioritizes resilience by sourcing from multiple ethical suppliers, reducing dependency on specific regions and insulating it from geopolitical disruptions.</p> <p>2. Nike invests heavily in consumer education campaigns on sustainability, especially in regions with emerging environmental awareness.</p>
3.	Case studies	<p>1. IKEA. Even this strikes challenges of high tariffs and trade restrictions in different regions, but successfully integrates green marketing through the use of renewable energy, and the sourcing of sustainable materials. Taking its strategies along with local regulations, IKEA collaborates with regional NGOs to give strength to community support.</p> <p>2. Nestlé. It overcomes market resistance and geopolitical challenges by targeting consumer education and collaborating with local governments to drive sustainable practices in emerging markets, proving its green marketing resilience.</p>	<p>1. IKEA. Collaborates with local entities and NGOs to meet region-specific environmental standards, ensuring sustainable practices despite market differences.</p> <p>2. Nestlé. Develops sustainable supply chains to manage resources effectively and maintain green practices amidst regulatory pressures.</p>

*Source: authors development using data from [23, 25].*

While global green marketing is challenging, companies need to devise flexible and resilient strategies that enable an organization to manage regulatory diversity and consumer hesitations even in the face of geopolitical volatility. The case studies show that leading companies tend to base their green marketing on adaptive supply chains, localized compliance, environmental education of their customers, and partnership with local agencies [25].

The capability to adapt strategies by regional marketplaces maintaining the dedication to environmental responsibility provides the companies with the



competitive advantage and assists consumers to trust and stick with the brand. These ultimate insights infer global companies can achieve a successful tradeoff between sustainability objectives and local requirements with education focused and collaborative green marketing approaches that are adaptive and face complex geopolitical and environmental challenges.

*Social responsibility and market paradigm shift through green marketing*

A green marketing tool, it is strongly aligned with broader Corporate Social Responsibility (CSR) initiatives and has become yet another tool through which companies can support environmentally responsible consumer behavior and demonstrate their willingness to embrace a sustainable way of doing business. With businesses more aware of their potential in solving environmental problems, green marketing forms part of CSR strategies, primarily aimed at minimizing environmental impact, saving resources and disclosing on sustainability practices [28].

Companies can promote eco-friendly products and services, prompting consumers to make smart decisions and consequently raising the demand for sustainable activities, which something everyone should work collectively towards. This green marketing alignment with CSR initiatives proves a company's willingness to have long term positive impact, building the company's reputation as a responsible corporate citizen and establishing a standard among industry peers.

Green marketing has played a significant role in changing market landscape by changing consumer expectations and demands. In line with consumers becoming more aware of environmental issues, there is a growing trend of skewing consumers' preferences towards products or services that are environmentally friendly. The focus of this thesis is on how this shift has encouraged companies to incorporate green marketing as a strategic response by innovating product design, sourcing, and production processes to accommodate the changing nature of the consumer.

Companies aren't just satisfying today's consumers with this; they're setting new standards for all consumers and pushing competitors to follow those same practices for environmental reasons. The implication is that green marketing is a key factor influencing market paradigm shift towards sustainability and positioning environmental consciousness as a part of purchasing process.

Green marketing focuses a lot on social responsibility which greatly improves brand reputation and customer loyalty. Green marketing helps companies to communicate with their audience the connection and how well they connect with the issues of social and environmental appeal to the audience and draw them to brands' ideals and share their values, and they are looking for brands that are truly committed to social and environmental issues [16].

Companies can however gain the upper hand from other competitors through transparent and impactful green initiatives, therefore improving public perception,

increasing brand trust and ultimately nurturing long term consumer relationships. Company brands which take an advocacy position with regards to environmental sustainability can not only get environmentally conscious consumers, but also have loyal customers who consider environmental sustainability an important part of the corporation's commitment to CSR. Finally, green marketing, as a facet of social responsibility, can serve as a method for driving brand loyalty and providing long term salience and growth for organisations in a market increasingly aligned with sustainability.

#### *The role of green marketing in logistics and supply chain management*

As the companies try to bring their operations in accordance with the sustainable practices, green marketing becomes more significant role in logistics and supply chain management. A major branch of green marketing principles focuses on eco-friendly logistics and urges organisations to have a green mind set in everything that they do in their logistics processes [29]. It also involves green packaging solutions that encourage the use of recyclable or biodegradable materials; and that of optimized transportation methods, such that the carbon emission is reduced.

As electric or hybrid vehicles become more commonplace, companies spend more resources aiming to optimize their routes to minimize fuel consumption, and investigate different options of transportation - like rail or waterways - usually with lower environmental impact. By incorporating eco-friendly logistics practices companies not only meet their green marketing claims but also increase their overall operating efficiency and lower waste and energy consumption related costs.

Sustainable logistics practices along with green marketing propels tremendous shift towards green sourcing and reduction in waste in supply chain. Sustainable procurement practices are becoming an increasingly important part of how companies meet the expectations of transparency and environmental stewardship on the part of consumers. This is a shift toward choosing suppliers based on their dedication to sustainability, choosing suppliers who are using responsible means of sourcing, and participating in projects to reduce waste throughout the entire supply chain.

Because green marketing still calls into play the idea of sourcing materials sustainably, it's still selling the thought that it can help save you more and somehow still maintains a brand's integrity and trust with its customers [30]. In embracing principles of the circular economy - like using materials over and over and making less waste - businesses can cement their commitment to sustainability - a value that resonates strongly with consumers and provides businesses with a competitive edge.

With open communication, companies can create a shared vision companies can create a shared vision with suppliers and stakeholders of what sustainability should look like while driving collective action to adopt ecologically sound practices. By making the supply chain transparent, the customer will know the effects of his/her

purchases on the environment meaning that there is consumer satisfaction and brand loyalty. Efforts are also made to collaborate, for example, joint sustainability programs with suppliers or work together in industry-wide efforts to develop best practices that also increase the efficacy of green marketing strategies.

Together with these collaborative efforts, companies can meet the regulatory standards and the consumers' requirements, while building a much more sustainable and resilient supply chain. This integration of green marketing to logistics and supply chain management ultimately emphasizes the significance of sustainability in current business practices in favor of a greener future.

#### *Implications for future research and practice*

With the growing global attention to sustainability, the importance of ramifications of green marketing practices for corporate sustainability also become very important. As organizations face demands from customers for products that are environmentally responsible [31], it necessitates that organizations act proactively as they strive to keep up with their competition.

Table 2 identifies key areas of future research and practice, such as anticipated trends in green marketing, policy recommendations to increase corporate responsibility, and existing research gaps that need to be closed. Thus, identification of these dimensions will help the business community and the policy makers to understand how they can make the best use of green marketing as a strategic tool for long term sustainability in an ever-changing market place.

Table 2

#### Key areas for future research and practice

N <sup>o</sup>	Aspect	Description	Examples / Suggestions
1	Future trends	The anticipated green marketing practices evolution is likely going to see the growth of integration of advanced technologies like artificial intelligence and big data analytics to optimize sustainable marketing strategies. In addition, with the upcoming wave of eco conscious consumerism, we will see companies that adopt more innovative approaches in product development, packaging and marketing communications to become more circular in their economy.	Companies may increasingly leverage AI to analyze consumer behavior and preferences related to sustainability, allowing for more targeted green marketing campaigns. For example, brands might use predictive analytics to enhance inventory management of eco-friendly products.
2	Policy recommendations	To this end, policy interventions aimed at creating incentives to businesses to adopt green marketing practices, including tax break for sustainable product	Implementing tax incentives for companies that meet specific sustainability criteria can encourage more

		innovations, grant for ecofriendly packaging solutions, and subsidy for certification for green claims. Meanwhile, governments could set clear guidelines, and standards for green marketing practices that provide more versatility to consumers on the products they choose, and also hold market actors accountable.	businesses to engage in green marketing. Establishing a standardized certification for eco-friendly products could help consumers identify truly sustainable options and enhance brand credibility.
3	Research gaps	Further research into the long-term efficacy of green marketing strategies and their influence on consumer behavior, brand loyalty and corporate performance is still necessary. Moreover, studies on the connection between green marketing and supply chain management practices could offer insights into integrated means to sustainability.	Research could focus on longitudinal studies assessing the impact of green marketing on consumer purchasing decisions over time. Another area could be exploring how integrating sustainability into supply chain practices influences overall corporate performance and competitiveness in the marketplace.

*Source: authors development using [25].*

The green marketing insights in this table show the dynamic nature of green marketing and how its influence shapes the practices of corporate sustainability. Future trends are anticipated and it is expected that technology will progress, along with consumer awareness, thereby requiring companies to implement green marketing strategies; failing to do so may put these companies at risk of falling behind.

Sustainable practices should be adopted by organizations, and policy interventions will play a crucial role to enable organization to commit towards environmentally responsible initiatives by providing incentives, and standardized frameworks. Furthermore, conducting these researches will be important not only to close identified research gaps but also for grasping the long- term effectiveness of green marketing strategies and their total impact on corporate performance and consumer behavior. If these implications are embraced, businesses can become leaders in sustainability and add value to a more responsible and eco conscious marketplace.

This treatment of green marketing highlights its contribution to corporate sustainability. A focus on key points brought out in the discussion reveals in actual facts that green marketing is not just a passing fad but a good practice that matches business practices with growing consumer interest in environmentally sustainable products. Eco friendly practices can be integrated into a company's operations so that

they can improve their brand reputation, win consumer loyalty, and consequently promote sustainable growth.

In addition to individual organizations, green marketing has broader involvement on the societal and environmental fronts. Today, businesses engage in sustainable practices, which help them greatly reduce waste, mitigate climate change, and practice a circular economy. Such a collective movement towards sustainability could indeed transform market dynamics, affect consumer behavior and effect systemic change in existing industries. Through green marketing, corporations can act as catalysts for good, and help pave the way for a greener life for us all.

Through the daunting aspects of digital globalization, corporations have to include green marketing as a top priority within their strategic plans. In addition to placing companies in a favorable position within competitive market spaces, this approach brings organizations in line with the growing expectations of an eco-conscious consumer base. When businesses prioritize sustainability, they not only help take care of a healthier planet, but also help ensure a long and successful future for their business. Organizations should now understand the revolutionary potential of green marketing, and take action to introduce sustainable practices in their core strategies.

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# **SOCIAL RESPONSIBILITY OF THE SUBJECTS OF THE LOGISTICS CHAIN IN THE RETURNABLE PACKAGING SYSTEM: EUROPEAN EXPERIENCE**

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The problem of collection and processing of household waste has remained relevant for the past decades. The accumulation of garbage, in particular plastic, has become a global threat to the environment and humanity itself, and the need for changes in this area has already been recognized by the governments of developed countries, the producers of goods, and consumers. European countries have considerable experience in organizing the collection and processing of used packaging waste. **European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, obliged EU member states to create systems for the return and recycling of used packaging for consumers in order to achieve recycling targets by 2024** [1]. Thus, the European Union (EU) has imposed a legal obligation on its member states to achieve packaging recovery and recycling goals. In turn, national governments can delegate this legal obligation to producers or importers through the establishment of Extended Producer Responsibility (EPR) schemes. The Organization for Economic Cooperation and Development (OECD) defines EPR as an environmental policy mechanism that extends the producer's responsibility for a product beyond its production phase to its life cycle after consumption [2]. The EPR policy is characterized by the transfer of responsibility for the collection and processing of packaging (financial or operational burden) from consumers and municipalities to producers. While producers bear the primary responsibility, EPR schemes involve various stakeholders, such as consumers, retailers and government agencies, to jointly achieve environmental goals.

In Ukraine, which has just become a candidate for membership of the European Union, the mechanism for organizing the collection and processing of household waste is still at the stage of formation. The problem of pollution of territories and the surrounding environment becomes even more acute due to the lack of modern processing enterprises and military operations that have covered the East and South of the country. Post-war recovery will require different approaches in this matter and their harmonization with European directives. In this regard, it is of scientific interest to

generalize theoretical approaches and systematize the experience of European countries in the organization of interaction and distribution of social responsibility between individual links in the chain of product creation and consumption.

The basic condition of the circular economy (CE) is the establishment of a system of collection and processing and reuse of packaging waste throughout the entire value chain of the product and its consumption. And in this context, it is important to find a balance of interests between all subjects of the logistics chain, which includes: manufacturers of both the product and packaging materials, distributors, retailers, consumers, collectors, waste sorters, and their processors. This is noted by scientists working in this direction, [3-5]. Velenturf APM, Jensen PD, Purnell P, Jopson J, Ebner NA. [6] insist on the integration of economic, social and environmental motives in the management of business support for the transition to a closed-loop economy. Reshetnikova, I., Apalkova, V., Lytovchenko, I., Wiktor J.W. [7] draw attention to the fact that the effect of the integration of CE with business processes goes beyond purely economic assessment. Among the factors motivating the application of CE principles in the enterprise's business processes, in addition to economic ones, many scientists name reputational and social responsibility factors. In particular, this aspect was studied by Aguilera-Caracuel, J., & Guerrero-Villegas, J. [8], Ali, H. Y., Danish, R. Q., & Asrar-ul-Haq, M. [9], Buglewicz, K. [10], Gazzola, P., Paterson, A., Amelio, S., Grechi, D., & Cristina, S. [11], Liczmańska-Kopcewicz, K., Mizera, K., & Pypłacz, P. [12].

The integration of supply chain management into the circular economy has been studied in many studies and has been called circular supply chain management (CSCM). CSCM was defined by Batista, L., Bourlakis, M., Smart, P., & Maull, R. [13] as coordinated forward and reverse supply chains through the purposeful integration of a business ecosystem to create value from products/services, by-products and of useful waste coming through the extension of the life cycle, which improves the economic, social and environmental sustainability of organizations. Problems of interaction and combination of interests of supply chain participants are studied, in particular, Berardi, P. C., & de Brito, R. P. [14]

Returnable packaging systems (RPS), which are related to the production and consumption of goods, using reusable containers, are an important component of the system of cyclical management of supply chains. Deposit-Refund Systems (DRS) are considered one of the most effective collection methods for beverage packaging. Their varieties are considered by Zhou, G., Gu, Y., Wu, Y., Gong, Y., Mu, X., Han, H., & Chang, T. [15] ta Calabrese, A., Costa, R., Levialdi Ghiron, N., Menichini, T., Miscoli, V., & Tiburzi, L. [16]

The purpose of this study is to generalize the existing theoretical approaches to the organization of the interaction of logistics chain subjects in the used packaging

collection system and to analyze the successful experience of Slovakia with the aim of spreading it in Ukrainian realities. To generalize the theoretical aspects of Extended Producer Responsibility and Deposit-Refund Systems, methods of analysis and synthesis are applied. The research used secondary sources of information, namely, scientific articles indexed in the SCOPUS and Web of Science Core Collection databases, reviews and reports of relevant profiles related to the problems of the circular economy and the functioning of the DRS, Eurostat data, information from websites companies and associations. Content analysis is used to study DRS models in European countries, which involves obtaining structured information from unstructured texts.

Directive 94/62/EC aims to ensure a high level of environmental protection and the harmonisation of national measures for the management of collection and recycling of packaging and packaging waste. According to Eurostat, in 2021, the EU produced about 188.7 kg of packaging waste per inhabitant, while in Croatia it was 73.8 kg per inhabitant and in Ireland up to 246.1 kg per inhabitant. In 2021, the most common packaging waste was paper and cardboard (40.3%), plastic (19%), glass (18.5%), wood (17.1%) and metal (4.9%). (Fig. 1)

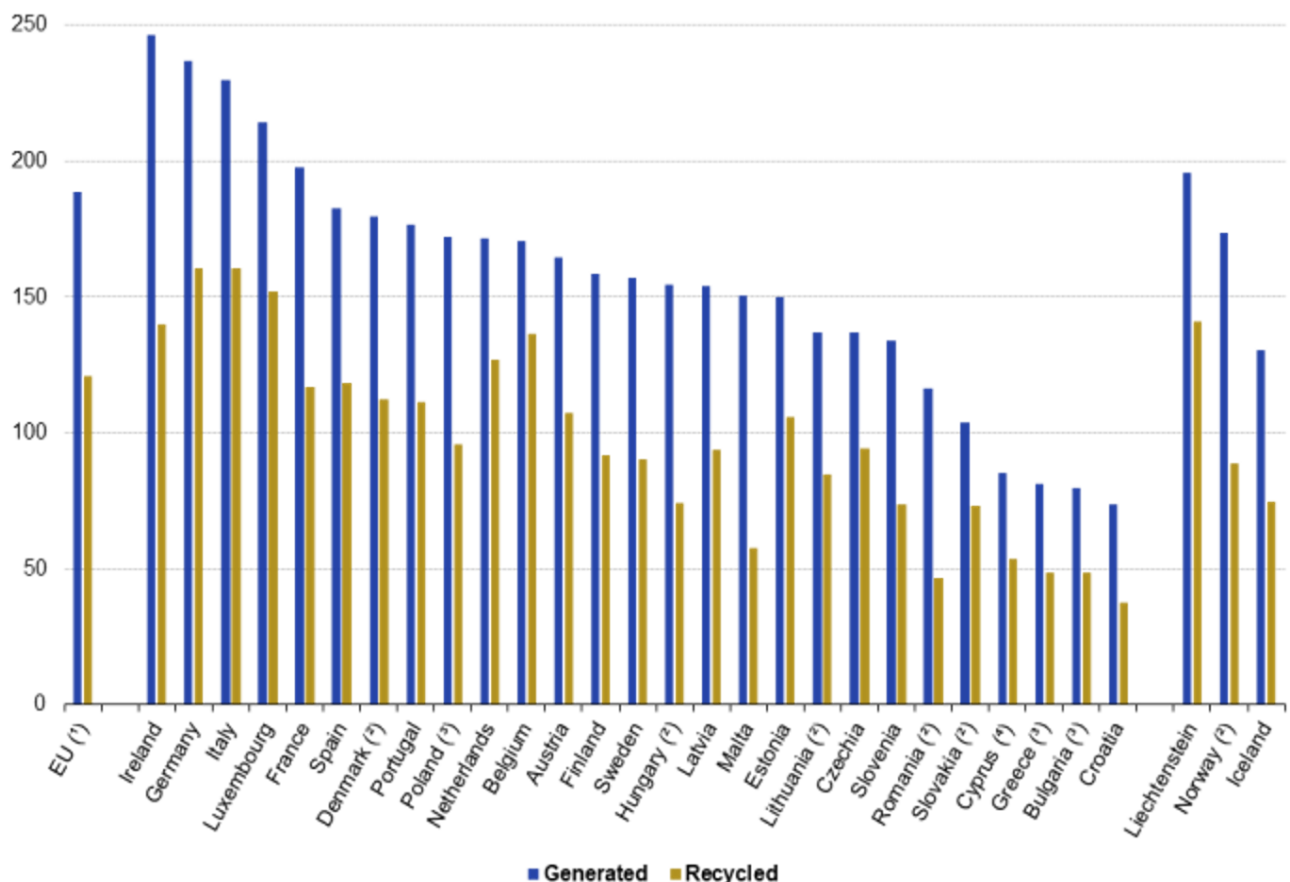


Fig. 1. - Production volume and processing of plastic packaging in kg. per inhabitant in EU member states in 2021

Source: Eurostat [17]

Over the three years that have passed, the situation has improved slightly, and in the singing world this has become the result of the current pressure on Lanzug participants to enter the plastic packaging sector through the acceptance of the European Commission by more violent forces for the functioning of the single European market. In addition, local regions and territorial communities have additional responsibilities for collecting plastic waste and recycling. The research of Di Foggia G, ., Beccarello M. [18] is devoted to a regular analysis of the models of input control in Germany, France, Great Britain, Netherlands, Portugal, Denmark, Spain, and Italy.

As can be summarized from the literature on this issue, in some countries of the European Union, the management of solid waste outputs, including packaging outputs, is within the scope of the state's responsibility and responsibility. The local organs are involved in self-direction. Packaging outputs are collected either directly from the establishment responsible for this process, or from private companies that operate on behalf of the state. The local government or government will spend on the operation of such a system, and the community will reduce its financial contributions through payments and taxes for the collection and disposal of household waste. Developers of packaged goods and other packaging parties are responsible for ensuring that their products and packaging meet current health and safety standards. Such a mechanism itself "de jure" exists in Ukraine, but due to the variety of effective forms and implementation tools, its effectiveness in practice is very low. At the same time, the harmonization of Ukrainian legislation with the Directives of the European Union requires significant changes in this direction. From the end of June 2024, the Law of Ukraine "On Waste Management" No. 2804-IX of December 1, 2022 entered into force. This Law defines the legal, organizational, and economic principles of activities related to the prevention of formation, reduction of the volume of waste generation, reduction of negative consequences from waste management activities, promotion of preparation of waste for reuse, recycling and recovery in order to prevent their negative impact on human health and surrounding natural environment [19]. According to this Law, enterprises should appear throughout Ukraine, which should be engaged in the administration of waste removal. In Kyiv, such a new utility enterprise "Municipal Administrator for Household Waste Management" has already appeared instead of the enterprise "Kyivkomunservice", which was engaged in waste removal [20]. In the management systems discussed above, where overall coordination and direction are provided by state or local authorities, or enterprises created by them, funding often covers only household waste collection, transport and disposal in landfills. In addition, there is a lack of interest and interaction of various subjects of the chain of collection and processing. It is clear that under such conditions, high efficiency of the packaging collection and processing system should not be expected.

Extended Producer Responsibility (EPR) waste management has become such a new mechanism that engages and unites stakeholders at every stage of the packaging value chain. In this system, manufacturers are responsible for managing packaging waste, including collection, sorting and recycling. The experience of the operation of a similar EPR system in Germany and Great Britain in the field of plastic waste disposal was studied by scientists Ramasubramanian, B., Tan, J., Chellappan, V. [21]. As noted by experts in this field, the implementation of EPR systems improves interaction between various stakeholders and also assigns them new responsibilities. The specific nature of these duties depends on the institutional and legal landscape in each individual country. But, despite the fact that the existing EPR systems in different countries differ significantly in the form of implementation, motivational tools and distribution of responsibility between chain participants, the principles of their operation remain similar. Namely: each manufacturer (or importer) pays a commission when placing a packaged product on the market, which covers the collection, sorting and processing of packaging waste. At the same time, EPRs can be implemented on the basis of individual or collective responsibility. In the first case, the producer takes responsibility and directly contacts and organizes interaction with other actors of the chain, or financially encourages waste disposal operators for their collection and return. In the case of a system based on collective responsibility, the responsibilities for producer waste management are transferred to a third-party institution - Producer Responsibility Organization (PRO) or system operator, which assumes all responsibility for the organization of waste management activities in the system. Differences in the operation of ERP systems based on individual and collective responsibility are shown in the table 1.

Table 1

Individual vs collective responsibility schemes

Criteria	Individual responsibility	Collective responsibility
Financial aspects	Producers and importers pay directly for their packaging waste to be collected and treated.	Producers and importers pay their waste collection fees to the PRO, which pays the waste management operators to collect and treat waste.
Organisational aspects & practicalities	Producers and importers need to know the exact distribution of their packaging and be able to access it, wherever it may be. This poses logistical challenges, especially when products are distributed in small quantities, because the logistics infrastructure required to process small volumes is very similar to that required for larger volumes and carries similar costs	The PRO carries out the system's operational activities on behalf of the producers and importers, resulting in significantly reduced costs and simpler logistics.

Monitoring and enforcement	A state agency needs to monitor, and if necessary, enforce, that every single obliged producer and importer fulfils all of their tasks and responsibilities.	The PRO needs to fulfil all the tasks and responsibilities assigned to it, and its performance is monitored, and if necessary, enforced, by a third party, such as state a body or external auditor.
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Source: [22]

One of the forms of implementation of Extended Producer Responsibility (EPR) is deposit refund schemes. It is the most widespread in the countries of the European Union. Deposit-Refund Systems (DRS) are one of the most effective methods to collect *one-way* beverage packaging. It has already proven its effectiveness in the production of beverages and is attracting more and more fans in European countries every year. At the end of 2023, 14 European countries (DE, DK, EE, FI, HR, IS, LT, LV, MT, NL, NO, RO, SE, and SK) have a deposit system in place for beverage packaging, mostly targeting single-use containers. This makes the total number of people living with a deposit system 164 million in the EU and EFTA countries. (ACR\_Deposit\_Refund\_Systems\_EU\_Report). Ireland, Luxembourg, - will be launched in the near future. Portugal, Austria - in the development phase [23].

The specific economic mechanism of DRS for each country depends on the peculiarities of the national business environment. In most cases, the primary responsibility lies with the manufacturer for financing and organizing used beverage packaging in the EPR system. But the overall success of DRS depends on the interaction of chain participants, their motivation and the involvement of each of them in this process.

For Ukraine, which is in the status of a candidate for membership in the European Union, the experience of Slovakia is of direct interest, since this country is close to us in terms of per capita income, culture, level of social awareness and responsibility. Therefore, let's dwell on the case of this country in more detail.

The National Council of the Slovak Republic approved Law no. 302/2019 on the reservation of disposable containers for beverages and on amendments to some laws. The aim was to ensure an increase in the collection of single-use beverage packaging waste while reducing the amount of this packaging in nature as waste that burdens the environment. Based on the adopted legislation, a deposit system for plastic PET bottles and cans has been introduced in the Slovak Republic since January 1, 2022. Together with the law, its implementation resolution is also in force - a resolution that implements some provisions of the law regarding the storage of disposable containers for drinks. When implementing the system from January 2022, Slovakia committed to increase the current collection of beverage containers from 60%

to 90% in 2025, but this figure was already reached by the end of 2023. The harmonization of the interests of DRS participants also helped to achieve significant success in collecting used beverage packaging.

The administrator of the return system in Slovakia is a non-profit organization, created by a consortium of four entities: Slovak Soft Drinks and Mineral Waters Association (Asociácia výrobcov nealkoholických nápojov a minerálnych vôd na Slovensku – AVNM), Slovak Beer and Malt Association (Slovenské združenie výrobcov piva a sladu – SZVPS), Slovak Alliance of Modern Trade (Slovenská aliancia moderného obchodu – SAMO), Association of Commerce of the Slovak Republic (Zväz obchodu SR – ZOSR). These companies represent soft drink and mineral water producers, beer producers, and representatives of the wholesale and retail trade. Together, their members deal with almost 80% of all returned packaging and represent more than 3000 commercial outlets. The deposit return system is funded by producer fees, material sales, and uncollected deposits [24]. The mechanism of its functioning in Slovakia with the distribution of functions of the subjects of the logistics chain is shown in Fig. 2.

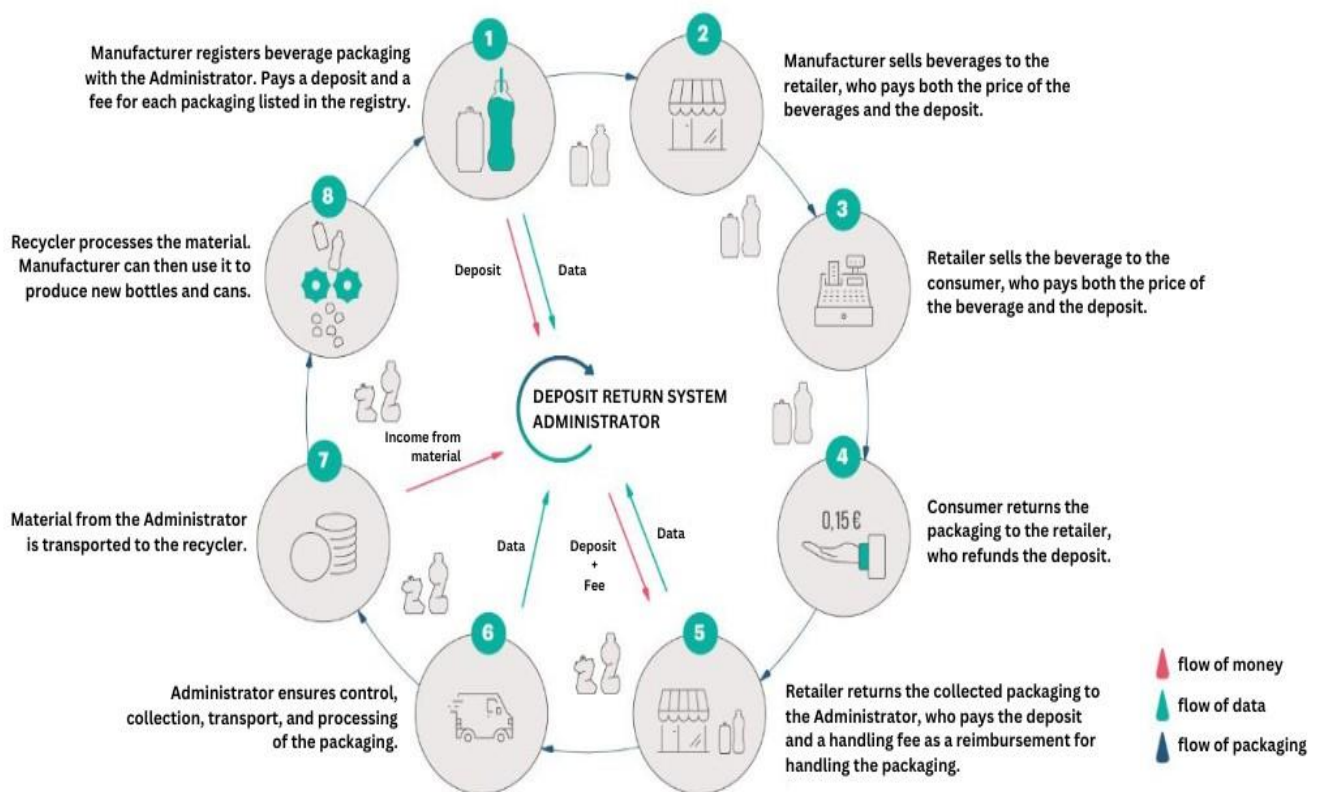


Fig. 2. – Mechanism of operation of DRS in Slovakia

Source: [25]

Thus, a centralized mechanism has been built in Slovakia, which relies on an extensive system of collection points for used packaging with so-called "Pfandomats"

in retail chains throughout the country. Among the advantages that encourage retail enterprises to participate in the Program and install Pfandomats in their premises, the following can be noted.

- Economical. In the form of compensation for the purchase of equipment and direct collection of bottles in their premises. Repeat purchases and increased sales due to increased customer traffic, since returning packaging to stores and receiving money for it motivates further purchases in the same retail establishments.

- Reputable. Participation in DRS and the installation of Pfandomats became part of the retail network's corporate social responsibility strategy. Clients willingly support companies that are positioned on the market as socially responsible, take care of environmental protection and sustainable development of society. This ultimately has a positive effect on the increase of customers and their loyalty.

- Competitive. The presence of special machines for receiving used bottles in the premises of stores can be considered as an added value and a competitive advantage in the market. Customers who regularly buy drinks and need to return bottles are likely to choose such stores for their regular purchases.

Speaking about the harmonization of the interests of the DRS logistics chain in Slovakia, it is worth citing the opinion of experts in this field. «The main Retail Organization SAMO and independent retailers are very satisfied with the handling fee they receive from the system administrator for each package they collect. Beverage retailers and large-scale retail trade brands are satisfied with the handling fee they receive from the DRS administrator to compensate for the costs they incur for the collection of beverage containers at their own sale points and which also covers the costs incurred for the purchase of the reverse vending machines. Even small retailers that might be exempted from having a return point want to participate voluntarily for the benefits that come with it, e.g. in terms of customer loyalty. Municipalities, in addition to benefiting from the positive effects for the local economy and employment, appreciate the terrific reduction of beverage containers which are littered or disposed of in residual waste, and the cost savings this implies» [26]. For the end consumers - ordinary Slovaks, with relatively small incomes, the factor of the cost of the collateral package of 15 euro cents has become quite important.

In addition, it is possible to add a positive effect on the environment in the form of a reduction in energy consumption for processing bottles and greenhouse gas emissions, freeing up landfill sites, and preserving natural resources. The introduction of DRS in Slovakia generally contributed to the environmental education of the society.

The conducted research showed that the problem of interaction, motivation and distribution of responsibility between the participants of the packaging recycling chain occupies one of the central places in the household waste recycling system. The status



of Ukraine as a candidate country for the EU obliges it to reform many spheres of society and economy in accordance with the requirements of the Single European Market, in particular the industry of household waste processing. Each country has gone its own way in building a packaging waste processing system. DRS has proven its effectiveness in almost half of the EU countries and continues to gain its supporters.

The Slovak experience of the DRS organization is based on the principle of collective responsibility, which involves the widespread involvement of retail stores throughout the country by installing Pfandomats in them, as well as the creation of a balanced system of incentives for all participants in the beverage production chain, their distribution, consumption and packaging return. This experience has proven its effectiveness and can serve as a good example for building a similar system in Ukraine. This is facilitated by an extensive retail system in Ukraine, and not a high level of income of the population. Despite the negative consequences caused by the war, retail shows a stable growth rate because it satisfies the primary needs of consumers. And visiting shops is almost a daily habit of Ukrainians. This especially applies to the population with low incomes. In the conditions of the current martial law and after the military recovery, most of the financial resources and administrative levers are concentrated at the state level. The role of territorial communities is limited both financially and administratively. Therefore, state institutions should take the leading role in the creation and organization of DRS functioning in Ukraine. Real incomes of the population remain at a low level due to inflation, so material incentives, such as those operating in Slovakia, will be successful, provided that the optimal cost of bottles is established, which will encourage consumers to collect and return them.

The war imposed on Ukraine proved the high level of cohesion of Ukrainian society around social events and projects, and the social responsibility of individual citizens. Therefore, such a project of collection and processing of used bottles, built on the example of collective responsibility, will definitely find supporters among the subjects of the logistics chain of waste processing and representatives of various segments of the population, who support it not only for the sake of material reward, but for reasons of social responsibility and preservation of the environment.

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# AGENTS OF SUSTAINABILITY: YOUNG EUROPEANS PERSPECTIVE

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Social responsibility, sustainable development, and environmental changes are currently a significant part of the considerations of EU policymakers in light of ongoing political shifts and strategies planned for implementation across all European countries. This subject also garners interest from young people, who increasingly feel the need to actively participate in green initiatives that support the protection of natural resources and their preservation for future generations. Given the advancement of technology, young generations are capable of communicating and disseminating information much faster and more effectively. They are almost constantly connected to the online space, where certain lifestyles, healthy habits, eco-advice, as well as the spread of misinformation or propaganda, are prominently promoted. Therefore, it is crucial to attempt to verify how messages promoting social responsibility, sustainable development, and related EU practices are perceived and understood by the young adult generation, whose goal is to implement environmentally friendly solutions in as many areas as possible.

This article aims to present how being an agent of sustainable development is defined by young EU members and how, according to EU youth, marketing strategies influence the building of a sustainable future for Europe. The presented data were collected during the Future of Europe 2024 project through panel discussions conducted among representatives of seven European countries: Poland, Portugal, France, Germany, Norway, Latvia, and Spain.

Global environmental issues began to attract more attention in the second half of the 20th century, particularly from the 1960s onwards. At that time, greater focus was placed on problems that had previously been recognized by scientists but had not received sufficient public attention. Increasing environmental pollution in industrialized countries and the intense exploitation of natural resources contributed to a rise in social awareness. Growing concern about these problems, as well as fears related to future economic development, led to the need for a global strategy aimed at countering these threats [1]. Numerous initiatives were undertaken to prevent environmental degradation, which eventually led to the formation of the concept of sustainable development. This concept gave rise to subsequent strategies and became a benchmark for pro-environmental actions for many generations of citizens worldwide [2].

Today, young people in Europe are increasingly involved in decision-making processes that shape the future of the environment. This social group is particularly significant in this context because their attitudes and choices have a strong impact on the future in which they will live. The way in which young generations perceive sustainable development and ecology is influenced, among other factors, by technology and social media, which both support positive changes and introduce disinformation [3]. Critical thinking and information assessment skills are becoming crucial for shaping the opinions on which young people will base decisions that affect not only their future but also that of subsequent generations. Therefore, it is important to examine how young people define sustainable development and what decisions they believe will lead to a sustainable society.

The main goal of the author's considerations is to present the essence of the definition of being an agent of sustainable development from the perspective of young Europeans. Additionally, an analysis was conducted on the impact of internet use and marketing strategies on building a sustainable future for Europe, taking into account the opinions of youth from selected European countries collected during the Future of Europe 2024 Project.

### **Social responsibility and sustainable development in the EU**

For many years, the European Union has placed significant emphasis on corporate social responsibility (CSR) and sustainable development (SD). In the face of growing challenges related to climate change, environmental degradation, and social inequalities, the EU has committed to taking actions aimed at protecting natural resources and promoting sustainable development. This is one of the factors prompting EU member states to implement sustainable solutions within their territories to address the ecological security needs of their citizens and to recognize them as equally important as other common needs, e.g., energy or military security [4].

Due to the widespread adoption of CSR and SD concepts not only in academic literature but also in business practice, it is important to clearly define what exactly they represent. The diversity and multidimensionality of their application can lead to erroneous or inaccurate interpretations, which in turn undermines scientific reliability and leads to ineffective strategic decisions within organizations [5]. Sustainable development and corporate social responsibility are independent concepts; however, when implementing their principles and recommendations, they often converge. Visible interdependencies arise at the level of formulating and operationalizing their goals, selecting performance indicators, and verifying results [6].

Literature indicates that the concept of SD dates back to the 18th century when it was used in the forestry industry in Europe to ensure the continuous supply of wood without negatively impacting the availability of this resource for future generations [7]. This ecological vision ultimately led to the official definition of SD in 1987 by the

World Commission on Environment and Development: “Sustainable Development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concepts of “needs”, in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization of the environments ability to meet present and future needs. Thus the goals of economic and social development must be defined in terms of sustainability in all countries developed or developing, market-oriented or centrally planned.” [8].

Corporate social responsibility was defined as early as 1953 as: “an obligation to pursue policies to make decisions and to follow lines of action which are compatible with the objectives and values of society” [9]. Since then, various authors have supplemented or created new definitions of this term ([10], [11], [12], [13]). According to one such definition presented by the World Business Council for Sustainable Development (WBCSD), CSR is: “the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life” [14]. The Commission of the European Communities in its interpretation also emphasizes that actions stemming from the CSR concept should be implemented voluntarily and result from the integration of concern for the environment, business, and the interactions between those managing economic entities [7].

### **The importance of communication and marketing in promoting sustainable practices**

Current research indicates that many companies operating based on CSR and SD values face challenges related to transparent communication, community engagement, and adequately publicizing initiatives focused on these concepts [15]. Research also highlights that the Internet has become an essential communication tool for CSR and SD, although its potential is not fully utilized. Some companies, by focusing primarily on showcasing their sustainable practices, limit their communication capabilities, transforming them into a one-way message [16]. This approach significantly decreases the potential of a brand to engage in reciprocal communication with customers and build common understanding and trust [17].

Authors focusing on brand communication strategies that incorporate CSR and SD point to sustainable luxury brand communication (SLBC) as an effective concept supporting the development of brand strategies. It assumes that by leveraging the influence of global brands as trendsetters, educational content is delivered to consumers, aiming to change perspectives, consumption habits, and social attitudes towards more sustainable ones [18]. An integral element of such a concept involves

companies investing in CSR development, which in turn leads to increased brand recognition and demand for its offerings [19].

The use of CSR and SD in brand communication activities aims to present the brand as engaged in societal well-being and to evoke emotional reactions from consumers, encouraging them to interact with the brand. To this end, the Cause-Related Marketing (CRM) strategy is often employed, which involves integrating the brand's existing perceptions with current social events and jointly assessing both elements. By highlighting the connection between products and, for example, charitable goals, more lively and emotionally stimulating content is created, which can increase the effectiveness of so-called transactional programs, where a portion of the profits is donated to a selected social cause [20].

Challenges to the CSR and SD concepts include, among other things, consumer skepticism towards the pro-social and pro-environmental intentions declared by companies. In some cases, a negative attitude towards the content presented by brands is even noticeable, as it is perceived as an attempt to restrict consumers' freedom to make individual decisions in favor of promoting certain behavior patterns. Consumer distrust also increases due to unethical marketing practices aimed at deliberately misleading consumers about how the brand operates (greenwashing) [21]. Although most researchers focus on the positive aspects of CSR and the benefits of its practice, companies also engage in activities that negatively impact social well-being by making irresponsible operational decisions. This behavior is known as negative corporate social responsibility (NCSR) and leads not only to the deterioration of the brand's image but also to its financial situation [22]. In order to control effectiveness and efficiency of the marketing strategy used by a company as well as assure it aligns with the core of the brand, it would be beneficial to have a marketing audit system, which provides marketers with up-to-date information and gives possibility to achieve goals set by the brand [23].

### **The role of young people in achieving sustainable development goals**

Social welfare and environmental protection are becoming areas of interest for increasingly younger generations year by year. This trend is driven by broad access to information, the enhancement of educational programs implemented in schools as well as growing social awareness and sensitivity. Studies indicate that young people are not indifferent to marketing campaigns based on Corporate Social Responsibility (CSR) and Sustainable Development (SD). Young consumers are more likely to engage with companies that incorporate CSR if these initiatives align directly with their own interests, such as career programs or environmental protection efforts. However, if a company promotes these programs while simultaneously producing goods that are not classified as eco-friendly or healthy, it may lead to the opposite effect, causing a decline in trust towards the brand and negative perceptions of it [24]. Moreover, compared to



older individuals, young people exhibit lower trust towards green marketing, especially if they suspect it to be pseudo-ecological. They pay attention to, among other things, product labels and their ambiguous, misleading, or false content to verify inconsistencies. Unfortunately, identifying whether brands use greenwashing in their promotional activities remains a significant challenge for consumers. This highlights the insufficient consumer awareness of pseudo-ecological marketing, which confirms the need for further research in this area and the dissemination of acquired knowledge on a global scale [25].

Environmental awareness should be cultivated from an early age, as the family and education system play a crucial role in shaping pro-ecological attitudes and behaviors in future consumers. This awareness manifests itself in simple daily activities, such as conserving water and energy or making decisions to purchase eco-friendly products. Although green practices have already become part of European culture, it is important to transform this moderate tendency to follow socially desirable patterns into strong interest in environmental awareness, which would lead to the improvement of practices in sustainable development [26].

In this discussion, the author focuses on how young people from European Union countries define the role of an agent of sustainability and how, according to European youth, marketing strategies influence the promotion of pro-ecological attitudes among consumers. The presented data was collected during the Future of Europe 2024 project from representatives of seven European countries through interviews and panel discussions.

The main goal of this study was to identify how young Europeans define the role of an agent of sustainability. In pursuit of this primary goal, an attempt was also made to determine whether, according to the respondents, marketing communication influences the practice of pro-ecological attitudes among consumers and how do respondents understand the term of sustainability.

The study was conducted during the international European youth exchange program Future of Europe 2024, held from June 17-23, 2024, in Guimarães, Portugal. The project participants were citizens of France, Spain, Latvia, Germany, Norway, Poland, and Portugal. The program's objectives included, among others:

- increasing knowledge about the cultures of the participating countries,
- encouraging young people to engage in active citizenship in their local communities and globally after their participation in the program,
- connecting and engaging young people (18-26 years old) from European countries in discussions on various topics, exchanging ideas and needs to bring them back to their countries,
- connecting, promoting, and discussing the EU Youth Goals.

The research sample consisted of 35 respondents, representing the aforementioned EU countries (five people from each country).

The study was qualitative in nature. To gather results, interviews and panel discussions were used, allowing for a deep understanding of the topic and exploration of complex issues. Panel discussions facilitated interactions among participants, contributing to creativity and diversity of responses. Respondents, working in groups with representatives from other countries, developed answers to the questions presented by the moderator in an interactive format, while also having the opportunity to provide individual responses.

The panel discussion was divided into three main topics: (1) the essence of the concept of 'sustainability,' (2) the role of an 'agent of sustainability,' and (3) the impact of the Internet and advertising on consumers' pro-ecological attitudes. The results presented below are a summary of the most important findings and opinions from the discussion.

#### 1) The essence of the concept of 'sustainability'

Participants agreed that sustainability is a concept increasingly used in European business practices due to the stringent legal requirements imposed by EU policy and growing environmental awareness among citizens. The definitions created by the groups varied, but each included three common elements: people, environment, and time. According to the panelists, these three factors are crucial for a proper understanding of the concept of 'sustainability.' During the discussion, respect for the environment and ensuring future generations have the ability to use its resources were emphasized as fundamental components of the definition. Some key statements from the panelists included:

- 1) Preserving today's opportunities for future generations.
- 2) Balance between people and environment continuously over time.
- 3) It's a strategy of acting holistically with respect for nature and society, to ensure future generations have access to at least the same level of resources and opportunities as we do.
- 4) A group of people thinking about the consequences of their actions (in a contained system) in dimensions: social, economic, ecological.

The definitions created by the participants referred, to varying degrees, to the definition presented by the United Nations in 1987: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs" [27]. This discussion demonstrated that despite initial difficulties in clearly describing the essence of sustainability, the panelists were able to present its main assumptions.

#### 2) The Role of an 'agent of sustainability'

Panelists discussed the role of an agent of sustainability in contemporary society at both local and global levels. Figure 1 shows a word map of the terms most frequently

used by participants when responding to the question of who an agent of sustainability is.



AnyChart Trial Version

Fig.1 Most frequently used words during discussion about the meaning of agent of sustainability

*Source: Own elaboration.*

During the discussion, the panelists expressed a strong belief that every person in the world can be an agent of sustainability (AS) because the central mission is to create a balance between the environment and people. Emphasis was placed on implementing changes in various systems, including business practices and education. One of the fundamental functions of an AS was identified as the dissemination of knowledge and raising ecological awareness among others, as well as self-improvement in the latest sustainability practices. A key aspect in defining an AS was their involvement in putting pressure on politicians and governments, both locally and globally. This aspect was often highlighted by the participants, who believed it offers the greatest opportunity to fulfill the AS's mission of introducing changes aimed at reducing the negative impact of human activity on the environment.

Examples of exerting such pressure included proposals to undertake initiatives like organizing local communities into organizations with ecological foundations or

joining existing ones, encouraging and actively participating in strikes, boycotting unethical business practices, creating discussion panels involving experts and citizens, or drafting petitions directed at specific public authorities. According to the participants, an AS should also lead a lifestyle consistent with values that foster an open and safe community for people from different cultures, showing respect for natural resources, not by abandoning their use but by ensuring they have sufficient time to regenerate.

According to the panelists, identifying as an AS involves taking responsibility for cultivating ecological awareness, ensuring the needs of future generations are met, and making efforts to protect the natural environment as part of daily responsibilities. This last aspect was recognized during the discussion as the simplest to accomplish and, therefore, the fundamental criterion for being an AS. It involves changing behavior in terms of one's consumption. The ideal approach is to follow the 3R ideology – Reduce, Reuse, Recycle. Among the statements made by the panelists were the following:

- Be engaged with the balance between people and environment
- Thinking bigger than myself and acting accordingly. Putting pressure on politics.
- Being cautious of own actions to preserve our environment and aware how to sustain it.
- For me, being an agent of sustainability means to be an agent to the whole ecological concept and acting in that way to reach the climate and social justice, environmental, politic and economic future without damage the human rights and promoting the love and peace between people and around the world
- How can I change the system towards sustainability
- A person trying to maintain a lifestyle that meets their own needs as well as the needs of the future generations
- Working towards political and economic changes
- To make conscious decisions while thinking as a whole
- To be open for new ideas and adopt them in your life and educate other people
- Reduce, reuse, recycle. Turning off lights. Eat everything, don't waste food.
- Teach and learn.
- Taking care of future generations.
- Advocate for sustainable development in one's country/community. Politically (put pressure on governments to create change). Raise awareness. Support organizations.
- Inform, sensitive, denounce and make it political.
- Think about every step of my consumption.
- Meet the needs of the present without harming those of the future.
- Communication and raise your voice about what you must do.

### 3) The impact of the Internet and advertising on pro-environmental consumer attitudes

In the initial part of the discussion, participants pointed out the threats and focused more on the negative impact of the Internet and advertising on pro-environmental consumer attitudes. They quickly identified aspects of daily life that deteriorate due to media and marketing communication, such as misinformation, increased consumerism, the promotion of fast fashion, greenwashing, and online hate. The panelists agreed that the online space and marketing communication of companies are flooded with information that is difficult to verify and often negatively affects the process of implementing environmental changes.

However, the discussion also highlighted the benefits of the Internet and advertising in promoting more sustainable habits. The most frequently mentioned advantages included the rapid flow of information and the ability to communicate with representatives of other cultures. Participants recognized that the media can publicize certain issues or unethical business practices very quickly, reaching a wide audience, which complicates potential attempts to hide or conceal them. The panelists also noted the great potential in benchmarking ecological solutions used in other countries and in creating international communities and movements oriented toward sustainable development.

When discussing online hate, participants proposed an approach different from the standard one, and described a solution where "hate" refers to boycotting brands that mislead consumers by falsely promoting their products as being produced through ecological processes, supporting pro-ecological organizations, or other false claims that brands use to present themselves as environmentally and socially friendly, while in reality, they do not engage in the declared actions. The discussion indicated that young Europeans feel a greater sense of control thanks to awareness of such a solution. Although it was clearly stated in the conversation that the Internet and advertising are merely tools in the hands of people and their use depends mainly on the motives of content creators, participants believed that everyone can control their actions in the online space and make informed consumer decisions. The way to achieve sustainable responsibility for decision-making is through continuous education and adaptation to changing environmental, social, and economic conditions. Below are some of the participants' statements:

- Too much information, hard to filter. Presenting wrong information. Green washing in ADS.
- Hating on people doing bad stuff. Media can shed light on problems (fewer hide it).
- Media is fueling our consumerist economy of fast-fashion and consumerism. On the other hand, apps like TIKTOK or lifestream show new habits that we can do every day.

- Good: increases diversity, publicity for practices that impact others. Bad: disinformation, propaganda, bullying.
- Good: share information, experience, knowledge; create political associative movements for sustainability, make sustainability fun and trendy. Bad: fake news, many ads to sell you useless things -> consumerism; informational noises.

The results of the panel discussion provide a better understanding of the concept of sustainability in social, educational, and business contexts. The perspective of young Europeans shows that, despite coming from diverse cultural and educational backgrounds, they demonstrate a strong commitment to environmental protection and a desire to have a real impact on policy in this area, not only within their own countries but across the entire EU community.

From the discussion, three key areas of issues can be concluded:

1. The essence of the concept of 'sustainability'

The panelists agreed that the definition of sustainability must encompass a combination of three key elements: people, the environment, and time. Despite some differences, the participants were able to identify the fundamental aspects of sustainability (in line with the UN's 1987 definition), emphasizing that it involves respect for the environment and ensuring its resources for future generations. This points to a transnational and transcultural ability among young Europeans to understand the core values of sustainability.

2. The role of an 'agent of sustainability'

The study participants highlighted the universality of the AS role, recognizing that anyone can become one by taking on the challenge of creating a balance between the environment and people. An AS should educate, raise ecological awareness, and exert political pressure to implement pro-environmental changes. Maintaining an appropriate lifestyle based on the 3R ideology and making conscious consumer decisions are also characteristic of being an AS.

3. The impact of the Internet and advertising on pro-environmental consumer attitudes

The panel participants unanimously emphasized the numerous threats posed by the Internet and advertising that can negatively affect pro-environmental consumer attitudes. The most significant concerns relate to the risk of fostering and increasing consumerism, greenwashing, and misinformation. As a good solution to these problems, they pointed to educating oneself and gaining knowledge about other cultures and practices used in countries around the world, where the use of the Internet is particularly helpful. The rapid flow of information and the exposure of unethical business practices by companies were identified as definite advantages.

The panel discussion highlighted the importance of sustainable development as a concept that must be rooted both in long-term thinking and in the daily actions of

individuals and societies. The panelists emphasized the need for individuals to take on the role of agents of sustainability and to approach content delivered through the Internet and advertising with a critical eye. This confirms the growing skepticism towards the increasingly widespread marketing based on CSR [25]. To promote pro-environmental attitudes, it is necessary to both educate the public and strengthen mechanisms that enable pressure on governments and corporations regarding environmental protection issues. Young people feel an increasing sense of control over their future and that of future generations by expanding their knowledge and improving their skills in verifying and assessing the reliability of the information provided to them. Based on this statement, it is understandable why they perceive improving educational systems as one of the fundamental ways to fight for sustainable development.

The conducted study provides a basis for further research on the discussed issues, which will allow for the inclusion of a broader population than this relatively small group of respondents, which was limited by the organizational capabilities of the project.

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