



# **MECHANISMS FOR ENSURING INNOVATIVE DEVELOPMENT OF ENTREPRENEURSHIP**

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In the monography considered the conceptual aspects of system support for the innovative development of business entities; the results of monitoring were studied and diagnostics of modern problems of innovative development of business entities were carried out; financial mechanisms for ensuring the innovative development of business entities have been worked out and strategic analytical support for the innovative development of business entities. The management toolkit for ensuring the innovative development and digitalization of business entities is presented, as well as elaborated recommendations on the legal regulation of the innovative development of business structures.

Keywords: financial sphere, innovations, entrepreneurship, innovative development, digitalization, management mechanisms, strategic management tools, competitive development of enterprises, business efficiency.

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# **CHAPTER 1. CONCEPTUAL ASPECTS OF SYSTEM SUPPORT FOR INNOVATIVE DEVELOPMENT OF BUSINESS ENTITIES**

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## **THE SYSTEM OF FINANCIAL SECURITY FOR INNOVATIVE BUSINESS DEVELOPMENT**

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The objective need to ensure the innovative development of the enterprise as a prerequisite for its survival in the global competitive environment is demonstrated and confirmed by global economic trends.

For domestic enterprises, ensuring innovative development is one of the prerequisites for their survival, exit from the crisis and potential entry into world markets. The modern view of innovation is not only technological or product innovation, which has many problems in terms of implementation in conditions of scarcity of resources and scientific and technical support, but also managerial, marketing, organizational and communication innovations. This type of innovation can become not only an effective prerequisite for the sustainable development of business entities, but also a catalyst for building up all components of the innovative potential, which is the basis of the complex innovative development of the enterprise.

Thus, the choice of tools and means used to ensure innovative development acquires special importance, increasing the price of economic and social consequences of decisions and actions adopted for their implementation. Formation of a system for ensuring innovative business activity becomes one of the main tasks of the state that

has chosen the path of innovative development. Especially the problem of forming an effective system for ensuring innovative business activity became relevant for Ukraine with the signing of an agreement with the EU, which increased competition on the Ukrainian market.

Innovative systems were investigated in their works by both domestic and foreign scientists. In particular, K. Boyarinova, V. Gusev, A. Kazikhanov, K. Laursen, T. Pisarenko, T. Kvasha, Yu. Drachuk, K. Kopishinska and other scientists considered the processes of innovative development of enterprises and their innovative systems. However, the importance of the system for ensuring the innovative development of the enterprise in its innovative development has not been fully explored.

In view of the above, there is a need to fully understand the term "innovation" from both a scientific and legislative point of view. J. Schumpeter in his scientific work "Theory of Economic Development" (1911) formulated a holistic theory of innovative development, the central point of which was the introduction of the economic category "innovation" as a necessary production function caused by changes in production factors, resources or their combination. J. Schumpeter singles out the following components of innovation:

- introduction of new products, goods, services, new types or unknown to the consumer;
- application of a new production technology, introduction of an unknown method (method) of production for a certain industry;
- use of new materials, types of raw materials, as well as their sources;
- opening and development of a new product consumption market;
- undermining the monopoly of competitors or monopolizing the market due to the production of own, previously unknown products;
  - introduction of a new production organization, management process, organizational structure or their improvement [Schumpeter J., 1934].

The disclosed content of innovation reflects a broad approach to its definition, from which it follows that innovations can be created in any subject area of human activity.

The scientific discourse on innovative activity began to actively develop already in the 21st century due to the acceleration of the processes of obtaining knowledge and their implementation in innovative products and technologies, although its birth took place at the end of the 80s of the 20th century. A system that is capable as a whole to ensure the generation of knowledge, to facilitate its transformation into new technologies, products and services that are implemented in local, regional, national and global markets, can be called an innovation system [Drachuk Ju. Z., at al., 2018].

Gusev V.O. in his textbook "State innovation policy as a means of developing the national economy" derives the concept of innovative activity as follows: there is a typical definition of innovative activity as the activity of bringing scientific and technical ideas, inventions, and developments to a result that can be practically used. In its entirety, innovative activity includes all types of scientific activity, design and construction, technological, research developments, activities for mastering innovations in production. Innovative activity by nature is a systemic and multi-faceted activity, which combines organizational, social and technological innovations and during the implementation of which a new model of development, transformation and use of economic, natural and social resources is formed [Ghusjev V.O., 2007].

From the above V.O. Gusev receives an integrated universal definition: innovative activity is purposeful actions carried out in any type of activity or in any of its subject areas by involving means of intellectual activity and mechanisms of its support inherent in this subject area of activity, with the aim of obtaining various effects (economic, ecological, scientific and technical, social and other) from the introduction into practice of a new product (innovative), which includes a new product, the latest or improved technology, a service, an original approach to solving a problem demanded by society or its institutions, while the qualitative characteristics of both the sphere of innovative activity itself and the segment of consumption or application of this product are changing [Ghusjev V.O., 2007].

A group of Ukrainian scientists led by V.V. Dergacheva in his research on ensuring the innovative development of Ukrainian industry [Drachuk Ju. Z., at al., 2018] followed the evolution of the concept of "innovation system" and came to the

conclusion that from the 1980s until now, the understanding of the innovation system has developed from the national and regional level to the micro level - the innovation system of the enterprise.

The micro level, i.e., the innovation system of the enterprise, has not yet become widespread in scientific circles, although it is the local innovation system that acts as a source of generation and implementation of new knowledge and is in constant interaction with regional and national systems. .

In the modern scientific field, target, resource-information and process approaches to the formation of the concept of "innovation system of the enterprise" dominate (Table 1).

In our opinion, the modern conditions of management of business entities require a systematic approach to the formation of an innovative system of the enterprise, which excludes the use of only one of the approaches. The key element is the innovative potential of the enterprise, ensuring conditions for its implementation in order to increase competitive positions on the market.

The innovative system of the enterprise, thus, is a set of principles, procedures and information and financial mechanisms for realizing the innovative potential of the enterprise in order to obtain competitive advantages.

As we can see, the enterprise's innovation system is closely related to its competitiveness strategy and investment strategy.

The strategy for ensuring the competitiveness of the enterprise is a comprehensive strategy of the enterprise, which includes long-term action programs for all functional areas of its activity, aimed at forming the appropriate level of competitiveness and competitiveness [Mandych O.V., 2017].

One of the most important factors of an enterprise's effective competition is its innovative potential and ability to implement it. Considering the impact and methods of creating a competitive advantage, it is important to divide innovations into incremental and radical. Incremental innovations are aimed at improving products and technologies. The introduction of such innovations has a systemic nature and ensures gradual growth or maintenance of competitiveness.

**Table 1 - Scientific approaches to the formulation of the concept of  
"enterprise innovation system"**

<b>Approach</b>	<b>Key element</b>	<b>The essence of the approach</b>
Targeted	Competitive position of the enterprise on the market	A set of principles, goals, tasks, structures, methods and management tools which contribute to successful commercialization of results research and design works with the purpose a level higher business competitiveness
Resource and information	The role of resources and information in innovative activity	Set of resource potential, established principles, procedures and informational, financial mechanisms that provide generation of ideas, their selection, implementation and value creation within the organization
procedural	Subjects of innovative activity process and connection between them	The set of economic entities and types of activities, resource provision and institutions, as well as the connections between them, important for increasing the level of efficiency of the innovation process at the enterprise

Source: Compiled from [Kitchin J. 1923, Crum W.I. 1923, Drachuk Ju. Z., at al., 2018, Salomon K., 2000]

Radical innovation involves the creation of new technologies, products and business concepts. They are revolutionary in nature, providing relatively long-lasting competitive advantages.



Incremental and radical innovations affect important areas that are decisive in the conditions of innovative development, namely:

- the economy and the sectors that make it up;
- enterprises and their business activities;
- products and processes [Blauh M., 2011].

The investment policy is part of the general financial strategy of the enterprise, which consists in the selection and implementation of the most effective forms of its real financial investments in order to ensure high rates of innovative development of the enterprise and constant growth of its market value [Bihdan I.A., 2017].

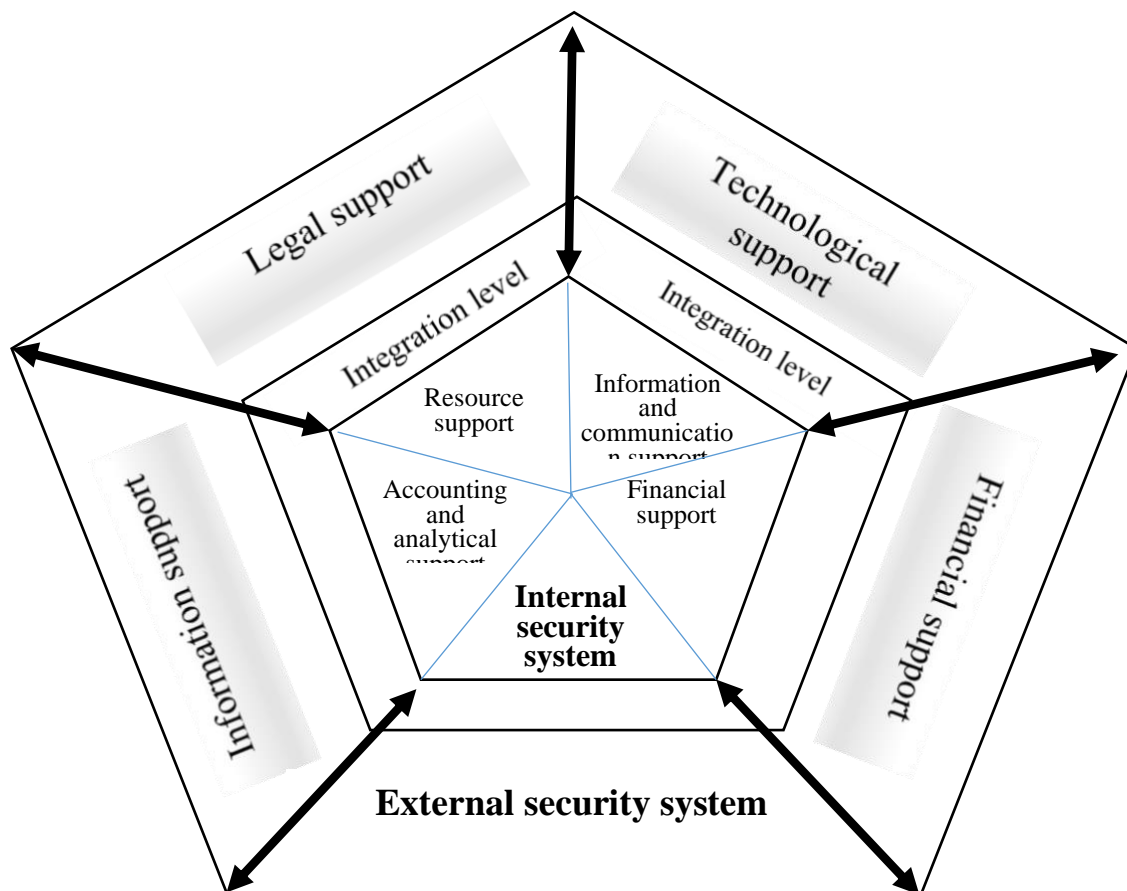
Some authors consider it expedient to consider the system of ensuring the innovative development of enterprises as an innovative (entrepreneurial) environment - an open system defined by a set of various subsystems, i.e. levels, each of which has its own subjects, i.e. stakeholders of activity. organization for strategic purposes [Sieriebriak K. I., 2016].

Taking into account the impact on business of factors independent of its activity, unmanaged, it is necessary to distinguish the internal and external levels of the innovation environment. The external level is formed as a result of the influence of legislative, political, economic, technological, social and other factors, which are determined mainly by the activities of the state and foreign economic processes. This level is the general environment for the development of enterprises, which determines their organizational culture and innovative activity. The internal innovation level contains a number of systems for ensuring innovative development and is primarily related to the activities of the company's employees and management.

Management professor R. Daft, in addition to the external and internal levels, also defines the integration level as the immediate environment of the enterprise, that is, a functional environment characterized by a set of tasks of innovative development of enterprises in the service sector [Daft R., 2021].

Thus, the system of ensuring innovative development of enterprises is defined as a set of internal and external factors and conditions of enterprise development, which

has a direct and indirect influence on the internal level of innovative development of enterprises (Fig. 1).



**Fig. 1 System of ensuring innovative development of enterprises**

Source: author's own development based on [Schumpeter J., 1934, Ghusjev V.O., 2007]

The resource provision of the innovative activity of the organization should be understood as a complex process of mobilization, accumulation, distribution of resources, as well as implementation of planning, control, and monitoring aimed at effective and rational use of the resources of the innovative development of the enterprise. Resource provision of innovative activity involves such processes as determining the need for resources, mobilizing resources, drawing up and implementing a budget not only of monetary funds, but also of stocks, fixed assets, sales of products, etc.

The system of information provision at various levels (national, regional, branch) traditionally includes special institutions that ensure the creation of information resources, as well as their collection, processing, storage and distribution. These institutions are called to act in the conditions of innovative development of the economies of different countries and to provide information needs of all participants of the innovation process at all its stages. This vision of the essence of innovative information provision is acceptable for the external level, but acquires the characteristics of information and communication provision when it comes to the internal level of the enterprise.

Communications in this case consist of two components. The first is the exchange of information regarding innovative activities between the enterprise's divisions, the enterprise and the integration level (stakeholders), the external and internal innovation environment of the enterprise. The second is the use of modern communication networks to collect and transmit information, which is the basis of innovative development.

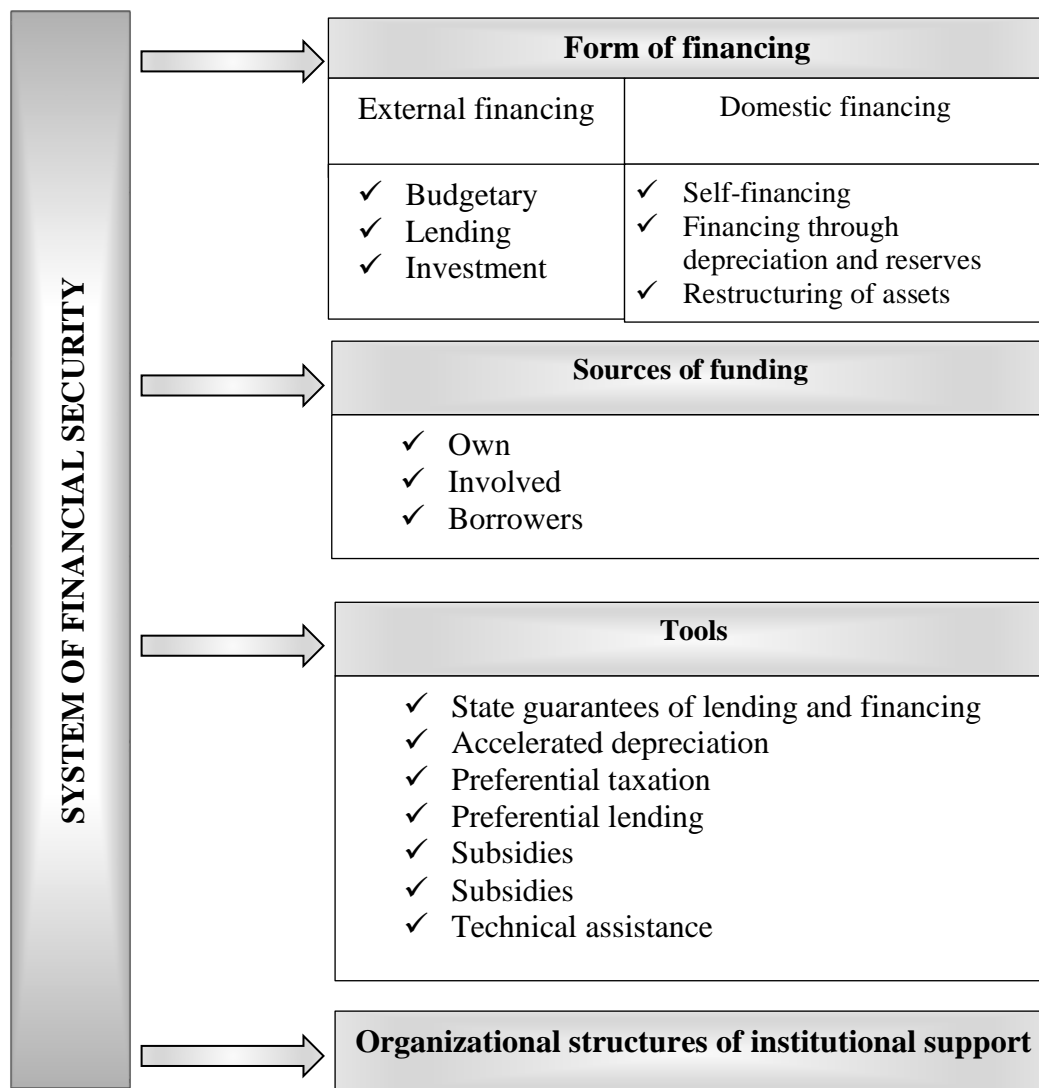
The effectiveness of information support for innovative development is directly dependent on the system of accounting and analytical support. However, today, information on income, expenses, cost of production and financial results from innovative activities is not displayed in a systematized form.

There are no clear approaches to summarizing information about innovation processes in the registers of analytical accounting and internal reporting, which would provide relevant information for management needs. To ensure the effectiveness of the implementation of innovative processes at enterprises, it is necessary an effective, scientifically based system of accounting and analytical support for managing the costs of innovative activities.

All forms of financing activities according to the system of forms of financing, depending on the sources, are divided into two groups:

- 1) internal financing - financing at the expense of cash flows (self-financing, financing at the expense of depreciation and reserves) and financing as a result of asset restructuring;

2) external financing - partial financing, credit financing and state support measures (subsidies, subsidies, benefits).



**Fig. 2. Component systems of financial support for innovative development**

Source: author's own development based on [Schumpeter J., 1934, Mykytjuk P. P., 2015]

Considering internal financing as the main forms of financing the activities of small enterprises, it is possible to take into account:

1) self-financing, which involves the accumulation of received profits and the preservation of their amounts, which allows to use these funds as a source of financing in the future. Withholding is possible in the following forms: refusal of distribution or

postponement of profit distribution among participants; formation of passive reserves due to deductions from income before taxation;

2) financing at the expense of depreciation, which is financing at the expense of positive cash flows obtained as a result of reimbursement of depreciation. Since small agricultural enterprises can direct the amount of amortization received in the revenue to various purposes (not only for the reimbursement of the cost of fixed assets), they have the opportunity to finance any projects, including the expansion of production;

3) financing as a result of asset restructuring is achieved due to the release of capital invested in fixed and working capital through the sale of (surplus) property at a price higher than the book value.

Leasebacks can be used as internal financing that has the characteristics of external financing for a business. Leaseback includes transactions in which the lessee and the supplier, i.e. the seller, are the same person. The lessee (producer) sells his equipment or the enterprise as a whole to the lessor and at the same time rents it out. The tenant retains the right to own and use the equipment. Thus, the funds received for the sold property can be directed by the lessee to production and investment purposes. At the same time, according to the lease agreement, the lessee will make payments according to the agreement in the usual manner. This type of leasing can be equated to receiving money against property, but in this case, the security is not issued. This form has features of external financing, but is more closely related to asset restructuring, which is a form of internal financing.

The most relevant form of external business financing is short- and medium-term lending: a commercial (commodity) loan that provides for payment for the purchase of goods, raw materials and with installment payments, which reduces the outflow of capital in this direction and allows the use of funds that are not intended for the current moment and, at the same time, due to the purchase of goods, works, services to prevent the stoppage of production; the attraction of bank loans at interest for a short term is widely used, which allows financing due to the inflow of capital for the amount of the loan. When choosing from the last two considered forms, an assessment is made:

a) the cost of a commercial loan based on the loan financing rate;

b) the cost of a bank loan based on the premium to the price (discount for payment and settlement in cash) and the installment payment period. When comparing options, the choice is made in favor of the form with the lowest cost; a credit line can be used by a small agribusiness. It is convenient to issue a credit line at the bank where the company's current account is opened. Since the line of credit is a somewhat risky loan for the bank, the cost of this type of lending to the business is higher than obtaining a conventional short-term loan [Lupenko Ju. O., et al., 2020].

Long-term lending is practically not found in small business activities due to the fact that the level of creditworthiness does not allow taking such a bank loan or its cost becomes high. Such a form of external financing as the application of state support measures is optimally suitable for small businesses. Factoring and leasing are substitutes of loan financing acceptable for small businesses. Significant differences between these forms do not allow to include them in the composition of forms of loan financing. Factoring is the transfer (sale) of receivables incurred for the sold products, works, and services of the factoring company.

The cost of factoring for an enterprise that transfers (sells) the right to demand receivables includes:

1) credit interest for payment of receivables, which can be at the same level or slightly higher than the credit rate for a bank loan;

2) factoring fee, which covers the costs of the factoring company for the provision of various services stipulated in the concluded factoring agreement. The level of this fee depends on the list and volume of services provided and on the amount of receivables realized under the factoring contract (on average it is 1-3%);

3) compensation for the risk of the debtor not paying his debt, the amount of which is affected by the creditworthiness of the debtor; determined, as a rule, in the amount of up to 1% of the amount of receivables. To determine the effectiveness of factoring and to make a decision on its use by small agribusiness enterprises, its relative value is calculated, which is determined by comparing the costs of paying the cost of factoring and the amount of money received as a result of the sale of receivables.

If this cost is below the level of the average market rate for bank lending, then the use of factoring is economically justified. The positive aspects of using factoring for small businesses are: acceleration of the turnover of receivables, which entails a reduction in the turnover of current assets and an increase in the profitability of assets; reduction of costs for accounting for receivables; increasing the company's liquidity and stability. The use of factoring is impossible in the case of concluding a contract with a counterparty who buys goods under the conditions of transfer of ownership to the counterparty only after its full payment.

According to the Law of Ukraine "On Financial Leasing", leasing is an operation in accordance with which the lessor (lessor) undertakes to purchase the property specified by the lessee (lessee) from the seller specified by him and to provide this property to the lessee. property for a fee in temporary possession and use [About financial leasing, 2021].

Several forms of leasing can be distinguished: operational leasing; financial leasing; reverse leasing. Operating leasing has the characteristics of leasing to a greater extent, it provides for the transfer of the right to own and use property for a short-term period, as a rule, less than the period of useful use of the property. After the expiration of the operational leasing contract (or earlier at the request of the lessee with prior notice to the lessor), the lessee may choose one of the following options:

- 1) return property (for example, equipment) and terminate contractual relations with this lessor;
- 2) extend the operational leasing contract (possibly on the most favorable terms);
- 3) acquire ownership of previously leased property at a reasonable residual market value.

Financial leasing is the acquisition of the right to own and use property (for example, equipment) for a long term, which maximally corresponds to the period of useful use of the object. The subject of the financial leasing contract is specific property needed by the lessee and purchased by the lessor from a specific supplier chosen by the user of the property. After the expiration of the financial leasing contract, ownership of the leased object is transferred to the lessee, taking into account the

payment of the purchase price of the property. Since financial leasing provides for the return of the value of the leased property during the term of the leasing agreement of the parties, the annual commission rate under this type of agreement is lower than under an operational leasing agreement. Financial leasing can be considered by small enterprises as an optimal form of long-term financing.

The use of financial leasing has many advantages compared to other forms of financing, especially when it acts as a method of reproduction of fixed assets.

All participants in the innovation process should be interested in combining their interests and efforts in creating and applying new knowledge and technologies in order to enter the domestic and foreign markets with high-tech products. In implementing the mentioned interaction and thus creating an economy based on knowledge, the central role is played by the state power.

Institutional support of innovative development is a set of legislative, informational, infrastructural and financial measures carried out by regulatory entities and institutions at the national, subnational and micro levels, with the aim of achieving a socio-economic effect.

State financial regulation is one of the important instruments of influencing the innovative development of the country.

Ensuring a targeted impact on the rates and quality of economic growth requires the formation of an appropriate system of financial regulation aimed at managing results based on the improvement of institutional support for financial and economic transformations.

Ordering the regulatory goals of financial policy allows to achieve the appropriate balancing of the process of redistribution of financial resources in society, the level of satisfaction of public needs. It is necessary to ensure the transformation of the financial mechanism into an effective means of implementing the innovative development strategy.

Important tasks in the conditions of transformational transformations are the implementation of an effective budget and tax policy, increasing the level of transparency of the budget process.



This will provide an opportunity to increase the investment component of the domestic economy and increase the amount of tax revenues to the budget, reform the tax system and use the tax potential of territories to ensure innovative development of the country. At the same time, it is important not only to optimize the use of the tax potential of territories, but also to create favorable conditions for the growth of innovative activity of business and the economy as a whole, as well as due to the introduction of the principles of transparency of subjects of tax legal relations, restoration of trust between taxpayers and the state.

The institute of budget regulation should be based on a set of forms, means, mechanisms for the formation and implementation of budget policy tasks, which determine the conditions of the relationship between the participants of the budget process.

The budget policy of the state as a dynamic system that develops depending on the socio-economic needs of society must use appropriate regulatory mechanisms, taking into account foreign experience.

During the economic crisis caused by the coronavirus pandemic, the share of research and development expenditure in the gross domestic product (GDP) in Ukraine, according to state statistics, decreased from 0.75% in 2010 to 0.43% in 2020 [State Statistic Service of Ukraine, 2021]. In the same period, this indicator in the EU countries increased from 1.92% to 2.14%, the growth dynamics of the specific gravity is observed in all the countries of the European Union except Romania, Slovenia, and Hungary. The structure of sources of financing of the GDR in the EU countries as a result of 2019 is as follows: business sector - 58.6%, public sector - 29.2%, higher education sector - 1.1%, private non-profit sector - 1.5%, funds from foreign sources 9.6%. In Ukraine, the structure of sources of funding for scientific and research work is significantly different from that formed in the countries of the European Union over the last ten years. Thus, almost half of all expenditures on the GDR are financed by the state, but in recent years there has been a tendency to decrease the share of this source of financing (from 49.5% in 2010 to 46.3% in 2019). A significant share, 21.7% of the total volume of financing, is provided by funds from foreign sources, which is different

from European countries, but reflects the general trends of the countries of the former socialist camp. So, for example, in Bulgaria, 33.1% of the total volume of GDR is financed by foreign investments, in Latvia - 41.5%.

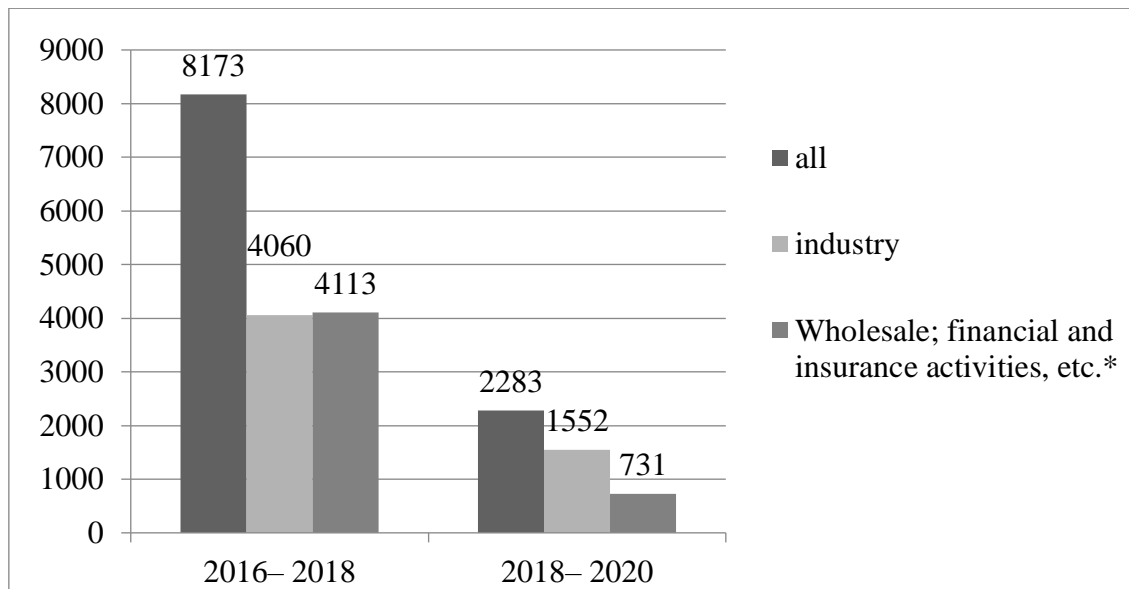
Each of the countries has its own characteristics of innovative development and forms of stimulating innovative activity, which usually consist of preferential taxation and crediting, subsidies, grants (Table 2).

The crisis caused by the coronavirus disease pandemic had a negative impact on the number of innovatively active enterprises, the total number of which decreased by 5,890 units (Fig. 1), their share in the total number of enterprises decreased from 28.1% in 2016-2018 to 8.5% in 2018-2020. The innovation activity of small and medium-sized enterprises decreased at the fastest rate. Attention should be paid to the sharp decrease in the number of business entities that implemented new organizational methods.

**Table 2 - Comparison of funding sources and expenditures for the NDR in 2019**

Sector	EU		Ukraine	
	The share of financing costs for research work	The share of expenses for research work of the GDR	The share of financing costs for research work	The share of expenses for research work of the GDR
Entrepreneurial	58,6	66,5	30,5	59,3
State	29,2	10,9	46,3	34,6
Higher Education	1,1	21,8	0,3	6,1
Private non-profit	1,5	0,8	0,1	-
Funds from foreign sources	9,6	-	21,7	-

Source: summarized by the author based on the data [State Statistic Service of Ukraine, 2021, Eurostat 2021].



**Fig. 2. The number of innovatively active enterprises by economic sector**

Source: author's own development based on [State Statistic Service of Ukraine, 2021].

The study "Small Business Mood Index" conducted by the European Business Association testified that the economic situation in the country is the worst of all the components of the Index, according to survey participants. Yes, 80% consider the current economic situation unfavorable for doing business. The main reasons for this are the low purchasing power of the population, the impact of quarantine restrictions, the tax burden and fiscal pressure [National platform for small and medium business, 2021].

General economic trends indicate that 82.2% of enterprises have no desire to innovate, and consider low demand for innovations in the market, previously introduced innovations, very low competition of the enterprise in the market, lack of good ideas or opportunities for innovation as good reasons. for this [Liashenko V. I., at al., 2019].

According to the results of the study of the dynamics of changes at the macro level, it should be noted that there was a decrease in overall innovative activity, SMEs in the service sector were most negatively affected, which is largely a consequence of the impact of the socio-economic crisis.

Thus, due to the unstable political and economic situation, subjective and objective reasons of an intra-economic nature, the domestic economy does not have a mechanism for organizing favorable conditions for innovative business development.

Ukraine's chosen path of integration into the European Union requires convergence and integration of the national economic system with the systems of the EU countries. This puts Ukraine in front of the choice of introducing the model of development that is accepted by the EU as the basic one, that is, the model of innovative development.

Special requirements for the nature and pace of development of the national economy after its exit from a multi-year deep crisis state are the tasks of ensuring its reproductive innovation cycle on a new technological basis in the conditions of a market economy, as well as ensuring the social orientation of this reproductive cycle with the most effective use of the innovative potential of the country, internal and external resources, the achievement of a faster pace of development dynamics compared to the leading countries of the world in accordance with the direction of progress of the world economy.

Thus, the adoption of an innovative model of the development of the national economy will ensure its competitiveness and entry into the path of sustainable development. Therefore, the transition to an innovative model of the development of the national economy is gradually becoming an imperative of state policy. This consists, first of all, in the establishment of effective legal regulation of relations in the field of innovation.

The modern regulatory and legal framework regarding scientific, technical and innovative activities includes about 200 documents. In particular, the national innovative legislation includes the norms of the Constitution of Ukraine, the Economic Code, the Law of Ukraine "On Innovative Activity", the Law of Ukraine "On Priority Areas of Development of Innovative Activity in Ukraine", the Law of Ukraine "On Investment Activity", the Law of Ukraine "On Scientific and Scientific technical activity", the Law of Ukraine "On the special regime of innovative activity of technological parks" and other normative legal acts, which determine the legal,

economic and organizational principles of state regulation of innovative activity in Ukraine, establish forms of state stimulation of innovative processes and are aimed at supporting the development of the economy of Ukraine in an innovative way.

The initial legal prerequisites of the state innovation policy are laid down in the Constitution of Ukraine. Thus, Article 54 guarantees citizens freedom of scientific and technical, as well as other types of creativity, protection of intellectual property, their copyrights. In this very article, it is determined that the state contributes to the development of science, the establishment of scientific ties between Ukraine and the world community.

In addition to the aforementioned legislative acts, the Concept of scientific, technical and innovative development of Ukraine, adopted by the Verkhovna Rada of Ukraine on July 13, 1999, should be noted separately. The concept contains the main goals, priority directions and principles of the state scientific and technical policy, mechanisms of accelerated innovative development, guidelines for the structural formation of scientific and technological potential and its resource provision. It defines the principles of relations between the state and subjects of scientific and scientific and technical activity, which are based on the need for priority state support of science, technology and innovation as a source of economic growth, a component of national culture, education and the sphere of realizing the intellectual potential of citizens. The Concept is designed for the period of stabilization of the economy and the achievement of its continuous development.

According to the legislation, economic entities of all forms of ownership that implement innovative projects in Ukraine receive state support, including enterprises of all forms of ownership that have the status of innovative.

Thus, in the modern understanding, innovation under various conditions is defined as a process and as the final result of activity (innovation), embodied in the form of a new or improved product, new services that have market demand or socio-economic significance for society, a new or improved technological a process used in practice. As a result of the use of innovations, the quantitative and qualitative characteristics of the spheres of production and consumption are significantly changed,

economic development is accelerated, and the intensification of social production is ensured.

According to the modern international standard established in the documents of the European Commission, innovation is considered as the final result of creative activity, which was embodied in the form of new or improved products that are sold on the market, or a new or improved technological process that is used in practical activities.

The above definition of innovation to some extent found its reproduction in Article 1 of the Law of Ukraine "On Innovative Activity", where innovation is given a universal definition: innovation - newly created (applied) and (or) improved competitive technologies, products or services, as well as organizational and technical solutions of production, of an administrative, commercial or other nature, which significantly improve the structure and quality of production and (or) the social sphere.

Innovative activity, like the basic category "innovation", does not have a clear definition among scientists, and the definitions of innovative activity in the legislation of Ukraine are not mutually agreed upon.

Thus, Article 1 of the Law of Ukraine "On Innovative Activity" stipulates that innovative activity is an activity aimed at the use and commercialization of the results of scientific research and development and leads to the release of new competitive goods and services to the market.

Article 3 of the Law of Ukraine "On Investment Activity" defines innovative activity as one of the forms of investment activity, which is carried out with the aim of introducing the achievements of scientific and technical progress into the production and social sphere, which includes: the production and distribution of fundamentally new types of equipment and technology; progressive cross-industry structural shifts; implementation of long-term scientific and technical programs with long payback periods; financing of fundamental research for the implementation of qualitative changes in the state of productive forces; development and implementation of a new, resource-saving technology designed to improve the social and environmental situation.

The Commercial Code of Ukraine considers innovative activity only in the field of management and defines it as the activity of participants in economic relations, which is carried out on the basis of the implementation of investments for the purpose of implementing long-term scientific and technical programs with long periods of payback of costs and the introduction of new scientific and technical achievements in production and other areas of public life (Article 325).

When defining the concept of innovative activity in educational and methodological and scientific papers, attention is focused on the connections of innovative activity with scientific and technical activity and with the implementation of scientific and technical developments.

The state, as one of the main subjects of innovative activity, ensures the introduction of innovative processes into the national economy and the establishment of perfect legal regulation of relations in this area.

In particular, state regulation of innovative activity, as provided for in Article 6 of the Law of Ukraine "On Investment Activity", is carried out by:

- definition and support of priority areas of innovative activity at the state, branch, regional and local levels;
- formation and implementation of state, branch, regional and local innovation programs;
- creation of a legal framework and economic mechanisms to support and stimulate innovative activity;
- protection of the rights and interests of subjects of innovative activity;
- financial support for implementation of innovative projects;
- stimulation of commercial banks and other financial and credit institutions that provide credit for the implementation of innovative projects;
- establishment of preferential taxation of subjects of innovative activity;
- supporting the functioning and development of modern innovative infrastructure [About investment activity,1991].

The State Agency of Ukraine for Investments and Innovations is the specially authorized central body of the executive power in the field of innovation, whose

activities are directed and coordinated by the Cabinet of Ministers of Ukraine through the First Vice Prime Minister of Ukraine. The main tasks of State Investments include: participation in the formation and implementation of state policy in the field of investment and innovative activity and the creation of a national innovation system to ensure the implementation of effective state innovation policy, coordination of the work of central executive authorities in the field of innovative activity.

The key problem of the state innovation policy is the formation and implementation of its priorities as the main and most important areas of system activity.

The state priorities of innovative activity are set out in the Law of Ukraine "On Priority Areas of Innovative Activity in Ukraine", which defines the legal, economic and organizational principles for the formation and implementation of priority areas of innovative activity in the country.

The priority areas of innovative activity in Ukraine are scientifically, economically and socially justified and legally defined areas of innovative activity aimed at meeting the needs of society in high-tech, competitive, environmentally friendly products, high-quality services and increasing the export potential of the state.

The priority areas of innovative activity in Ukraine oblige the executive authorities of all levels to create a regime of the greatest assistance in the implementation of works aimed at the implementation of the relevant priority areas, and the concentration of financial, economic and intellectual resources on them.

Stimulating competition and limiting monopoly ensures the spread of innovations at the general economic level. The regulatory basis for promoting competition is antimonopoly legislation aimed at the development of competitive entrepreneurship, limiting the activities of monopolistic enterprises, creating prerequisites for the demonopolization of the economy, and preventing unfair competition.

Therefore, for the transition of the country's economy to an innovative path of development, perfect regulatory and legal support is necessary. Norms on innovative activity, which are contained in many acts of different branches of the legislation of Ukraine and according to which innovations are components of the investment process,



form a legislative basis in Ukraine for the implementation and development of scientific, technical and innovative activities, which have quite distinct signs of constant improvement, but its effectiveness influence on the development of innovative processes is still insufficient.

Thus, having determined the place of financial support in the system of ensuring innovative development, it can be argued that financial support has a significant impact on the innovative development of business, occupies an important place among the components of the system of its support. Despite the large number of problems in the field of financial support for the innovative activities of enterprises, the lack of funds is the most important factor restraining the innovative development of business entities.

The study showed that in order to successfully conduct innovative activities, it is necessary to use various sources of financing innovative business activities. However, the most important source is the company's own funds. State support, on the contrary, occupies an insignificant share in the financing structure of innovative enterprises, which negatively affects their activities in this area as well.

Effective implementation of innovative activities should be accompanied by a well-thought-out investment policy that would provide for sufficient financial support (increased state funding of scientific research, support for small innovative enterprises, development of venture capital investment, improvement of the legislative framework). An innovative enterprise needs to create a favorable investment climate for its successful operation.

Full financial support of innovative business activity will enable business entities to increase their competitiveness in the domestic and foreign markets. In turn, the state has the opportunity to strengthen its position in the global economic space due to innovative development.

The problem of financing innovations is not only a lack of financial resources. There is also a need to create a rational structure for the distribution of funding sources in this industry.

The analysis of the sources of financing innovative activity of enterprises proves that Ukraine has not formed a single optimal mechanism for stimulating innovative

activity. Support from the state is insufficient, and the system of bank lending for innovative projects is imperfect. For the effective functioning of the system of financial provision of innovative development, it is necessary to form a system of providing innovative development of the state based on a comprehensive approach, which will stimulate innovative business development.

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## **FEATURES OF INNOVATIVE DIGITAL GLOBALIZATION IN CONDITIONS OF MODERN CHALLENGES**

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The concept of "globalization" has traditionally been used to describe the increasing interdependence of the world's economies and cultures, the planetary communication of populations, and the cross-border exchange of goods and services, technologies and investment flows, human resources and information.

Over the past few centuries, the leading powers of the world have been consistently developing models and schemes of foreign economic partnership that facilitate this kind of communication and interaction. However, the term "globalization" gained particular popularity at the end of the 20th century, when actively practiced cooperative agreements formed the foundations of our modern life

and worldview. It was at this time that the world became a truly global whole [A. Guryanova, E. Khafiyatullina, M. Petinova, V. Frolov, A. Makhovikov, 2020].

In modern reality, no country is able to completely isolate itself from the realities of the world economy. All states are involved in a single global economic environment. However, the closer to our present, the more the nature of globalization itself changes. While financial flows and traditional trade in goods at the global level are sharply reduced due to the general crisis that has swept the whole world of the COVID-19 pandemic, Russia's military aggression in Ukraine, global economic ties of the digital format, on the contrary, are increasing significantly.

The global industry is currently undergoing changes on a truly revolutionary scale. Given their versatility, complexity and dynamics, scientists have given such changes the name of the fourth industrial revolution, which is fundamentally different from all previous revolutionary upheavals that have taken place in world history. Today we can see with our own eyes impressive innovations and powerful technological breakthroughs in various fields of science, technology, and production. These are achievements in the field of the Internet of things, virtual environment, robotics and a variety of technological areas, such as cognitive, cloud, bio- and nanotechnologies. Of course, during the previous three industrial revolutions, new technological solutions also arose. But the fourth one is fundamentally different from them, firstly, by the speed of development and implementation of innovative technologies, and secondly, by the planetary, global nature of their distribution [Pakhucha, E., Babko, N., Bilousko, T., Bilousko, R., Vynohradenko, S., & Azizov, O. 2021].

The fourth industrial revolution is also associated with the assertion of Industry 4.0, causing a paradigm shift - the transition from centralized to decentralized production, which, moreover, is also the most intellectualized. This new revolution makes it possible to improve, reduce the cost and speed up the production process, which, in turn, transforms the models of interpersonal communication, communication, and interaction. Thus, robotization is likely to lead to the transformation of both places of production and flows of foreign direct investment. In addition, the growing digital flows facilitate the transfer and dissemination of information and innovations across

the planet, thereby expanding the opportunities for everyone to participate in the global economic process.

Artificial intelligence technologies play an important role in the era of digitalization. Their most intensive development takes place in five predominant areas, which can include computer vision and natural language technologies, robotic process automation, the development of various virtual assistants, and the expansion of machine learning. According to McKinsey Global Institute (MGI) forecasts, given the global average adoption rate of artificial intelligence technologies, by 2030 they will be able to provide an increase in additional global economic activity by about \$ 13 trillion. This is about 16% higher than the total GDP (gross domestic product) for compared with the economic situation of our time [Notes from the AI Frontier: Modeling the Impact of AI on the World Economy. McKinsey & Company, 2022].

Such a high degree of implementation of artificial intelligence is associated, first of all, with the possibility of its productive impact on the productivity of companies, as well as with a number of other external factors that directly affect the economic environment. With the predicted development of events, the use of artificial intelligence will be about 1.2% of additional GDP growth per year. Such an impact can be comparable to other large-scale world-class technologies and recognition that have periodically arisen in the course of human history. In addition, artificial intelligence has enormous development potential. In general, digital technologies are changing the way business is done, bringing it to a cross-border level, and expanding the opportunities for participation in it [Notes from the AI Frontier: Modeling the Impact of AI on the World Economy. McKinsey & Company]. In the process of digitalization of the economy, there is a sharp increase in global data flows, in particular, so-called “cross-border flows” arise. The volume of data is also growing exponentially: since 2005, its cross-border throughput has increased by about 45 times

Thus, digitalization is having a profound impact on global trade and investment, transforming economic industries and sectors around the world. In addition, digitalization improves the quality of life of citizens in many areas: it contributes to the activation of their participation in public life, provides access to

information resources, and introduces new technologies in the areas of healthcare and education.

Data and information are the fundamental resources of modern civilization, often compared to the "new oil" of the 21st century. The more information accumulates, the more qualitative and productive the decisions made on its basis can become, and the machine learning technologies used to process it are increasingly improving. This, in turn, creates additional opportunities for the commercialization and monetization of the data sphere.

The influx and outflow of data, ideas, technologies, and talents observed in the modern world also influence investment decisions. Over the past decade, data flows at the global level have made a significant contribution to the increase in world GDP. Currently, data globalization has a greater impact on economic growth than standard trade in goods. Global data flows include phenomena of a very different order, including the information itself, search and communication tools associated with its receipt, processing and storage, various transactional and video resources, intracompany traffic, and many others. etc. Any kind of modern cross-border flows is supported and provided by this kind of technological resources. In addition, the global adoption of digital technologies is fundamentally changing the way organizations work. Through the collection and exchange of information, trade in information resources, they successfully increase their operational efficiency, reduce marketing costs.

The digital economy has a significant impact on all investment structures, including foreign ones. It opens up new opportunities, but along with this, it also provokes serious political problems related, for example, to the need to overcome the digital divide [A. Guryanova, E. Khafiyatullina, M. Petinova, V. Frolov, A. Makhovikov, 2020].

In any case, the digital economy contributes to the emergence of digital globalization. Admittedly, countries such as Singapore, the Netherlands, the United States, Germany, the United Kingdom, China, Ireland, Saudi Arabia and the United Arab Emirates lead the ranking of modern digital transformations. Modern China is

rightfully considered one of the world's leading investors in digital technologies. It has one of the most developed digital startup investment systems in the world. In general, the most interconnected at the global level are countries with developed economies. However, data flows also bring significant economic benefits to countries located on the periphery of digitalization. Moreover, the acceleration and increase in data and information flows are observed almost everywhere. As a result, globalization in the 21st century is becoming truly digital.

Digital globalization is a new phase in the development of the global world, entailing corresponding changes in the structure of doing business, in the contingent of its participants, in expanding economic opportunities, including cross-border relations and communications. Transformations and innovations in the field of digitalization are driven by the expectations of consumers and investors, as well as the prospects for greater economic and social benefits. The benefits of digital globalization are enjoyed not only by large corporations, but also by small businesses [V. P. Berkut, Yu. V. Bondareva, T. A. Kostyukova, V. P. Maikova, E. M. Molchan, V. A. Pesotsky, 2018].

In the course of digitalization, the so-called microtransnational corporations play an important role. To connect with customers and suppliers from other countries, they use the potential of leading digital platforms - Alibaba or Amazon. Moreover, the use of digital platforms is increasingly being practiced by representatives of precisely small startups, which rather quickly receive, thanks to this, a unique opportunity to enter the global level of communications [Schilirò D., 2020].

According to MGB (McKinsey Global Institute), more than 85% of today's technology startups claim to belong to some area of cross-border activity. The use of digital platforms is fundamentally changing the way business is done and the economy itself, contributing to its acquisition of a cross-border focus [Notes from the AI Frontier: Modeling the Impact of AI on the World Economy. McKinsey & Company].

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of ever new global user communities. As a result, the business sector is expanding its potential customer base, using effective methods to further attract interested parties.

In today's society, global digital platforms are successfully used for education, job search, personal networking and talent showcase. Today, international connections in social networks already have more than 3 billion participants. Thus, digital platforms are the instrumental basis for a new era of globalization.

Digital globalization is a fundamentally new stage in the evolution of the global world, the formation of which is due to the development of digital technologies, on the one hand, and the digital economy, on the other. The technological prerequisite for digital globalization can be considered the achievements of the fourth industrial revolution - robotization and the Internet of things, cloud and cognitive technologies, virtual and augmented reality, nano- and biotechnologies, and so on. Digital globalization is inextricably linked to economic innovation.

The digital economy involves changes in the very structure of doing business, in the contingent of its participants, in expanding economic opportunities, including the establishment of cross-border relations and communications. While financial flows and traditional trade in goods at the global level are declining due to the crisis that has swept the whole world due to the pandemic and hostilities in Ukraine, global economic ties of the digital format, on the contrary, are expanding significantly. This is largely facilitated by the introduction of artificial intelligence technology, the attraction of global data and information flows, the use of digital platforms and the development of digital commerce.

Over the past few centuries, the leading powers of the world have been consistently developing models and schemes of foreign economic partnership that facilitate this kind of communication and interaction. However, the term “globalization” gained particular popularity at the end of the 20th century, when actively practiced cooperative agreements formed the foundations of our modern life and worldview. It was at this time that the world became a truly global whole.

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The digital economy has a significant impact on all investment structures, including foreign ones. It opens up new opportunities, but along with this, it also provokes serious political problems related, for example, to the need to overcome the digital divide [Sytnyk Yo., Havrychenko D., Staverska T., Primush R., Erfan V., 2022].

In any case, the digital economy contributes to the emergence of digital globalization. Admittedly, countries such as Singapore, the Netherlands, the United States, Germany, the United Kingdom, China, Ireland, Saudi Arabia and the United Arab Emirates lead the ranking of modern digital transformations. Modern China is rightfully considered one of the world's leading investors in digital technologies. It has one of the most developed digital startup investment systems in the world. In general, the most interconnected at the global level are countries with developed economies.

However, data flows also bring significant economic benefits to countries located on the periphery of digitalization. Moreover, the acceleration and increase in data and information flows are observed almost everywhere. As a result, globalization in the 21st century is becoming truly digital.

Digital globalization is a new phase in the development of the global world, entailing corresponding changes in the structure of doing business, in the contingent of its participants, in expanding economic opportunities, including cross-border relations and communications. Transformations and innovations in the field of digitalization are driven by the expectations of consumers and investors, as well as the prospects for greater economic and social benefits. The benefits of digital globalization are enjoyed not only by large corporations, but also by small businesses [V. P. Berkut, Yu. V. Bondareva, T. A. Kostyukova, V. P. Maikova, E. M. Molchan, V. A. Pesotsky, 2018].

In the course of digitalization, the so-called microtransnational corporations play an important role. To connect with customers and suppliers from other countries, they use the potential of leading digital platforms - Alibaba or Amazon. Moreover, the use of digital platforms is increasingly being practiced by representatives of precisely small startups, which rather quickly receive, thanks to this, a unique opportunity to enter the global level of communications [Schilirò D., 2020].

According to MGB (McKinsey Global Institute), more than 85% of today's technology startups claim to belong to some area of cross-border activity. The use of digital platforms is fundamentally changing the way business is done and the economy itself, contributing to its acquisition of a cross-border focus [Notes from the AI Frontier: Modeling the Impact of AI on the World Economy. McKinsey & Company].

The achievements of digitalization significantly reduce the cost of international transactional and communication projects, contribute to the acquisition of “transparency” by the market system, increase its efficiency, and activate the formation of ever new global user communities. As a result, the business sector is expanding its potential customer base, using effective methods to further attract interested parties.

In today's society, global digital platforms are successfully used for education, job search, personal networking and talent showcase. Today, international connections

in social networks already have more than 3 billion participants. Thus, digital platforms are the instrumental basis for a new era of globalization.

Another important aspect of the digital economy and digital globalization is e-commerce. In the realities of our modern times, most of the retail market is moving online. An example is the network operation of the world famous company Alibaba, which accounts for about 80% of all online retail sales in modern China.

E-commerce is a fast, dynamically developing form of trade relations. It is revolutionizing sales strategies and fundamentally changing consumer behavior patterns.

Summing up, we note that digital globalization is a fundamentally new stage in the evolution of the global world, the formation of which is due to the development of digital technologies, on the one hand, and the digital economy, on the other. The technological prerequisite for digital globalization can be considered the achievements of the fourth industrial revolution - robotization and the Internet of things, cloud and cognitive technologies, virtual and augmented reality, nano- and biotechnologies, and so on. Digital globalization is inextricably linked to economic innovation.

The digital economy involves changes in the very structure of doing business, in the contingent of its participants, in expanding economic opportunities, including the establishment of cross-border relations and communications. While financial flows and traditional trade in goods at the global level are declining due to the crisis that has swept the whole world due to the pandemic and hostilities in Ukraine, global economic ties of the digital format, on the contrary, are expanding significantly. This is largely facilitated by the introduction of artificial intelligence technology, the attraction of global data and information flows, the use of digital platforms and the development of digital commerce.

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# **VARIABILITY OF THE INFLUENCE OF CAPITAL INVESTMENTS ON THE COST EFFICIENCY OF THE GRAIN INDUSTRY**

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The grain industry is recognized as the leader of the domestic agricultural market and the entire economy of Ukraine. The level of its development is a priority lever that guarantees food and national security of the state. Ukraine is one of the main players in the international grain trade market, and the tendency to increase production volumes remains quite stable for a long period. Unfortunately, the start of hostilities in Ukraine poses significant obstacles to the further normal development of the grain industry, since according to forecasts, wheat production in Ukraine should reach 34 million tons by the end of 2029 and the country would enter the 5 countries - leading grain exporters (Cheremisina, S., et al., 2001).

Maintaining this dynamic requires increased investment in the latest technologies for grain production, harvesting and processing. At the same time, contrary to expectations, there is a decrease in the number of grain harvesters in agricultural enterprises from 65.2 thousand units. in 2000 to 26.5 thousand units. at the beginning of 2022. The reasons for this are the imbalance of price trends for finished products and means of production, which causes a decrease in the return on investment in the latter. Considering this, the need of the hour is the study of methodical approaches to modeling the size of capital investments of agricultural enterprises to update grain harvesting equipment according to the criterion of maximizing the return on costs of the grain industry.

Considerable attention was paid to the problems of estimating and increasing the economic efficiency of costs for the production of grain crops in the works of V. Andriychuk (2006), V. Boyka (2007), Yu. Voskobiynyka (2013), L. Zaburanoi



(2014), O. Zakharchuk (2020), M. Zubets, P. Sabluka (2011), I. Klochan (2018), I. Kuzmenko (2015), Yu. Lupenko (2017), V. Mesel-Veseliaka (2018), O. Shpychak (2013) and many other researchers.

The problems of the development of material and technical support of the grain industry were investigated in the works of V. Adamchuk (2012, 2015), Y. Bilouska (2019), M. Hrytsyshina (2015), O. Popka (2011), V. Skotsika (2012) et al. In their works, the named authors highlighted the state and prospects of providing this industry with technical resources and updating its material and technical base.

At the same time, the vector of development of technical science is mainly aimed at researching the issues of using grain-harvesting equipment, increasing its productivity, and determining the optimal load on it. A significant contribution to the development and research of the organization of the use of grain-harvesting equipment was made by D. Voytyuk (2004, 2005), V. Dubrovin (2004), T. Ishchenko (2004), V. Baranovskyi (2005), V. Bulhakov (2005), A. Rud' (2012), I. Bendera (2011), P. Sysolin (2002), T. Rybak (2002), V. Salo (2002) and many others. However, approaches to determining the optimal amount of investment in the renewal of the fleet of combine harvesters, taking into account the level of concentration of production, price dynamics on the markets of means of production and agro-production, agrobiological factors of production and design features of combine harvesters, require further research.

The purpose of the article is to highlight the results of modeling the impact on the efficiency of costs for the production of wheat grain of capital investments of agricultural enterprises to update grain harvesting equipment.

The first step of the study was the determination of the analytical form of the dependence of wheat yield on variable costs per hectare of harvested area. Based on the statistical reporting of agricultural enterprises of Ukraine for 2020, it was established that it is reflected by the equation:

$$f_1(x) = -0,180x^2 + 6,425x, \quad (1)$$

where  $f_1(x)$  – yield of wheat, tons/ha;  $x$  – variable production costs per 1 ha of harvested wheat area, UAH thousand.

This dependence is characterized by a high level of statistical reliability, as evidenced by the value of the coefficient of determination ( $R^2$ ), which for function (1) is 0.9106, as well as the excess of the estimated value of the Fisher coefficient ( $F_p = 28.0$ ) over its tabular value ( $F_{tab.} = 0.116$ ). At the same time, based on the values of the Student's  $t$  coefficient, the coefficients for the linear and quadratic terms of the formula (1) were also highly reliable. In particular, with the tabular value of this coefficient from -1.72 to 1.72, its actual values with the specified members were equal to 3.2 and 6.17, respectively.

Using (1), variable costs per unit of crops were calculated, which guarantee the achievement of maximum productivity. To do this, it was differentiated with respect to  $x$ , which made it possible to determine the first derivative:

$$\frac{df_1(x)}{dx} = -0,359x + 6,425 \quad (2)$$

Equating the right-hand side of (2) to zero and solving the resulting equation with respect to  $x$ , it was established that when the production intensity approaches the productive optimum of variable costs per unit of crops, which characterizes the value of variable costs, which ensures the maximization of productivity and is equal to 17.9 thousand hryvnias/ ha, the maximum yield reaches 57.5 hundredweights per hectare. The key to its achievement is the observance of optimal harvesting periods, which in the case of single-phase (direct) harvesting should not exceed 6-10 days after the wheat reaches full maturity. At the same time, an analysis of the conditions and timing of early grain harvesting in 2016-2020 shows that due to the insufficient quantity and unsatisfactory technical condition of most of the grain harvesting equipment, its duration was from 32 to 55 days (Oliynyk, O., et al., 2021). At the same time, the extension of the duration of the harvesting campaign beyond a ten-day period caused a daily decrease in productivity by 1% (Kyrychenko, V., et al., 2015), as a result of which more than 10% of the potential harvest was lost, i.e. 6-6.5 million tons of grain.

Taking this into account, the next task was to determine the optimal level of variable costs, which will allow, by slightly reducing the expected yield level, to minimize crop losses and maximize the return on production. For this, the variable  $d$  was introduced into equation (1), which characterizes the duration of harvesting, and the percentage of daily losses after the completion of ten days from the moment the wheat reaches full maturity, which is equal to 0.01. Taking this into account, the function of the dependence of wheat yield on variable costs per hectare of harvested area and harvesting time, provided that it lasts more than ten days:

$$f_2(x, d) = -0,180x^2 + 6,425x - 0,01 \cdot (d - 10) \cdot (0,180x^2 + 6,425x) = (1,1 - 0,01d) \cdot (-0,180x^2 + 6,425x), \quad (3)$$

where  $f_2(x)$  – yield of wheat, tons/ha;  $x$  – variable production costs per 1 ha of harvested wheat area, UAH thousand;  $d$  – duration of the collection campaign, days.

Therefore, taking into account the variability of approaches to determining yield for different durations of the harvesting campaign, equations (1) and (3) were combined into a system, the application of individual functions in which depends on the threshing period:

$$f_3(x, d) = \begin{cases} (-0,180x^2 + 6,425x), & \text{if } d \leq 10 \\ (1,1 - 0,01d) \cdot (-0,180x^2 + 6,425x), & \text{if } d > 10, \end{cases} \quad (4)$$

where  $f_3(x)$  – yield of wheat, tons/ha;  $x$  – variable production costs per 1 ha of harvested wheat area, UAH thousand;  $d$  – duration of the collection campaign, days.

It should be noted that, according to many researchers, the duration of the harvesting campaign determines the expected gross harvest, as well as the number and productivity of grain harvesting units (Voytyuk, D., et al., 2008; Pastukhov, V., et al., 2001; Ruzhyts'kyi, M., et al., 2011; Shmat, K., et al., 2003). At the same time, based on the generalization of the results of field experiments, M. Ruzhitsky (2011) established that the most relevant estimate of the expected duration of collection is given by the formula:

$$d(pl, Y_p, n) = \frac{pl \cdot Y_p}{W_{\text{год}} \cdot T_{3M} \cdot n \cdot K_{\text{впч}}}, \quad (5)$$

where,  $pl$  – harvested area, ha;  $Y_p$  – expected yield, tons/ha;  $W_{\text{год}}$  – hourly productivity of the grain harvester, hundredweight/hours;  $T_{3M}$  – shift duration, hours;  $K_{\text{впч}}$  – coefficient of utilization of the working time of the shift;  $n$  – number of grain harvesting units, units.

Based on the assumption that for the purposes of modeling the impact of technical support of harvesting operations on the technical and economic efficiency of wheat production, it is acceptable to calculate yield using (1), formula (5) underwent the following transformation:

$$d(pl, x, n) = \frac{pl \cdot f_1(x)}{W_{\text{год}} \cdot T_{\text{зм}} \cdot K_{\text{врч}} \cdot n}. \quad (6)$$

As you know, the productivity of the grain harvesting unit is determined by the throughput capacity of its thresher ( $q_k$ ), which depends on the power of the engine and can vary depending on the design features of grain movement from the header to the hopper. At the same time, according to DSTU ISO 8210:2012, the formula is used to calculate the productivity of the grain harvester:

$$W_{\text{год}} = \frac{3600 \cdot q_k \cdot (1 - v_{yp})}{(1 + \alpha_{\text{сол}}) \cdot 100}, \quad (7)$$

where,  $W_{\text{год}}$  – hourly productivity of the grain harvester, hundredweight/hours;  $q_k$  – nominal throughput capacity of the combine thresher, kg/s;  $v_{yp}$  – yield variation coefficient (recommended value 0.2);  $\alpha_{\text{сол}}$  – ratio of grain and straw in mass (recommended value 1÷1.2).

In turn, taking into account that, according to the data of statistical reporting, units with an engine power of 330-335 hp are mostly used by domestic grain producers. a similar model was chosen during the simulation as the base model. The analysis of the market of grain harvesting equipment shows that the closest to the indicated capacity are the sixth class combines widely represented on it - *New Holland CR7.90*, *John Deere S670*, *John Deere S770*, *CASE IH 7140*, *CASE IH 7240*, *Gleaner S97*, *Claas Lexion 740*, *Massey Ferguson 9540*, *Massey Ferguson 9545* [31]. At the same time, taking into account the results of the analysis of the offer of aggregates from this list on the website TractoHouse.com [32], the model with the largest number of lots - John Deere S670, which has a nominal engine power of 317 hp, was chosen as the base during the calculations. and thresher throughput – 8.5 kg/s. Based on these considerations, substituting the last value into (7), it was established that the hourly productivity of this harvesting unit is 111.27 hundredweight/hours:

$$W_{\text{год}} = \frac{3600 \cdot q_k \cdot (1 - v_{yp})}{(1 + \alpha_{\text{сол}}) \cdot 100} = \frac{3600 \cdot 8,5 \cdot (1 - 0,2)}{(1 + 1,2) \cdot 100} = 111,27 \text{ hundredweight/hours}. \quad (8)$$

Further, assuming that the agricultural enterprise uses one of its own *John Deere S670* combine harvesters, the technical and economic efficiency of purchasing one or two similar units was assessed. To do this, by substituting the hourly productivity of the *John Deere S670* combine harvester, shift duration (12 hours), shift working time utilization factor (0.7) into function (6), and assuming that the harvesting area is 500 hectares, it was determined that in the case of using one harvester, the dependence of the threshing period on the variable operating costs per sowing unit is characterized by the equation:

$$d(500, x, 1) = \frac{500 \cdot (-0,180x^2 + 6,425x)}{111,27 \cdot 12 \cdot 0,7 \cdot 1} = -0,096x^2 + 3,437x, \quad (9)$$

where  $x$  – variable production costs per 1 ha of harvested wheat area UAH thousand.

On the other hand, in the case of using two or three combines, the dependence of the threshing period on the variable operating costs per sowing unit is as follows:

$$d(500, x, 2) = \frac{500 \cdot (-0,180x^2 + 6,425x)}{111,27 \cdot 12 \cdot 0,7 \cdot 2} = -0,048x^2 + 1,719x, \quad (10)$$

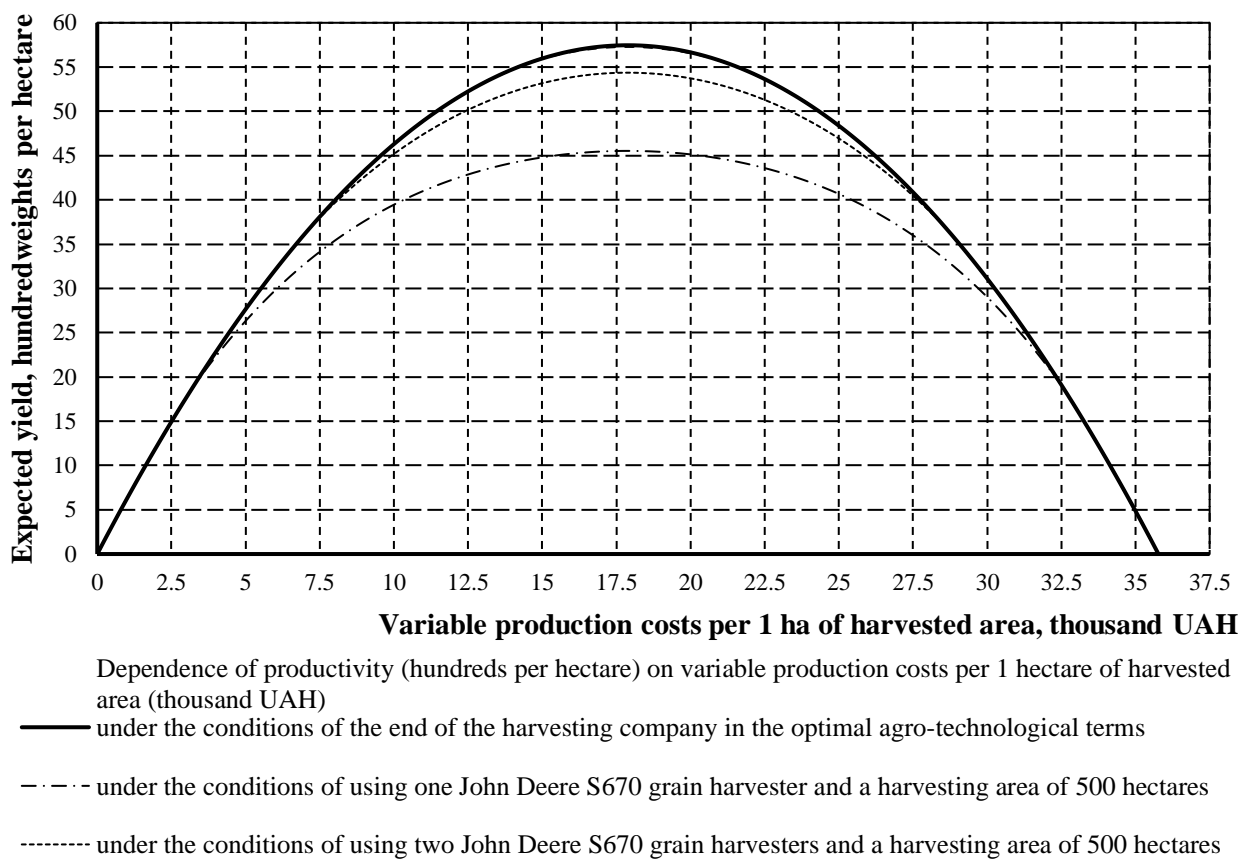
where  $x$  – variable production costs per 1 ha of harvested wheat area UAH thousand.

and

$$d(500, x, 3) = \frac{500 \cdot (-0,180x^2 + 6,425x)}{111,27 \cdot 12 \cdot 0,7 \cdot 3} = -0,032x^2 + 1,146x, \quad (11)$$

where  $x$  – variable production costs per 1 ha of harvested wheat area UAH thousand.

So, if an agricultural enterprise uses wheat grain production technology with variable costs per crop unit equal to 17.9 thousand UAH/ha, then 500 hectares of wheat will be threshed by one combine in 30.7 days ( $3.437 \cdot 17.9 - 0.096 \cdot (17.9)^2$ ). Taking this into account, 20.7% ( $((30.7-10) \cdot 1\%)$ ) of the potential harvest will be lost, which is equivalent to 11.9 hundredweights per hectare, and the expected yield will be 45.6 hundredweights per hectare. Instead, harvesting with the involvement of two harvesters will allow the work to be completed in 15.4 days ( $1.719 \cdot 17.9 - 0.048 \cdot (17.9)^2$ ). At the same time, 5.4% ( $((15.4-10) \cdot 1\%)$ ) of the potential harvest will be lost, which is equivalent to 3.1 hundredweights per hectare, and the expected yield will be equal to 54.4 hundredweights per hectare. The obtained results, as well as their graphic illustration (Fig. 1), confirm the positive impact of the increase in the level of technical support on the technological efficiency of grain production.



**Fig. 1 Impact on wheat yield of production intensity and technical support of harvesting operations in agricultural enterprises of Ukraine in 2020.**

Source: Author's own calculations according to the official website of the State Statistics Service of Ukraine <http://www.ukrstat.gov.ua/>

So, the results of modeling wheat yield indicators using the system of equations (4) indicate a positive effect of improving the technical support of grain production on its technological efficiency. This gives grounds for its use in modeling the impact of the intensity and technical support of grain production on its economic efficiency. For this reason, the system of equations (4) was transformed. In particular, based on the assumption of one hundred percent marketability of grain production, to determine the expected volume of marketable products, the first and second equations were multiplied by the average price of wheat sold by agricultural enterprises of Ukraine in 2020, which, according to the official website of the State Statistics Service, was 386.75 UAH per quintal.

Taking into account the measurement of variable costs per unit of crops in the system of equations (4) in thousand UAH, the price of 1 t of wheat grain was converted into the unit of the same name. Taking this into account, the system of equations for

estimating the expected yield of marketable products per unit of crops has the following form:

$$f_4(x, d) = \begin{cases} 0,3868 \cdot (-0,180x^2 + 6,425x), & \text{if } d \leq 10 \\ 0,3868 \cdot (1,1 - 0,01d) \cdot (-0,180x^2 + 6,425x), & \text{if } d > 10, \end{cases} \quad (12)$$

where  $f_4(x)$  – expected output of marketable products, thousand UAH per ha;  $x$  – variable production costs per 1 ha of harvested wheat area, thousand UAH;  $d$  – duration of the collection campaign, days.

After that, system (12) was adapted to determine the expected marginal profit, for which the right-hand side of the first and second equations was reduced by the amount of variable costs  $x$ :

$$f_5(x, d) = \begin{cases} 0,3868 \cdot (-0,180x^2 + 6,425x) - x, & \text{if } d \leq 10 \\ 0,3868 \cdot (1,1 - 0,01d) \cdot (-0,180x^2 + 6,425x) - x, & \text{if } d > 10, \end{cases} \quad (13)$$

where  $f_5(x)$  – expected marginal profit, thousand UAH per ha;  $x$  – variable production costs per 1 ha of harvested wheat area, thousand UAH;  $d$  – duration of the collection campaign, days.

The calculation of the expected operating profit requires taking into account fixed costs, the average value of which in the production of wheat grain, according to the results of the analysis of statistical reporting, in relation to the production costs of agricultural enterprises of Ukraine for 2020, is UAH 2,711 thousand/ha.

At the same time, the involvement of additional grain-harvesting units causes an increase in depreciation. For its calculation, the average costs for the purchase of a grain harvester in the reporting year - UAH 4,845.4 thousand were evenly distributed over the 12 years recommended by the John Deere company as a guideline for the productive use of this brand of combine harvester. The obtained value - UAH 403.8 thousand per combine harvester was used to calculate the increase in depreciation deductions:

$$A = \frac{403,8 \cdot (n-1)}{pl} = \frac{403,8 \cdot (n-1)}{500} = 0,808 \cdot (n - 1), \quad (14)$$

where,  $pl$  – harvested area, ha;  $n$  – number of grain harvesting units, units.

In addition, the potential increase in fixed costs was taken into account under the conditions of interest payments for the use of a loan taken out to cover the costs of purchasing a combine harvester. Thus, according to the statistical data of the official website of the National Bank of Ukraine, in 2020, agricultural commodity producers attracted long-term loans for the purchase of equipment at an average rate of 16%.

Thus, under the conditions of linear accrual of interest payments, the annual cost of paying interest (I) will be equal to:

$$I = \frac{4845,4 \cdot 0,16 \cdot (n-1)}{pl} = \frac{4845,4 \cdot 0,16 \cdot (n-1)}{500} = 1,553 \cdot (n-1), \quad (15)$$

where, n – number of grain harvesting units, units.

So, taking into account the values of average fixed costs per unit of crops and their potential growth, the system of equations for determining the expected amount of operating profit looks like this:

$$f_6(x, d, n) = \begin{cases} 0,3868 \cdot (-0,180x^2 + 6,425x) - x - 2,711 - , \\ -0,808 \cdot (n-1) - 1,553 \cdot (n-1), \text{ if } d \leq 10; n > 1 \\ \\ 0,3868 \cdot (1,1-0,01d) \cdot (-0,180x^2 + 6,425x) - x - \\ -2,711, \text{ if } d > 10; n = 1 \\ \\ 0,3868 \cdot (1,1-0,01d) \cdot (-0,180x^2 + 6,425x) - x - 2,711 - \\ -0,808 \cdot (n-1) - 1,553 \cdot (n-1), \text{ if } d > 10; n > 1 \end{cases} \quad (16)$$

Further, by substituting the right-hand side of the function (9) into the second equation of the system (16), it was established that in the case of using one harvester and a harvesting area of 500 hectares, the dependence of the operating profit per unit of wheat crops on the variable costs for the same area is as follows:

$$f_6(x) = -0,00007 \cdot x^4 + 0,0048 \cdot x^3 - 0,162 \cdot x^2 + 1,734 \cdot x - 2,711 \quad (17)$$

Instead, by substituting the right-hand side of functions (10) and (11) into the third equation of the system (16), it was established in the case of using two or three harvesters and a harvesting area of 500 hectares, the dependence of the operating profit per unit of wheat crops on the variable costs for the same area has the form :

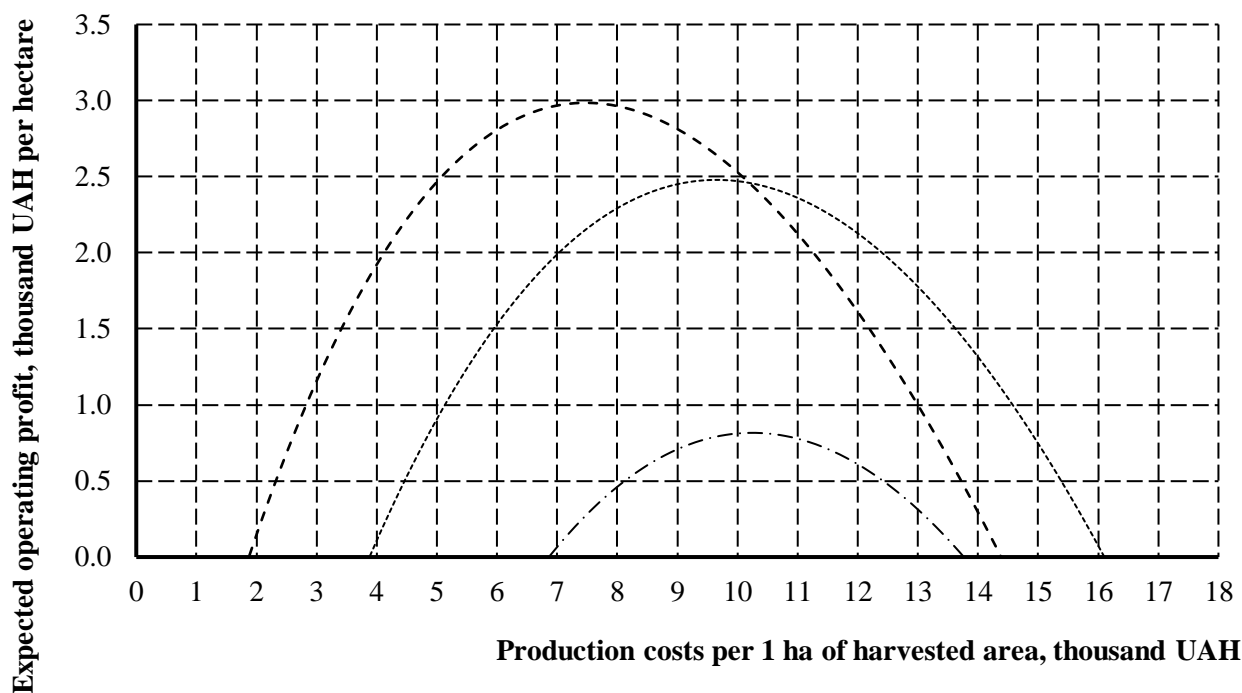
$$f_6(x, 2) = -0,00003 \cdot x^4 + 0,0024 \cdot x^3 - 0,119 \cdot x^2 + 1,734 \cdot x - 5,070 \quad (18)$$

and

$$f_6(x, 3) = -0,00002 \cdot x^4 + 0,0016 \cdot x^3 - 0,105 \cdot x^2 + 1,734 \cdot x - 7,428 \quad (19)$$

A graphic illustration of the behavior of the graphs of the function (17)-(19) shows that, in contrast to the increase in the technological efficiency of wheat production in the case of an increase in the number of used grain harvesting units, the dynamics of economic efficiency indicators is the opposite (Fig. 2).





Dependence of operating profit (thousand hryvnias per hectare) on production costs per 1 ha of harvested area (thousand hryvnias)

- - - - under the conditions of using one John Deere S670 grain harvester and a harvesting area of 500 hectares
- ..... under the conditions of using two John Deere S670 grain harvesters and a harvesting area of 500 hectares
- · - · - under the conditions of using three John Deere S670 grain harvesters and a harvesting area of 500 hectares

**Fig. 2 The influence of the intensity of production and technical support of harvesting operations on the output of operating profit from the sale of wheat grain by agricultural enterprises of Ukraine in 2020.**

Source: Author's own calculations according to the official website of the State Statistics Service of Ukraine <http://www.ukrstat.gov.ua/>

Thus, an increase in the number of used grain-harvesting units leads to a simultaneous reduction in threshing periods, an increase in the profitable optimum of costs and a decrease in the amount of operating profit per unit of crops. At the same time, the optimum costs still remain lower than its value calculated under the conditions, if the duration of the collection campaign does not exceed ten days. To clarify the reasons for this, it should be recalled that according to the rules of differential calculus, the general formula for determining the optimum of a parabolic function, which describes the dependence of profit on costs, has the form:

$$x_{max} = \frac{b \cdot p - 1}{2 \cdot a \cdot p} \quad (20)$$

where,  $a$ ,  $b$  – regression coefficients for the linear and quadratic terms of the parabolic function;  $p$  – the price of 1 t of wheat grain, hryvnias.

In turn, it should be recalled that without taking into account the influence of the factor of harvesting periods and potential losses, the dependence of the operating profit per unit of wheat crops on the variable costs for the same area, as well as additional costs due to the purchase of harvesters, looks like this:

$$f_6(x) = -0,069 \cdot x^2 + 1,485 \cdot x - 2,711 \quad (21)$$

Using formula (20), it was established that in the case of using one *John Deere S670* combine harvester, the profitable optimum of variable costs per unit of crops is UAH 10.7 thousand/ha. Instead, by differentiating the function (17) with respect to  $x$ , its first derivative was determined:

$$\frac{df_6(x,1)}{dx} = -0,00028 \cdot x^3 + 0,0144 \cdot x^2 - 0,324 \cdot x + 1,734 \quad (22)$$

Later, in the PTC Mathcad 15.0 environment, it was established that, under the conditions of using one John Deere S670 combine harvester, the profitable optimum of variable costs per unit of crops, taking into account the actual harvesting periods and resulting crop losses, is 7.5 thousand UAH/ha. The results of similar transformations with functions (18) and (19) show that the use of two or three such harvesters leads to an increase in the profitable optimums of variable costs to 9.5 and 10.2 thousand UAH/ha.

The development of methodological principles for determining the optimal level of costs for various production conditions should be directed, first of all, to the practicality of its use. On the other hand, it is not possible to determine the profitable optimum of function (17) using formula (20). This makes it necessary to reduce the form of function (17) to a parabola of the second order by expanding the latter into a Taylor series:

$$f(x) = f(x_0) + \frac{f'(x)}{1!}(x - x_0) + \dots + \frac{f^{IV}(x)}{4!}(x - x_0)^4 + R_4(x) \quad (23)$$

where,  $x_0$  – fixed value of the profitable optimum, relative to which the approximation takes place.

Therefore, based on (23) in the PTC Mathcad 15.0 environment, the function (17) was approximated by a parabola of the second order:

$$\begin{aligned} f_6(x) &= -0,00007 \cdot x^4 + 0,0048 \cdot x^3 - 0,162 \cdot x^2 + 1,734 \cdot x - 2,711 \approx \\ &\approx -0,077 \cdot x^2 + 1,154 \cdot x - 1,332 \end{aligned} \quad (24)$$

After that, comparing the values of the regression coefficients for the linear and parabolic terms in functions (21) and the last part of (24), it was determined that the value of the first decreased by 22.3%  $((1.154-1.485)/1.485*100)$  and the second increased by 11.6 %  $((0.077-0.069)/0.069*100)$ . This led to a decrease in the profit optimum in the case of taking into account the influence of organizational factors on wheat productivity as a function of the dependence of profit on production costs.

Continuing the coverage of the research results, we note that under the conditions of using technology with variable costs at the level of the profitable optimum and harvesting with a single John Deere S670 combine harvester, the agricultural enterprise will be forced to abandon the performance of a significant number of technological operations or to reduce the price of some of them by reducing the doses of fertilizers and protective means etc. At the same time, the operating margin will be equal to 5.7 thousand UHA/ha. Instead, the use of technology with variable costs at the level of the harvest optimum increases the potential yield, but the loss of a fifth of it due to the lengthening of the harvesting period to 30.7 days causes a negative return on variable costs of 0.3 thousand UAH /ha (table).

At the same time, in the case of harvesting with three *John Deere S670* grain harvesters, the calculated value of the profit optimum is 36.0% higher compared to the case of using one unit. Under such conditions, the list of performed technological operations is wider, and the application doses of fertilizers, herbicides, and protection agents are closer to optimal. This is a guarantee of an increase in the operating margin up to 8.2 thousand UHA/ha, but it is possible to recommend harvesting with three harvesters only if all of them are already owned by the agricultural enterprise.

However, when evaluating the economic feasibility of the purchase of two *John Deere S670* combine harvesters, one should take into account the increase in overhead costs due to the payment of interest for the loan taken out under this measure, as well as the increase in depreciation deductions. Thus, in the case of using technology with variable costs at the level of the profitable optimum and harvesting with one combine harvester of this brand, fixed costs are 47.6% of the operating margin.

**The influence of variation in the number of John Deere S670 harvesters on the intensity and efficiency of wheat production in agricultural enterprises of Ukraine on an area of 500 hectares in 2020.**

Indicators	Number of grain harvesters, units		
	one	two	three
Optimum variable costs, thousand UAH/ha			
plenteous	17,9	17,9	17,9
profitable	7,5	9,5	10,2
The duration of the harvesting campaign (days) under conditions of production intensity at the level			
crop optimum	30,7	15,4	10,2
profitable optimum	20,4	12,0	8,3
Productivity (c/ha) with variable costs at the level			
crop optimum	45,5	54,4	57,3
profitable optimum	34,1	44,0	47,6
Marginal profit/loss (thousand UAH/ha) with variable costs at the level			
crop optimum	-0,3	3,2	4,2
profitable optimum	5,7	7,5	8,2
Fixed costs, thousand UAH/ha			
including average value	2,711	5,070	7,428
additional depreciation	X	0,808	1,616
interest expense	X	1,551	3,101
interest payment expenses under the "5-7-9" program*	X	0,485	0,969
Operating profit/loss (thousand UAH/ha) with variable costs at the level			
crop optimum	-3,0	-1,9	-3,2
profitable optimum	3,0	2,4	0,8
Operating profit/loss (thousand hryvnias/ha) in case of involvement in the "5-7-9" program with variable costs at the level of			
crop optimum	-3,0	-0,8	-1,1
profitable optimum	3,0	3,5	2,9

*Source: Author's own calculations according to the official website of the State Statistics Service of Ukraine <http://www.ukrstat.gov.ua/>*

*\* Taking into account the reduction in interest rates for business loans according to the government program "Affordable loans "5-7-9%".*

On the other hand, when harvesting with three grain harvesters, their share increases to 79.4%, which causes a decrease in operating profit from UAH 3.0 to 0.8 thousand/ha. Therefore, the purchase of additional grain-harvesting units for a 500-hectare crop area is economically impractical.

Obviously, the catastrophic consequences for the economy of the beginning of the war require the adjustment of the investment policy of grain producers. At the request of time, the decision of the Cabinet of Ministers dated March 18, 2022

significantly expanded the program "Affordable loans "5-7-9% ". Yes, any business entity during martial law and one month after its end will be able to get a loan of up to UAH 60 million at 0%. After that, the loan rate will be 5%. The term of lending under the "5-7-9" program in case of implementation of an investment project and debt refinancing will be up to five years, and for replenishment of working capital - up to three years [33]. The assessment of the impact of attracting a loan under the "5-7-9% Available Loans" program to finance the renewal of the fleet of grain-harvesting equipment on the profitability of production proved that it is more profitable to thresh 500 hectares of wheat with two combines. So, the proven methodological approach to modeling the effectiveness of costs for wheat production in the conditions of investments in rearming its technical base allows avoiding unproductive costs.

The unsatisfactory technical condition of the fleet of grain harvesters of most agricultural enterprises of Ukraine causes unproductive losses of a part of the potential harvest and leads to a decrease in the efficiency of operating costs for the production and sale of grain industry products. At the same time, despite the rather fast pace of development of the grain industry, the rate of growth of investments in updating the own fleet of grain harvesters of agricultural producers is quite slow, the prerequisites for which are the high cost of these machines and the possibility of their involvement for the period of harvesting on lease terms.

The proven methodical approach makes it possible to evaluate the effectiveness of costs for the production of wheat grain and investments in updating the fleet of grain harvesting operations, taking into account the agrobiological features of wheat production and harvesting, the price situation for grain industry products and grain harvesting combines, and financial factors. The conducted calculations undermined the economic impracticability of investing funds in updating the fleet of grain harvesters for small and medium-sized commodity producers. At the same time, the assessment of the impact of attracting a loan under the program "Available loans "5-7-9%" to finance the renewal of the fleet of grain-harvesting equipment on the profitability of production proved that threshing 500 hectares of wheat with two combines is more profitable. Therefore, the application of the proven approach will avoid unproductive

costs due to the comprehensive consideration of technological and market factors of forming the optimal level of production costs.

Taking into account the established significant impact of fixed costs on the financial performance of wheat production under the conditions of intensification of the investment activity of the agrarian enterprise, in the future it is advisable to pay more attention to the study of the riskiness of their implementation. In particular, the methodical aspects of assessing the influence of fixed costs on the formation of operating leverage and its effect in the conditions of the effect of diminishing returns inherent in agricultural production need to be clarified.

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# **CHAPTER 2. MONITORING AND DIAGNOSIS OF MODERN PROBLEMS OF INNOVATIVE DEVELOPMENT OF BUSINESS ENTITIES**

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## **INNOVATION AS A TOOL FOR RESTAURANT BUSINESS ADAPTATION IN THE CONDITIONS OF DIGITAL TRANSFORMATION ECONOMY IN THE POST-PANDEMIC PERIOD**

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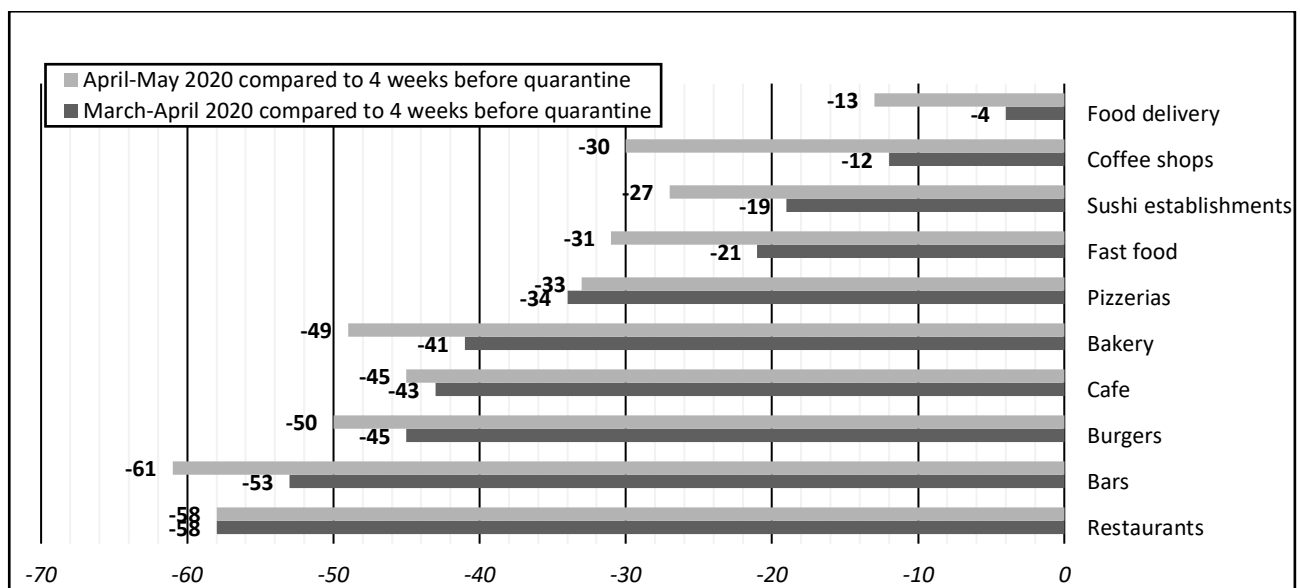
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The COVID-19 pandemic caused significant changes in the way of life in many countries of the world, including in Ukraine. A state of emergency was introduced in some countries, sanitary-epidemiological measures were introduced in almost all countries (quarantine zones, restrictions on work activities, cancellation of mass events, closure of educational and cultural and entertainment institutions), migration restrictions were established, etc. A large-scale pandemic led to the establishment of a number of quarantine restrictions of varying degrees of severity, which caused significant disproportions in economic relations, disruption of production chains, and significantly affected almost all areas of business both in Ukraine and in the world.

According to the World Bank, the drop in the level of the global economy in 2020 amounted to 4.3% [1]. According to the results of the 1st quarter, the GDP of the Eurozone countries fell by 3.6% due to the crisis (seasonally adjusted for the 4th quarter of 2019), instead of the previously forecasted 3.8%. The fall in GDP also occurred in

comparison with the 1st quarter of 2019. In particular, such a drop in the GDP of Austria was 2.6%, Spain – 5.2%, France – 5.3%, Italy – 5.3% [2]. According to the Ministry of Finance, the real GDP of Ukraine decreased by 9.0% in 2020, and by 20.1% in 2021 [3]. At the same time, the analysts' optimistic scenarios predicted the growth of the real GDP of Ukraine in 2021 at the level of 4.1% due to the acceleration of the pace of vaccination and curbing the coronavirus. Representatives of the hotel and restaurant business, tourism and transport were the most affected, while at the same time the volumes of retail trade and construction increased.

After two weeks of strict quarantine, 63% of restaurant establishments stopped working. In total, during the period of strict quarantine around 12 thousand institutions of this group were liquidated as economic entities (Fig. 1).

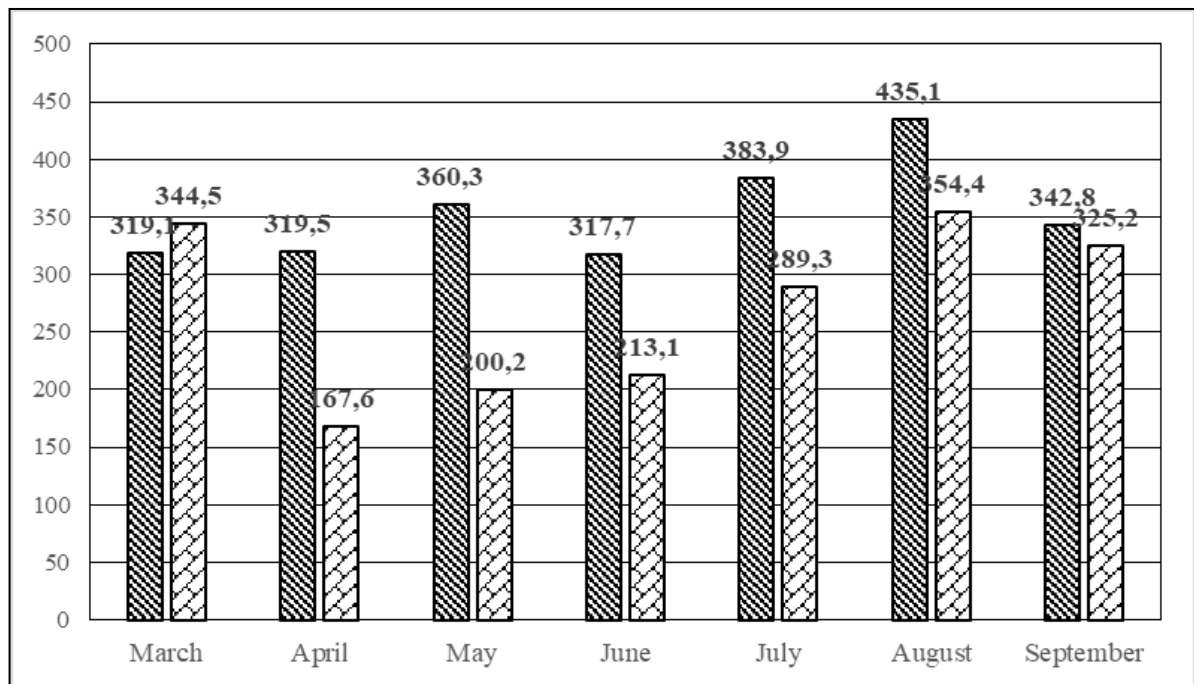


**Fig. 1. Dynamics of reduction of the number of restaurant establishments during the period of strict quarantine restrictions**

*According to [4-6].*

During the period of quarantine restrictions, restaurants and other catering establishments suffered significant losses, which led to a reduction in budget allocations by 23% or UAH 535.5 million. The most difficult for the restaurant business was April, after which a gradual recovery began, and in September, these

companies almost reached the 2019 figures. The related business – “beverage service” (bars, taverns, snack bars, etc.) - reduced deductions by almost 30%. During the most difficult periods, April-May, the state received UAH 10 million a month from bars, taverns, snack bars, pubs and cafes – 50% of the 2019 amounts (Fig. 2).



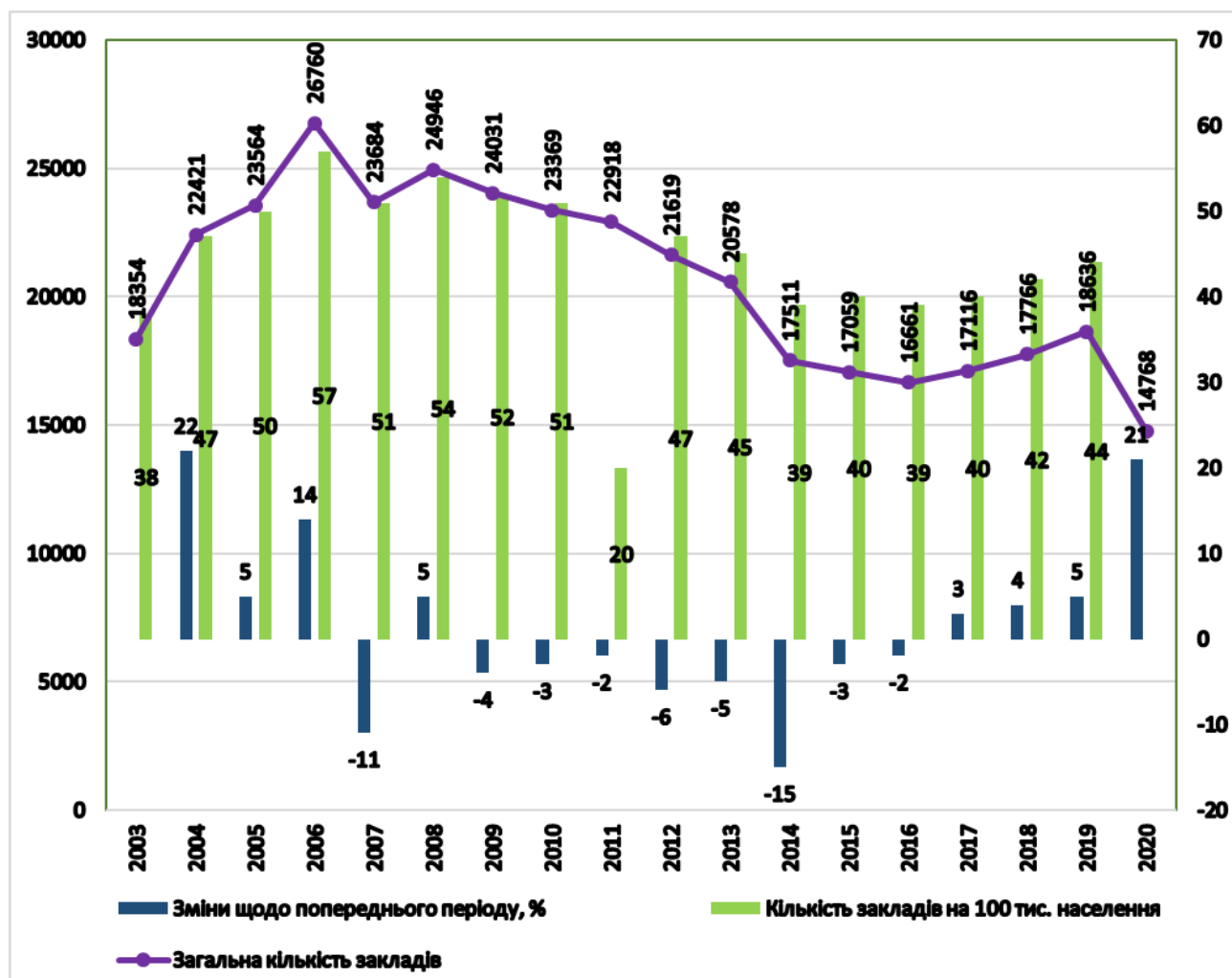
**Fig. 2. Volumes of payment of tax payments by restaurants, catering establishments and beverage service in March-September 2019 and 2020, UAH million**

*According to [7].*

In order to determine the balance between the effective impact on the level of the incidence of COVID-19 and their consequences for business, since March 2020, the Ukrainian authorities have repeatedly changed the strictness of quarantine restrictions. This forced entrepreneurs to constantly look for new strategies of behavior - some reduced the number of employees or sent them on vacation, others moved to work online. In the end, not everyone was able to adapt to the new realities. In some places, businesspersons organized protests demanding the lifting of restrictions. According to the Opendatabot research conducted in the first month of quarantine, 29% of Ukrainian companies suspended their work during the period of quarantine

restrictions, and 6% completely closed their business. Business owners who decided to continue their activities reported a significant drop in profits - up to 90% [5].

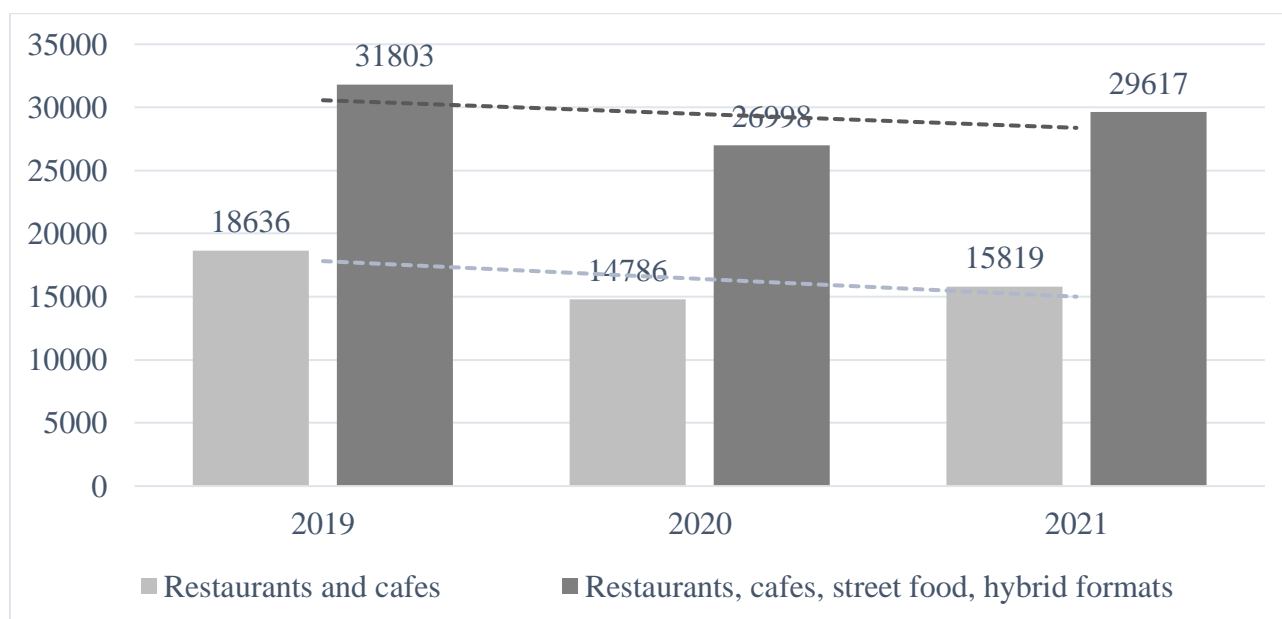
As already mentioned, the restaurant business suffered the most from the lockdown. According to the analytical center "Restaurants of Ukraine", during 2020 the number of restaurants and cafes in Ukraine decreased by almost 4 thousand establishments. "At the beginning of 2021, 14,700 restaurants, cafes and bars were operating, compared to the beginning of 2020, when 18,600 establishments were operating in Ukraine. Accordingly, the volume of the restaurant market decreased by almost 30% in 2020 and amounted to 14.1 billion hryvnias in 2020. In 2020, the restaurant market lost almost 6 billion hryvnias," the authors of the study note [8].



**Fig. 3. Dynamics of restaurant business development in 2008-2020**  
According to [8-10].

The professional labor market, which has been forming for years, has become aware of serious disproportions. In the first half of 2021, more than 150,000 workers in the restaurant business and the hospitality industry lost their jobs due to lockdowns and quarantine restrictions in Ukraine, which forced many of them to change their field of professional activity altogether. By the beginning of 2020, about 550 thousand people worked in the restaurant sector, at the end of 2021 there were almost a third less [5]. This has created a big problem for this area of business, as many establishments are currently unable to find workers of a high professional level in sufficient numbers.

According to the results of 2021, the restaurant business began to grow in various segments, albeit at a slow pace, which indicated the presence of a more effective adaptation mechanism than in other sectors of the economy.

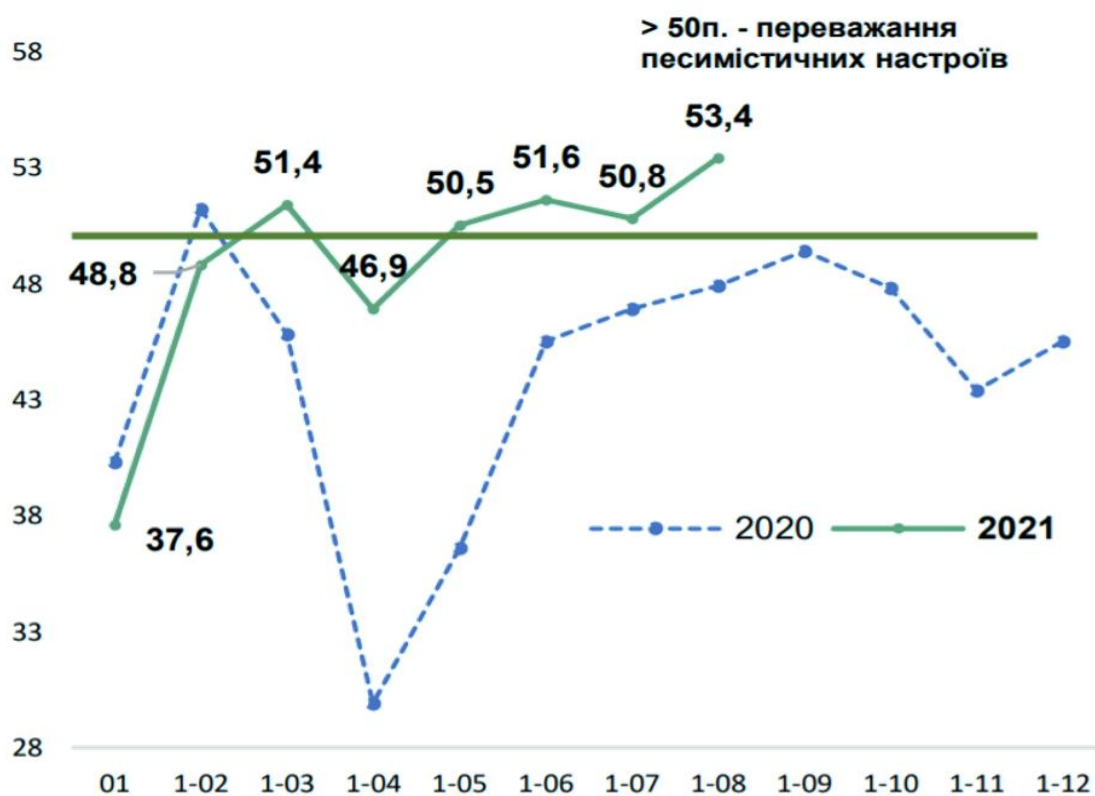


**Fig. 4. Development of the restaurant business by the number of establishments in 2019-2021**

*According to [8].*

Despite the turbulent business conditions, many entrepreneurs took the risk of starting their own business in 2020. According to Opendatabot, in 2020, during the spring quarantine, twice as few new entrepreneurs were registered every week than usual, but since the beginning of June, their number has leveled off [11].

According to the monitoring service YouControl, almost 54,000 new legal entities were opened in Ukraine in 2020, which is 20% less than in 2019, when more than 67,500 companies started operating. At the same time, in 2020, only slightly more than 10,000 legal entities closed, which is a third less than in 2019. As for individual entrepreneurs, a slightly different picture is observed here. During 2020, more than 247,500 individual entrepreneurs were registered in Ukraine. Compared to 2019, the difference is less than 5%, when almost 261.7 thousand entrepreneurs started their own business [9].



**Fig. 5. Dynamics of the index of expectations of business activity in 2020-2021**  
*According to [9, 12].*

At the same time, the National Bank reported that in May 2021, Ukrainian businesses improved their assessments of the economic condition of their enterprises and prospects, as evidenced by the dynamics of the business activity expectations index. In May 2021, it was 50.5 points against 46.9 in April and exceeded the equilibrium value of 50 points for the second time since the beginning of the year. At

the same time, the greatest improvement in sentiment was observed in the services sector (50.7 in May versus 48.8 in April). In trade, the index increased from 48.9 in April to 49.9 in May, and in industry there was an increase from 49.8 to 50.8 during the month. Such data indicate that Ukrainian business looks to the future, at least, with cautious optimism.

It is worth emphasizing that in the restaurant business, those establishments that were able to withstand the conditions of strict quarantine were mainly those that carried out address delivery of food or worked "to take away". Most of these institutions have already implemented or are in the process of implementing certain marketing and organizational innovations, the effectiveness of which is complemented by the support of appropriate digital applications and platforms. This example of operational adaptation proves the expediency of digitalization research as a component tool of innovative development of the restaurant business in modern business conditions.

Taking into account the relevance of the problems of restoring the restaurant business in the post-pandemic period, ensuring its sustainable development, sustainable competitiveness and financial stability in the difficult conditions of today, we consider it expedient to determine the vectors of its innovative development in the context of digitalization of business process management.

Innovative actions in the field of service are primarily aimed at increasing attractiveness for customers and stimulating the growth of the company's sales volumes. The introduction of innovative forms and tools in the restaurant business is a condition of adaptation aimed at increasing the volume of sales of goods and profitability and, as a result, ensuring sustainable economic development and competitiveness of enterprises.

In the economic literature, a significant number of types of innovations are considered depending on the parameters based on the classification. According to the classification, innovations in the restaurant business can be characterized as: medium; based on a combination of different types of knowledge; innovations that are replaced; related to the calculation and optimization of parameters; centralized; with a useful life of at least five years. When researching the innovations of trade enterprises by I.



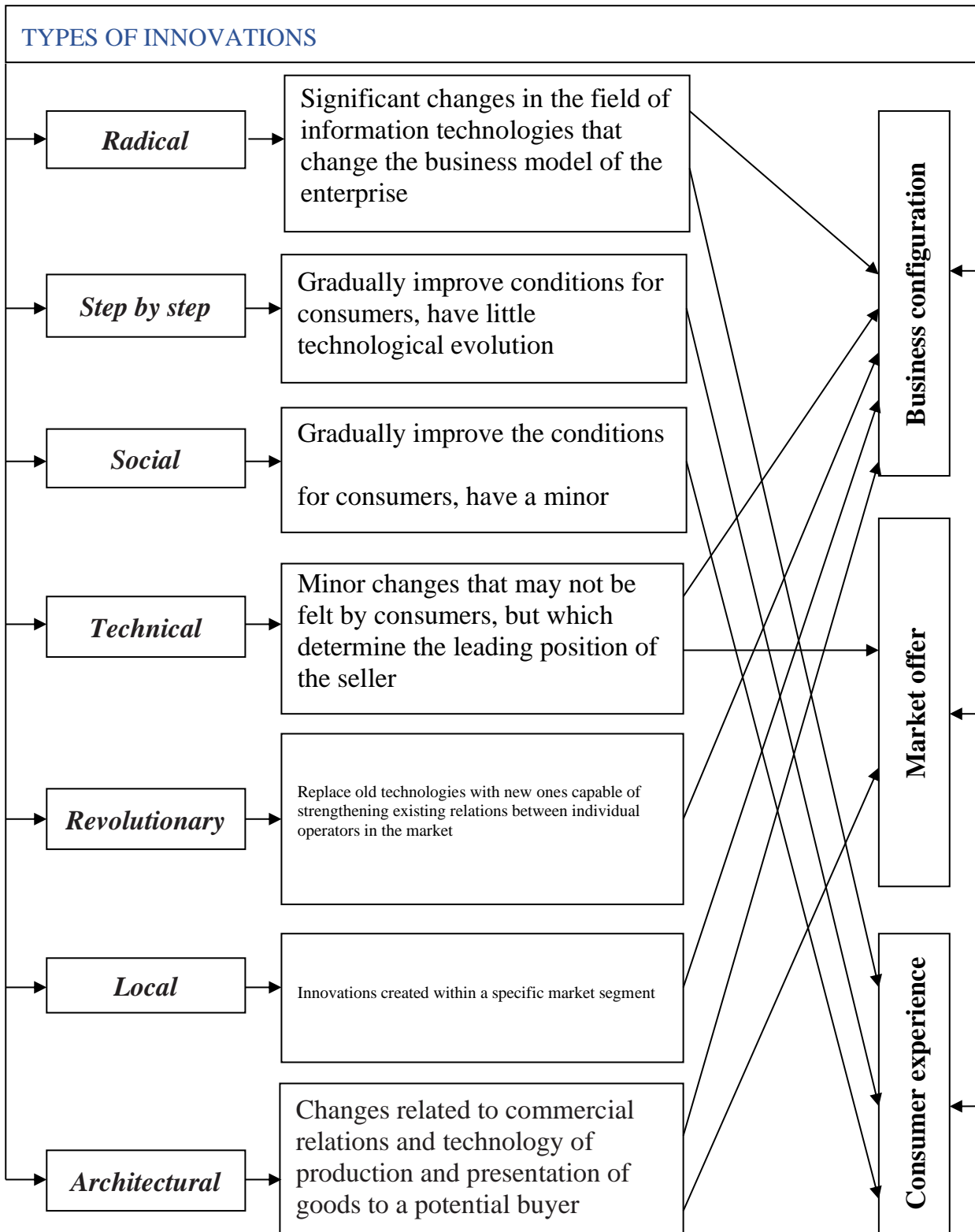
Kolodyazhna the following types were distinguished: product innovations, organizational and economic innovations, financial innovations, information technology innovations [13, p. 54]. Krysanov D. offers the following classification of types of innovations: according to the type of enterprise, innovations are divided into innovations in wholesale and retail trade; according to the technology of implementation, innovations are divided into product and process innovations; by funding sources: innovations due to direct sources, innovations due to indirect sources; by type of novelty: innovations for the industry and innovations for the enterprise [14, p. 86-87]. The most famous is the classification of innovations proposed by E. Blondeau, in which he singles out seven types of innovations in trade enterprises: radical, step-by-step, social, technical, revolutionary, local, architectural [15].

Research of the opinions of leading scientists made it possible to form a generalized classification of types of innovations of enterprises (Fig. 6).

Innovation in the restaurant business is understood to mean a creative entrepreneurial process of creating and/or improving and commercializing a new product, service or technology with the appropriate transformation of management methods that increase the efficiency of business processes while bifurcating quality management parameters and form the basis for further development in general.

Modern restaurant businesses have the opportunity to implement innovative technologies in every business process. Innovations in the restaurant industry, on the one hand, can be described as production (food production), and on the other - non-production (provision of catering services and non-related services) [18]. At the same time, all types of innovations in the restaurant business provide certain advantages to both producers of products and services, and consumers.

Modern economic conditions have led to a certain transformation of the combinatorial clustering of innovations. In our opinion, in the restaurant business combinations of innovations can be classified according to the following criteria: marketing; product (assortment); economic; social; organizational; managerial; resource; technological; information technologies (digital) (Table 1).



**Fig. 6. Classification of types of enterprise innovations**

According to [14-17].

**Table 1 – Modern types of innovative combinations in the restaurant business [4]**

<b>Types of innovations</b>	<b>The main content</b>
Marketing	Consumer loyalty and product promotion programs – outdoor advertising; advertising printing products; creation and promotion of own site; souvenir products with a trademark; SMM; Email marketing; “New media” and work with opinion leaders; affiliate programs and cooperation of various industries – event marketing, presentations, printed advertising products in other areas of business; neuromarketing, etc.
Food (assortment)	Based on the concept of “customer emotion and impression management” (Customer experience management) – conceptual menu; National cuisine; healthy food; eco-menu; patenting of new dishes and their design, etc.
Economic	Innovations in the financial and accounting areas of activity, motivation and remuneration, evaluation of performance.
Social	New forms of activation of the human factor, including the process of changing working conditions, cultural, environmental and political aspects; introduction of the nomenclature of additional services.
Organizational	Provide new forms of staff functioning; opening of innovative formats of restaurant business establishments: Street Food, Fast Food, Quick Service, Fast Casual, “family”, “gastronomic restaurant”, Party, Free-Flow, Euro-dining room, self-service restaurant, expo-kitchen, etc.
Resource	Aimed at finding new resources for enterprise development – financial, raw materials, etc.
Technological	Introduction of new techniques and technologies of cooking; equipment improvement, etc.
Management	Aimed at the introduction of modern innovative technologies of business management; creating adaptive business models.
Information Technology (digital)	Digitization of all business processes with the help of modern software and hardware and information technologies; implementation of web and telecommunication solutions for interaction with partners, consumers and other stakeholders.

It should be noted that the digital component of the innovative development of the restaurant business causes the acceleration of the implementation of all other components, forming a full-fledged innovation cluster. Back in 1972, K. Lancaster noted that innovative development is “a continuous process of implemented innovations based on new information technologies” [20]. In other words, digitalization creates the basis for innovative business process management formats of restaurants, which allow to form their own ecosystem of information and communication interaction with consumers and other stakeholders, based on customer orientation, innovation, partnership and synergies.

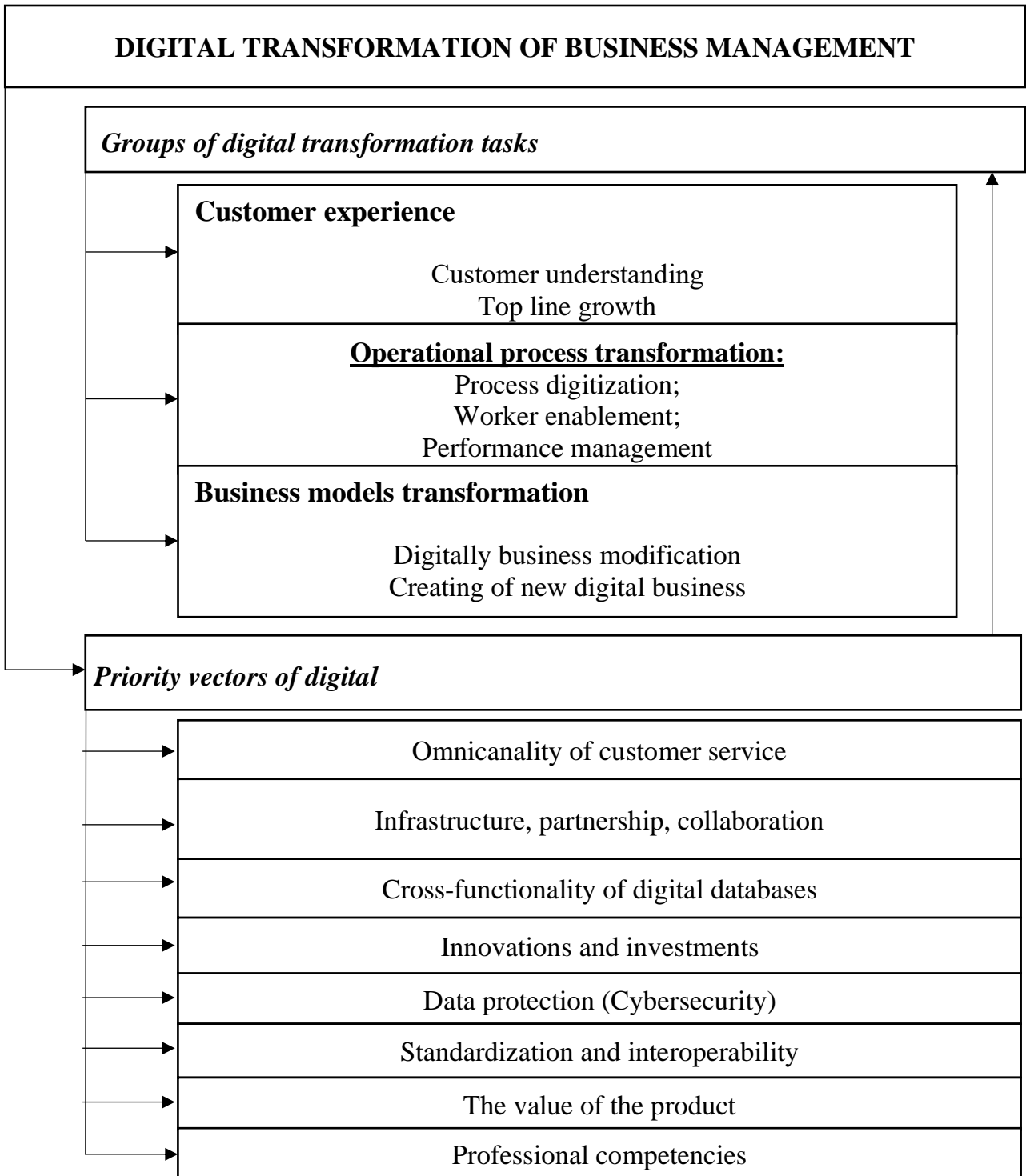
The digital transformation of innovation development management is based on the concept of digital space, which is based on several factors [20]:

1. Communication with the consumer.
2. Competitive environment.
3. Working with big data (application of Application Programming Interface, Software Development Kit and other integration tools).
4. Introduction of innovations.
5. Value management.

These factors affect the strategy of effective development of modern business society, in which digital transformation is one of the most important areas capable of making a new technological breakthrough in the national economy [21].

The study of the concept of digital space [20], the conceptual framework of digital transformation of business management of large corporations [22] and the vision of the digital agenda of Ukraine [23] allowed to identify the main vectors and objectives of digital transformation of business management (Fig. 7).

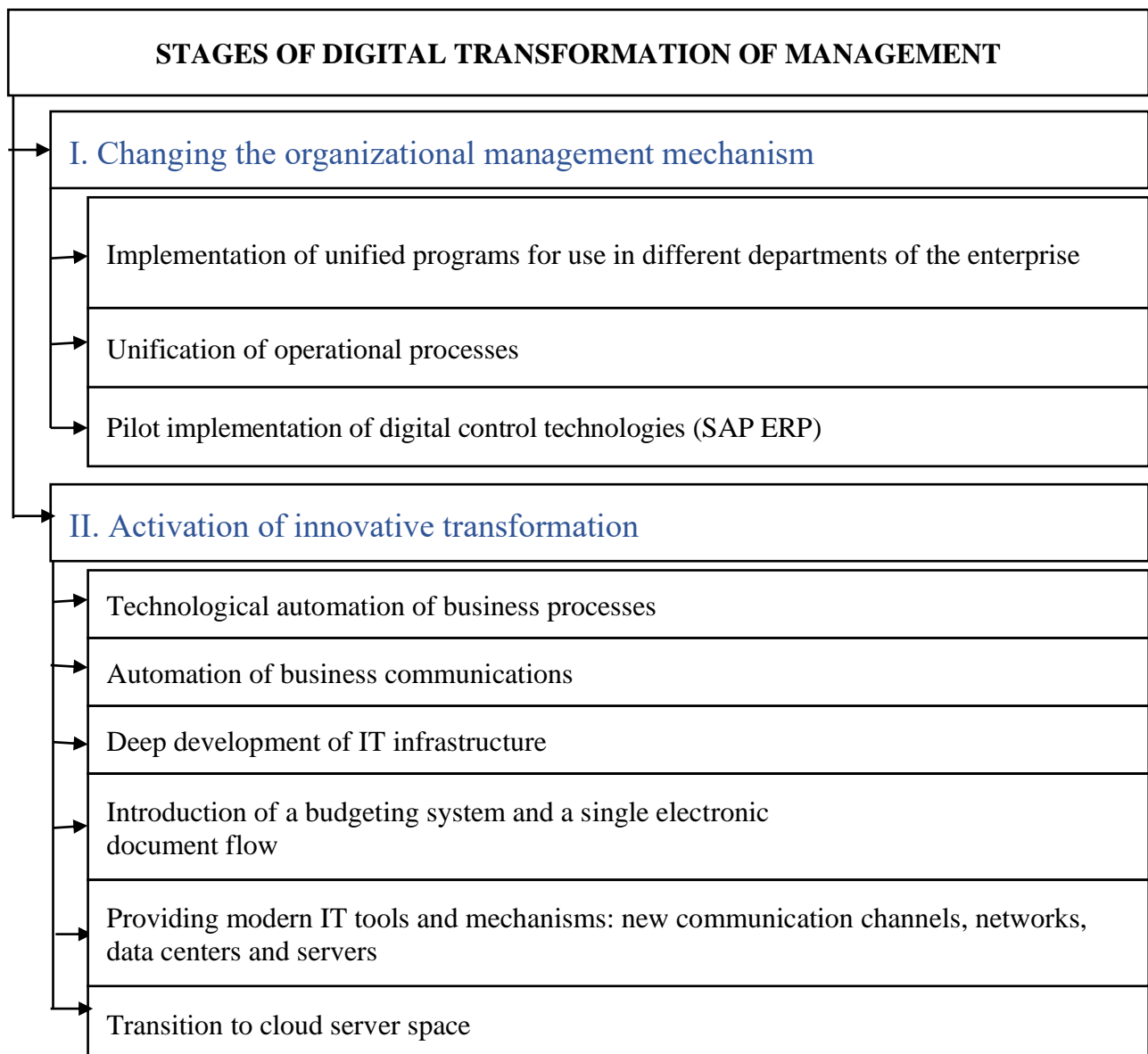
In addition to the digital transformation of general business management models, in recent years in the restaurant business of Ukraine there is a trend of digitalization of all its processes and innovations – FoodTech [25], which includes online marketing, advertising, production process, food production and delivery, including outsourcing services, etc.



**Fig. 7. The main tasks and vectors of digital transformation of business management**

As the culture of ordering through websites and mobile applications develops in Ukraine, as well as around the world, many restaurateurs are already implementing or

planning to go online to increase sales or to strengthen the loyalty of their customers. As already mentioned, the effectiveness of digitalization of the restaurant business has been proven, in particular, due to strict quarantine restrictions – capable of full operation were mostly restaurants that already worked on certain digital platforms or digital combinatorial innovation clusters, which expanded their capabilities and formed their own ecosystem with contact audiences.



**Fig. 8. Stages of digital transformation of the mechanism of management of innovative development of the enterprise**

Digital transformation of innovation development management mechanisms involves the restructuring, above all, the organizational component of management, which involves the intensification of innovation development and the transition of the usual work processes to a qualitatively new level [25]. Stages of digital transformation of management mechanisms of innovative development are presented in fig. 8.

The restaurant business in Ukraine is gradually joining the global digitalization. The study of trends in the external environment of operation has identified factors of gradual and rapid digitalization of the restaurant business.

Factors of gradual digitalization include:

- implementation of sustainable development goals in the life of modern society;
- globalization processes and their consequences;
- changing market conditions, increasing competition and the need to find new competitive advantages;
- development of innovative technologies in all business segments;
- development of digital technologies, emergence and distribution of digital platforms and other products of the IT market;
- turbulence of the external environment (as an incentive to implement adaptive modeling of business processes);
- transformation of consumer behavior under the influence of general digitalization of society;
- desire for self-development and self-improvement, etc.

Factors of rapid digitalization include rapid breakthroughs in technology and force majeure, including the COVID19 pandemic.

The combination of these and other factors necessitates the introduction of restaurant business owners adaptive models of innovative digital management, able to respond quickly to changes in the environment and ensure sustainable development both in the current period and in the strategic perspective.

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# **INNOVATIVE TRADING APPROACHES IN CONDITIONS OF GRAIN MARKET VOLATILITY**

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Over the last decade, Ukraine has significantly increased the volume of grain exports. In the 2019-2020 marketing year, in terms of export volume of all grain crops, Ukraine became the second exporter in the world after the USA [Skoromna O. et al, 2021]. And for the 2020-21 marketing year, 50,8 million tons of domestic grain were exported to foreign markets. Revenue from the export of Ukrainian grain in 2021 amounted to \$12,3 billion. Compared to 2020, there was an increase in the volume of deliveries of most of the main product items of this group. Thus, 24.7 million tons of corn grain were exported - 12% less than the 2020 figure of 27,9 million tons, but 6 times more than the result of 2010. Export volumes of wheat grain amounted to 20.1 million tons. This is by 11% more than in 2020, and more than 4 times higher than in 2010 (Mukha, M. et al, 2022).

And the growth of grain exports continued in the 2021-22 marketing year: as of February 23, Ukraine exported 43 million tons of grain and legumes. Of these, the largest exports were corn grain – almost 3,5 million tons and wheat grain – 0,9 million tons. Such data are provided by the Ministry of Agrarian Policy. Before Russia's attack on our country, the main volumes of grain exports in Ukraine were sent to buyers through the ports of Mykolaiv and through the ports of Southern Odesa and Chornomorsk. In total, this is 95% of grain cargoes exported by sea. Mariupol and Berdyansk accounted for another 5%. For the most part, grain was transported to the ports by rail (Mucha M., et al., 2022).

Until February 24, almost all Ukrainian agricultural exports, which are one of the main vessels of the circulatory system of our economy, were directed to Ukrainian seaports, mainly to the Black Sea. However, for today the sea ports are closed for us. They are either occupied or mined (Makovey Yu et al., 2022). Due to objective reasons, the export of Ukrainian grain is now significantly complicated and a number of problems have arisen that remain insufficiently researched to this day, which determined the relevance and purpose of the article.

The export of grain crops performs an extremely important function of preserving the country's positive trade balance and reducing the risks of foreign economic activity, while traditional export industries (metallurgical, chemical) experience a negative impact from the world market. Ukraine occupies a prominent place among the grain-exporting countries in the world, especially wheat grain and corn grain, and military actions prevent the implementation of foreign economic trade in grain and provoke the global food crisis (Dorofeev O. et al., 2020).

Currently, a difficult and unprecedented situation has developed, which has shaken the world economic balance and has had a significant impact on the international grain market and on the food security of many countries of the world. As a result of Russian aggression, part of the country's territory was under occupation, and the ports in the Black Sea area were blocked. This led to the fact that the establishment of new grain supply channels to buyers became the main problem of

grain export from Ukraine. In this direction, a number of measures have already been taken that have had a positive effect, in particular:

- export routes have been changed. Transportation of grain by rail across the land borders of Ukraine has been established. And although this way has many problems, the mechanism is being worked out and the efficiency of such export channels is increasing. European partners should also be thanked for this, in particular, for the fact that, despite the European bureaucracy, they make a concession in quantum leaps and liberalize everything possible. Transportation through river ports is also carried out and gradually improved. But so far this is not enough, because today there are still long queues and traffic jams at European borders and in river ports.

- document processing procedures have been simplified. A simplified customs clearance mechanism is being developed for exporters of Ukrainian grain. In particular, Poland has decided to temporarily not carry out veterinary control of plant-based fodder (in particular, fodder grain cargoes) during transit through its territory to third countries, which will allow Ukraine to export agricultural crops through the Rava-Ruska – Verkhata border crossing. The corresponding simplified grain export regime began to operate on May 31, Valery Tkachev, deputy director of the commercial work department of JSC “Ukrzaliznytsia” wrote on Facebook. “This means that such cargoes can be imported into Poland through any checkpoints – both rail and land. This will make it possible to increase the export of grain from Ukraine!”, he noted [Petrenko, O., et al., 2019].

- grain storage opportunities have been expanded by upgrading elevator capacities in neighboring countries. Since the demand for granaries has increased, objects are put up for sale that no one needed before the all-out invasion. According to the commercial director of BZK Grain Alliance, Tair Musaev, the starting price for elevators that are 10-15 years old is from €130 to €250 per ton of storage. The Grain Alliance concern has already purchased an elevator in Slovakia equipped with two railway tracks. The work is being adjusted by Ukrainian workers, the elevator has already started receiving grain for storage (Mucha M., et al., 2022).

- construction/creation of new elevator capacities for storage of temporary grain residues, as well as new harvest (Chernyavskiy I., et al., 2019). Ukraine is already preparing additional facilities for storing agricultural crops of past and current harvests in case the blockade of its maritime infrastructure by Russian ships does not end.

All these measures bring positive results, which is confirmed by the growing volume of grain exports. In March 2022, 200,000 tons of grain were exported, and in April the volume of exports increased, of which about 150,000 tons were transported by rail. In April, this number increased more than 2 times, and in May - 3 times. Thus, during the war, the country was able to export more than 3 million tons of agricultural products, mainly thanks to the railway, but there is a rapid increase in the share of exports through river ports as Maxigrain business development manager Olena Neroba notes (Makovey Yu., 2022). According to Taras Vysotskyi, the First Deputy Minister of Agricultural Policy and Food of Ukraine, in May it was possible to reach the figure of 1,7 million tons by reorienting to railway and river transport, but this is not enough. Because before the start of the full-scale war, Ukraine exported about 5 million tons of grain every month through its seaports (Vysotsky T., 2022).

According to him, the active participation of Europe in increasing the volumes that Ukraine delivers by rail and road transport to the ports of Romania, Poland and the Baltic states will partly help to solve the problems. At the same time, it is important to increase the number of heavy cargo checkpoints and to introduce a "permit-free regime" by EU countries. However, despite the increase in volumes, without unlocking its seaports, Ukraine will not be able to reach pre-war indicators in the near future, Vysotsky is convinced (Skoromna O., 2022).

At the same time, domestic wheat grain and corn grain prices may rise due to increased transport costs, although as of May 23, 2022, their price is the lowest among the main exporters (Table 1).

**Table 1 – Dynamics of world wheat grain and corn grain prices  
as of May 23, 2022 (USD/t)**

	Price (\$/t)	+/- Week	+/- Month
<b>Wheat grain</b>			
FOB Rouen, France	448	+18	NC
FOB Novorossiysk, Russia (12,5 %)	NC	NC	NC
HRW 10% US Gulf	519	-9	+40
FOB Odessa, Ukraine (11,5 %)	308	+4	-13
FOB Argentine, Up River (11,5 %)	449	+3	+39
<b>Corn grain</b>			
FOB Bordeaux, France	387	+7	+17
FOB US Gulf, USA	347	-2	-8
FOB Ukraine	288	+1	-4
FOB Argentina	308	+2	-5

Thus, the growth in the price of forward contracts for common small-grained wheat on free-on-board terms (Free on Board, hereinafter - FOB) from the port of Rouen (France) increased by \$18 in a week and reached \$448 per ton of wheat. Regarding the prices of common wheat (12,5%) according to FOB Novorossiysk (Russia) contracts, there is still no data. The price of hard red winter wheat (Hard Red Winter, hereinafter – HRW) min. 10% on FOB terms in US ports, Gulf District was 519 USD/t. During the week from May 16 to 22, the price decreased by 9 USD/t, but compared to the price on April 23, it increased by 40 USD/t. The price of Ukrainian wheat grain in the port of Odesa increased slightly over the previous week, but due to the impossibility of exporting it through the Black Sea, the price dynamics for the month is negative – it decreased by 13 USD/t. Common wheat grain under contracts FOB Argentina, Up River (11,5%) also increased significantly in price: in a month by 39 USD/t, and in a week – by 3 USD/t. Ukrainian wheat grain is the cheapest in terms of prices, so importing countries are now very interested in creating conditions for

unblocking ports and supplying Ukrainian grain to countries that need it. It is worth saying that the main grain exporting countries are currently in a more advantageous position than Ukraine and will seek to sell as much of their own grain as possible at inflated prices, and only then, in order to prevent famine in third world countries, can they take steps to guarantee the export of grain from blocked Ukrainian ports (Skoromna O., 2022).

According to the experts of the Ukrainian Grain Association (hereinafter – UGA), “the export of corn from Ukraine in the 2021-2022 MY was expected at the level of 30-32 million tons with a harvest of about 38 million tons. There are still 14-15 million tons of corn in the remains. Export is the income of farmers, including funds for sowing, and it is also the foreign currency income that Ukraine so desperately needs today”, UGA experts emphasized (Babenko, M., et al., 2022). Ukraine loses 1,5 billion dollars every month due to blocking of sea ports. In addition, Ukrainian elevators, which were not affected by hostilities, are overfull. Farmers have nowhere to store the next harvest, the harvest of which will begin at the end of June. To understand the scope of the possible food crisis, it should be noted that Ukraine is among the top three world leaders in food production and export. In addition to herself, she fed another 400 million people a year and made plans to increase their number to 1 billion within 10 years (Vysotsky T., et al., 2022).

With regard to corn grain, it should be emphasized that Ukraine has not been the first year to occupy a leading position in the cultivation of this crop, in the 2021-22 marketing year it is in fifth place in terms of production volume (forecast for 2022-23 MY – 8th place) and fourth place in terms of export of corn grain. At the same time, we see that the price of Ukrainian corn grain for the 2021 harvest is the lowest and as of May 23 was 288 USD/t. The next in the order of price growth is Argentina with a corn offer at the level of 308 USD/t. The FOB delivery price of American wheat (Gulf of Mexico) is 347 USD/t, FOB Bordeaux, France – 387 USD/t.

According to the Agritel company, the most forecasted (and most pessimistic) scenario for the export of Ukrainian corn grain is the volume of 10 million tons (Fig. 1).





**Fig. 1. Dynamics of corn grain exports in Ukraine, million tons and export forecast for the 22-23 marketing year**

Source: [20].

However, according to the experts of the Agritel company, it will be difficult for Ukraine to export even these 10 million tons, but this largely depends on the end of the war. According to an optimistic forecast, in the 2022-23 marketing year, Ukraine will be able to reach the maximum export of 29,6 billion tons of corn grain. Everything depends on how quickly Ukraine reorients itself to new logistical routes for the export of corn and whether it will be able to ensure its temporary storage for a certain period of time, necessary for going through bureaucratic procedures when crossing the border with the EU.

However, not only bureaucratic obstacles stand in the way of export reorientation. According to the business development manager of the Maxigrain company Olena Neroba, the following problems are acutely emerging: 1) there is no place to store batches at the borders 2) neighboring countries have nothing to transport them. It takes time to establish such supplies (Makovey Yu., et al., 2022).

There are also objective restrictions that significantly affect the export possibilities of Ukrainian grain. They are caused, among other things, by the different width of tracks in Ukraine and the EU, which requires unloading-loading procedures for the possibility of further transportation of goods. Over time, a number of steps will be taken to overcome this restraining factor, but in the coming months it is unlikely to radically change the situation by switching to a narrower track width (as in the EU).

Another objective limitation is that Russian forces continue to launch missile attacks in Ukraine on railway junctions, elevators, fertilizer warehouses, agricultural lands and infrastructure. According to the Minister of Agriculture of the Federal Republic of Germany, Cem Özdemir these strikes are most likely an attempt by Russia to eliminate Ukraine as a competitor on the grain market in the long term .

According to the estimates of the US Department of Agriculture, for the 2022-2023 marketing year in Ukraine, the production and export of the main types of agricultural products will be as follows (Table 2).

**Table 2 – Production and export of the main types of agricultural products in Ukraine for the 2022-2023 marketing year, billion tons**

Product Type	Production			Export		
	Amount, billion tons	Rank among world manufacturers	% of the volume of world production	Amount, billion tons	Rank among world exporters	% of the volume of world exports
Wheat grain	21,5	# 9	2,8 %	10,0	# 7	4,8 %
Corn grain	19,5	# 8	1,7 %	9,0	# 4	4,9 %
Sunflower	11,0	# 2	21,7 %	0,75	# 1	20,1 %
Barley	6,0	# 7	4,0 %	2,0	# 6	6,4 %
Sunflower oil	4,193	# 2	21,9 %	3,8	# 1	36,3 %
Sunflower cake	4,027	# 3	19,4 %	2,9	# 1	41,5 %
Rapeseed seeds	3,2	# 6	4,0 %	2,75	# 3	16,6 %

Source: [21, 22] USDA WASDE and PSD Database, Updated May 12, 2022

In terms of wheat production, according to USDA forecasts, in the 2022-23 marketing year, Ukraine will rank 9th in the world, as well as 7th among exporting countries [22]. After all, in the current year, wheat grains were produced in the amount of 21,5 billion tons, of which 10.0 billion tons were destined for export. In percentage terms, this is 4,8% of the world export volume. A prominent place among cereals

belongs to corn for grain, the production of which reached 19,5 billion tons, which is 1,7% of the world production volume. At the same time, Ukraine ranked 4th among corn exporters, with a volume of 9,0 billion tons, which is 4,9% of world exports. As for sunflower, Ukraine ranks second in the world in its production and first in export. And the production of sunflower oil is 21,9% of the world volume of production and covers 36,3% of world exports. And this is not the limit of the possibilities of Ukrainian agrarian business [21].

Despite all the troubles in the fiscal and budgetary regulation and despite the active phase of hostilities, Ukraine was and remains a significant supplier of food in the world and actively influences the world's global processes. Let us consider what share Ukraine occupies in world wheat imports (Table 3).

**Table 3 – Share of exporting countries in world wheat imports, %**

Importing countries	Exporting countries				USDA-estimated total imports 22-23
	France	The rest of the EU	Ukraine	Other countries	
Algeria	58	29	1	10	6,8
Morocco	37	17	25	13	6,0
Africa	20	17	9	18	12,0
Egypt	4	14	22	5	11,0
Tunisia/Libya	3	23	59	0	2,7
Cuba	58	27	0	15	0,8
Yemen	3	2	21	48	3,7
S/W Asia	0	4	16	72	44,9
Switzerland	26	55	1	2	0,5
Israel	1	40	24	6	1,8
Mexico	1	0	3	91	5,2
Turkey	0	9	13	1	9,5
Saudi Arabia	1	71	7	13	3,0
China	21	2	0	76	9,5

Countries such as Morocco, Egypt, Tunisia, Libya, Yemen and Israel import more than 20% of the world's wheat imports from Ukraine. Therefore, the decrease in

the supply of wheat grain from Ukraine due to the blockade of the Black Sea ports by Russian warships greatly affects global trade.

Of course, new realities have challenged Ukrainian food exports, but despite all the difficulties, alternative routes are working. According to the data of the joint project of Latifundist.com and Ukrzaliznytsia (hereinafter - UZ), as of May 22, 2020, UZ transported 566,7 thousand tons of grain for export. In April, the total volume of transportation was 642,5 thousand tons. In addition, 51,1 thousand tons of oil and 46,2 thousand tons of meal and other processing products were exported by rail transport in April. The volume of grain loading on May 22 amounted to 900 thousand tons (for April in general – 1 million 237 thousand tons). It is also worth noting that on May 6, an important event took place – the train that will carry the domestic corn crop to Austria became operational on a permanent basis.

The company “Agrosem” acted as a key partner between Ukrainian exporters and final buyers of corn. The German railway company Deutsche Bahn also joined the export of Ukrainian grain in May 2022 and began the creation of a “railway bridge”, which is expected to transport large volumes of agricultural products to the ports of the North and Adriatic seas. As the head of the Deutsche Bahn company Richard Lutz promises, fast transportation of grain is planned, as there will be 2-3 trains a day that will go through Poland to the terminals of Western Europe. In its desire to help Ukraine, the Czech Republic does not lag behind its European colleagues. In May, the Czech cargo railway operator CD Cargo started transporting grain from Ukraine to European ports, from where the consignments on ships go to buyers. CD Cargo has a license to operate in all neighboring countries. In addition, on May 26, during an online meeting, Ukrzaliznytsia and the largest Polish carrier PKP Cargo discussed the possibility of using non-standard options for transporting grain. The parties agreed on the possibility of using not only traditional grain wagons, but also semi-wagons for grain transportation (Mucha M., 2022).

This is what First Deputy Minister of Agricultural Policy and Food of Ukraine Taras Vysotskyi said regarding the future prospects of food exports through Ukrainian seaports: “Given this state of affairs, the world community should unite and act now.

Today, Ukraine needs the support of the world not only in stopping Russian aggression, but also in unblocking sea ports and “green corridors” for the export of agricultural products. I am sure that the international community perfectly understands the existing risks in the matter of food security. So Ukrainian seaports will be unblocked in any case” (Vysotsky T., 2022).

Thus, the global world processes currently taking place in the world food market are due, on the one hand, to insufficiently favorable climatic conditions in many wheat-exporting countries, and on the other hand, to the impossibility of unblocking Ukrainian ports in the Black Sea due to the military aggression of the Russian Federation. All this provokes the deepening of the global food crisis and negatively affects the international economy and trade. Ukrainian wheat and corn continue their way to the consumer despite all the obstacles and troubles. And the government of Ukraine in these processes is doing everything possible to resolve the problems that have arisen. Currently, an active search for ways to improve the situation in the export of Ukrainian grain is underway. The following proposals for solving problems with the export of grain products deserve attention:

- creation of non-temporary, but permanent alternative routes for the export of grain from the Ukrainian territory;
- construction of grain warehouses in Poland on the border with Ukraine to facilitate the export of Ukrainian grain to Europe by rail. It is advisable to attract European and American investors to such projects;
- diplomatic efforts to extend the “grain agreement”;
- development of projects and their gradual implementation on the transition of railway freight transportation to the EU gauge. This will make it possible to increase exports even in case of repeated blockade of sea routes;
- installation of temporary grain warehouses - collapsible modular structures and large polyethylene bags, which will allow to preserve the harvest and, in the future, to ensure the supply of grain to world markets.

The Ukrainian government is also trying to find ways to solve export problems. The Ministry of Infrastructure reported that next year they planned to create additional

railway terminals on the borders with Poland, Slovakia, Hungary and Romania. It is expected that in cooperation with European partners, the transportation of goods by rail will increase by at least 50% from the pre-war level.

Despite all the troubles in the fiscal and budgetary regulation and despite the active phase of hostilities, Ukraine was and remains a significant supplier of food in the world and actively influences the world's global processes. In such a difficult and unprecedented situation, we once again proved that our country is worthy of being a member of the European Union and has long held a prominent place among exporting countries. Domestic agricultural exports are successfully tested by war and guarantee both world food security and Ukraine's financial strength.

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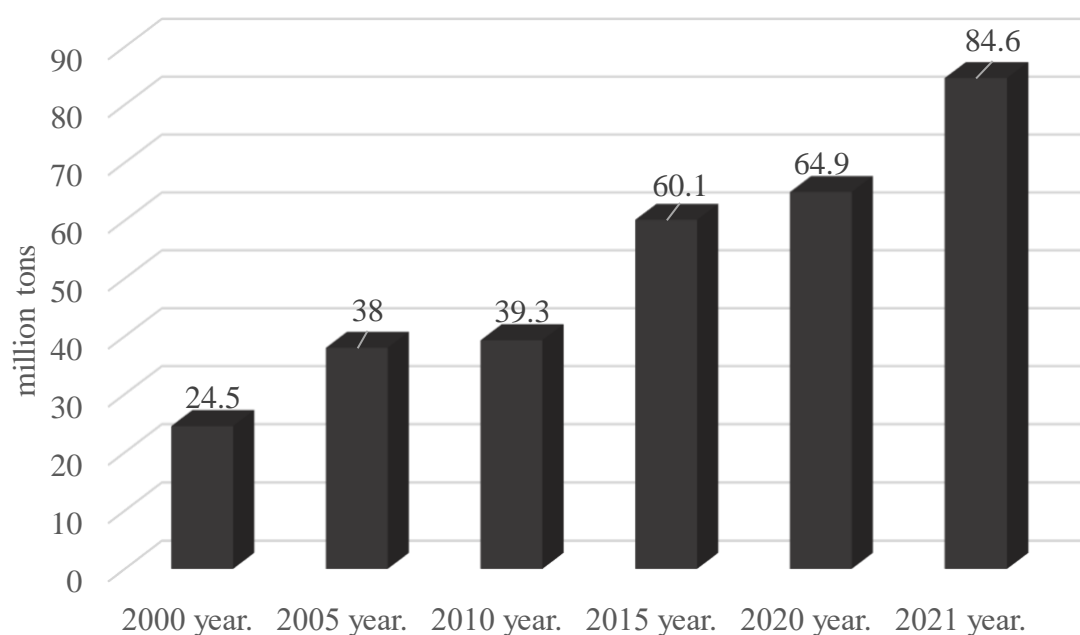


# SUSTAINABLE DEVELOPMENT AND FOOD SECURITY

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Today, Ukraine and the world are experiencing a deep economic crisis, which is a consequence of the direct military aggression of the Russian Federation against Ukraine. Disruptions in supply chain logistics, shutdown and destruction of a number of oil refineries, solar power plants, massive job losses, frantic migration of Ukrainian citizens abroad, failure to meet the required annual volume of natural gas have put global food security at risk. The poorest, socially and economically vulnerable residents of both Ukraine and the planet are now at the greatest risk. The crisis also affected almost all European countries. Therefore, in order to prevent entire regions of countries from falling into poverty, it is necessary to ensure global cooperation to strengthen food security.



**Fig. 1. Dynamics of grain and leguminous production in Ukraine during 2000-2021, million tons**

*Source: compiled according to data [9].*

Today, Ukraine is a powerful producer and exporter of grain products in the world. In recent years, its potential has increased significantly (Fig. 1).

Ukraine ranks among the world's top 10 producers of wheat, corn, and sunflower seeds (Table 1).

According to the data in the table, it can be seen that Ukraine ranks 7th in terms of wheat grain production, 5th in corn grain production, and leads the rating in terms of sunflower seed production. If we consider the top five of these types of products, the table shows that such countries as China, India, Brazil, Argentina and Ukraine are in this top five.

According to the ministry's announcement, the share of agricultural products in 2020 was 48% of Ukraine's total exports. The main share of agricultural exports is grain and oil crops (48% and 23%, respectively) [11].

Table 1.

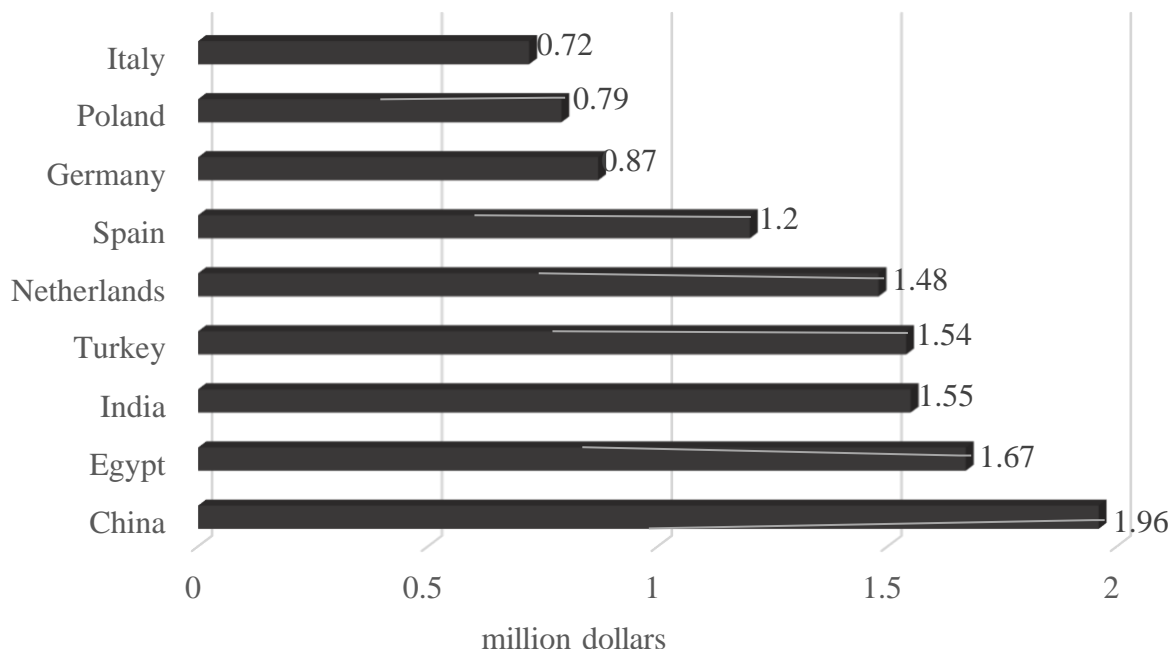
**Top 10 countries producing wheat, corn and sunflower seeds in 2021,  
million tons**

The country's place in the rating	Country	Volume of wheat production	Country	The volume of corn production	Country	The volume of sunflower production
1	China	137	USA	383.6	Ukraine	17.5
2	India	110	China	272.4	Russia	15.5
3	Russia	75	Brazil	113.7	Argentina	3.4
4	USA	45	Argentina	53	China	2.9
5	France	37	Ukraine	41.8	Romania	2.9
6	Australia	36	India	32.5	Bulgaria	2.0
7	Ukraine	33	Mexico	27.6	France	1.9
8	Pakistan	27	South Africa	16.3	Hungary	1.8
9	Argentina	22	France	15.3	Turkey	1.8
10	Canada	22	Russia	15.2	Kazakhstan	1.0

*Source: compiled according to data [10].*

The TOP-5 countries that most imported Ukrainian agricultural products during the reporting period included China (10.2%), Egypt (10.1%), Spain and the Netherlands (8.0% each), Turkey (6.6% ).

In dollar terms, it looks like this (Fig. 2).



**Fig. 1. The volume of imports of Ukrainian agricultural products in 2020, billion dollars. USA**

*Source: compiled according to data [11].*

The first place is occupied by China - 1.96 billion dollars. the USA, the second - Egypt (1.67 billion US dollars), the third - India (1.55 billion US dollars), the following others - EU countries.

If we consider the EU countries, then Ukraine remains in the top five exporters of agricultural products to the EU. Brazil, the United States, Great Britain, Ukraine and China are among the top destinations for agro-industrial imports to the EU in 2021. These countries account for 34% of the total volume of such imports [12].

Ukraine increased the sale of grain crops in 2021/22 MR. As of June 15, 2022, 47.71 million tons of grain have been exported since the beginning of the 2021/22 FY. This is evidenced by the data of the Ministry of Agrarian Policy and Food of Ukraine. According to their data, this indicator is 4.5 million tons or 10.4% higher than the results of the same period in 2020/21 MR [13].

If considered in terms of grain crops, as of the reporting date, wheat was exported from Ukraine - 18.64 million tons, which is 1.71 million tons or 10.1% more than in the same period of 2020-2021; similarly to barley - 5.73 million tons (1.59 million tons or 38.2% more); rye – 160,000 tons (by 150,000 tons or 12.5 times more); corn - 22.87 million tons (by 0.7 million tons or 3.2% more) (Table 2).

Table 2

**Export of grain from Ukraine from the beginning of 2021/22 MR  
as of June 15, 2022, million tons**

Period /Production	Wheat	Barley	Rye	Corn
2020-2021 MY	16,93	4,15	0,01	22,17
2021-2022 MY	18,64	5,73	0,16	22,87
Difference (+;-)	1,71	1,59	0,15	0,70
Difference (%)	110,1	138,2	1246,2	103,2

*Source: compiled according to data [13].*

According to these data, it would seem that everything is fine, even despite the war, the export of grain from Ukraine did not stop, but even increased. But it is not so. Here, data are taken for the 2021-2022 marketing year, which begins on July 1 of the current year and ends on June 30 of the following year. Therefore, if we consider the actual schedule of exports by month, the lion's share of exports falls on the second half of 2021 - 42.6 million tons of grain [14].

Starting from the first half of 2022, we see a sharp decline in the export of agricultural products (Table 3).

Table 3

**Export of grain from Ukraine since the beginning of 2022, million tons**

Period /Production	Wheat	Barley	Rye	Corn
February 21, 2022	17,80	5,60	0,16	18,70
June 15, 2022	18,64	5,73	0,16	22,87
Difference (+;-)	0,84	0,13	0,00	4,17
Difference (%)	104,7	102,3	101,3	122,3

*Source: compiled according to data [14].*

Table 3 shows that during the period from February 21 to June 15, 2022, almost nothing has changed. 840,000 tons of wheat were exported, 130,000 tons of barley, and no rye was exported at all. Among the four specified items, the largest amount of corn was exported - 4.17 million tons.

These indicators of the export of products for the current period indicate that Ukraine is not fulfilling the planned grain export schedule in the conditions of the war. There are many reasons, including disruptions in logistics supply chains, the destruction of a number of oil refineries in the spring months, a significant increase in fuel prices, the refusal of carriers to transport products from particularly dangerous areas, the blocking of ships in the port cities of Ukraine by Russia, and a number of other reasons. Starting from July, the export of products has changed somewhat for the better, but this is not enough to ensure the implementation of the plan until the end of the marketing year.

To solve the first question, we believe that the government of our country needs to make maximum efforts, which they are doing, to establish logistical connections with those countries in Europe and the world that need our products, in particular, agricultural products and products of their processing.

In order to make a profit from corn grain, including flour, of course, it is better to export it abroad. But in recent years, the demand for Ukrainian flour has significantly decreased in EU countries and the world. One of the reasons is the price, of course, which is more profitable for countries to purchase raw materials than finished products from them in the form of flour. Therefore, if we want to increase the potential for the production of grain and flour and obtain high profits, we must create processing enterprises that would process these products into a finished product that would be attractive for purchase and profitable for sale both inside Ukraine and abroad.

Therefore, today the most important thing is to develop those measures that would provide Ukraine not only with the increase in the volume of its own production of agricultural products, but also the products of its processing in order to export ready-made products of its own production to the countries of Europe and the world in the short term.

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# **CHAPTER 3. FINANCIAL MECHANISMS FOR ENSURING INNOVATIVE DEVELOPMENT OF BUSINESS ENTITIES**

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## **INVESTMENT ACTIVITY OF ENTERPRISE AT THE FINANCIAL MARKET AS FACTOR OF ITS INNOVATIVE DEVELOPMENT**

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The integral element of the national economy modernization is innovation and investment development of enterprises of all activity types, which must have legislative support and be stimulated by the state.

It is impossible to introduce modern innovative technologies at enterprises, increase their competitiveness and financial and economic activity efficiency without investment activity development in the areas of real and financial investment, accelerated attraction of domestic and foreign investments. Peculiarities of wholesale and retail trade enterprises functioning in Ukraine and strategic directions of their innovative development require systematic and complex management of investment activity, efficient use of own funds and attracted resources at the financial market. It requires improving the legislative [1; 2], social and economic, scientific and technical, financial and investment and organizational and managerial mechanisms that will increase the level of their investment attractiveness and stimulate innovative development.

Intensification of innovation and investment processes in Ukraine's economy depends on effective European integration, acceleration of scientific and technological progress, growth of capitalization and investment attractiveness of enterprises, increasing the level of social and economic development of the country as a whole and many other factors. It is impossible to introduce modern innovative technologies at enterprises, increase the competitiveness of products at the market and increase the efficiency of financial and economic activity without development of investment activity in the spheres of real and financial investment, accelerated attraction of domestic and foreign investments.

Foreign researchers have made significant contribution to the development of enterprise investment management theory: G. J. Alexander, R. Allen, J. W. Bailey, E. Berg, J. Brigham, C. Brue, L. J. Hitman, P. Drucker, M. Erhardt, J. M. Keynes, R. Coase, K. McConnell, M. Miller, F. Modigliani, J. Stiglitz, and others.

Scientific and methodological approaches to the management of investment activity of enterprises are covered in the scientific works of domestic economists, including I.A. Blank, L.M. Borshch, V.M. Hrynova, I.Yu. Yepifanov, L.D. Zabrodska, A.H. Zahorodnii, T.D. Kosova, N.S. Krasnokutska, T.V. Maiorova, I.P. Moiseienko, S.V. Mochernyi, L.O. Omelianovych, P.H. Pererva, A.A. Peresada, O.M. Pietukhova, V.H. Fedorenko, O.V. Feier, N.A. Khrushch, A.V. Cherep, M.V. Chorna and others.

Under high assessment of the scientific research results, it should be noted that in the scientific literature the mechanism of credit and investment activity of trade enterprises at the financial market is insufficiently covered. Issues, related to finding reserves of efficiency increasing of real and financial investments in trade, substantiation of methodological approaches to optimizing the structure of lending and investing in fixed and working capital of trade enterprises in Ukraine as financial sources for ensuring their innovative development, determining and implementation of legal, economic and organizational principles of state regulation of investment and innovation activity of enterprises, require further development.



The purpose of the research paper is substantiating the mechanism of credit and investment activity of trade enterprises at the financial market in the system of ensuring and stimulating their innovative development.

Creating conditions for the national economy growth in Ukraine and providing its attainment of new competitive level is impossible without expanding the financial opportunities of economic entities.

Trade enterprises activity under the market economy is associated with the use of various forms of financing for forming the necessary amount of financial resources – both own and borrowed. One of the most important problems which are faced by domestic trade enterprises is the lack of efficiency in the formation and use of financial resources under resource and consumer markets changing environment.

Solving the problem of trade enterprises resource potential increasing is impossible without the functioning of such separate area of the financial system as the financial market, including the credit sector and the securities market. Effective operation of a trade enterprise is possible under free access to financial capital markets. Trade enterprises need a large amount of short-, medium- and long-term credit and investment resources within the specifics of their activity.

In the economic space, trade entities are becoming more independent in choosing options for providing financial resources for their trade and economic activity. The financial market is becoming promising and favorable source and supplier of additional capital for the development of trade enterprises. Trade enterprise with working at the consumer goods market, is also a participant at the financial market.

The economy has appropriate financial system where important place is occupied by the financial market, at which the movement of temporarily free funds of various market participants occurs, as well as their distribution, redistribution and use in the form of loan and investment capital.

The financial market is an integral part of the financial system of the state. It can function successfully only under the market economy, when most of the financial resources are accumulated by business entities. With the help of the financial market,

as a rule, temporarily free financial resources in the form of savings and accumulations, which then are transformed into loan and investment capital are mobilized and used.

Thus, the financial market under market conditions becomes promising and important source of attracting credit and investment resources for the stable operation and intensification of trade enterprises innovative development.

There is no consensus in the economic literature about the financial market nature and its key functions. So, I.A. Blank characterizes the financial market as a money market in which purchase and sale objects are various financial instruments and services [4].

According to V.M. Sheludko point of view, it is at the financial market funds' moving occurs, during which they move from those who have surplus to those who need investments. At the same time, as a rule, funds are directed from those who cannot use them effectively to those who use them productively. It provides not only increasing productivity and efficiency of the economy as a whole, but also improving the economic well-being of each member of society [5].

V.P. Khodakivska believes that the financial market is the whole system of economic relations that arise between its direct participants in the formation of supply and demand for specific financial services related to the process of buying and selling, distribution and redistribution of financial assets which are owned by entities of the national, regional and world economy [6].

The financial market structurally includes the credit market (loan capital) and the securities market (stock market). All its constituent segments are interconnected and have their own internal structure. The purpose of the financial market for trade enterprises is providing them with appropriate conditions for the effective attraction of additional funds and the sale of temporarily free resources, where enterprises' accumulation is converted into investment resources for the national economy development.

Let's consider the mechanism and main activities of trade enterprise at the financial market, determine its place in the overall system of formation, distribution and use of credit and investment resources (fig. 1).

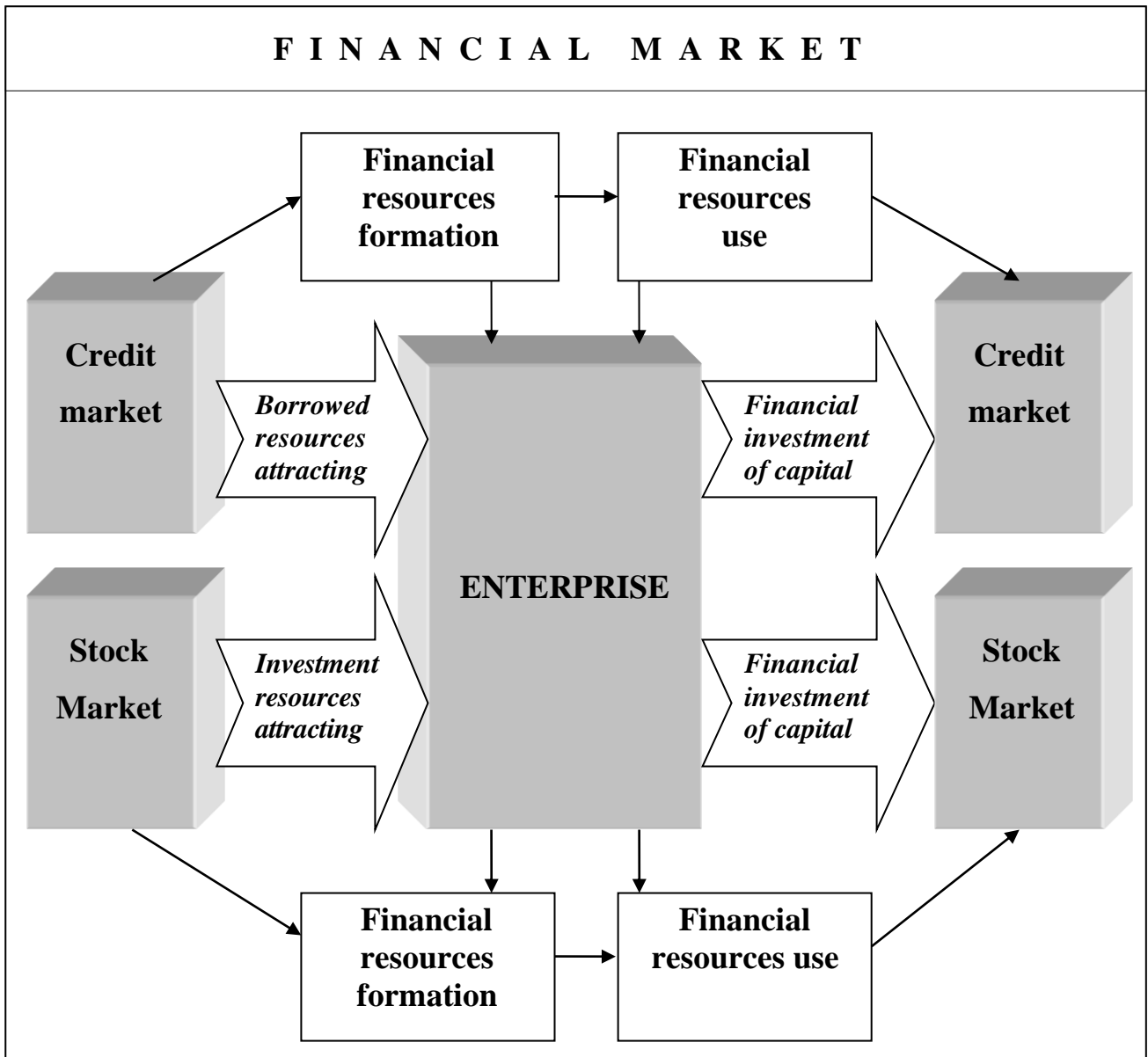
Significant role in the financial and credit support of trade enterprises is played by the market of loan capital or credit. The credit market, both historically and in its importance, is a major component of the financial market. It provides the fastest access to financial resources. It is the credit market that allows accumulation, distribution, redistribution and redirection of loan capital to a trade enterprise. The loan can be obtained in a very short time – within a few days. This advantage is very important in terms of rapid financial support of trade enterprises financial and economic needs [7].

The opportunities of the securities (stock) market are of great importance for the formation of trade enterprises financial and investment resources. The process of attracting additional capital to finance assets takes place in the primary and secondary markets through the mechanism of issue and sale of securities, which can be systematized as follows: operations on the issue of equity (founding) securities (shares); debt issuance operations (promissory notes, bonds, deposit certificates).

Trade enterprise stability providing, its competitiveness increasing, strengthening its position at the market are largely determined by the efficiency of its investments. The problem of the securities market efficiency improving as a mechanism for attracting investment in the real sector of the economy is one of the key tasks in recent times.

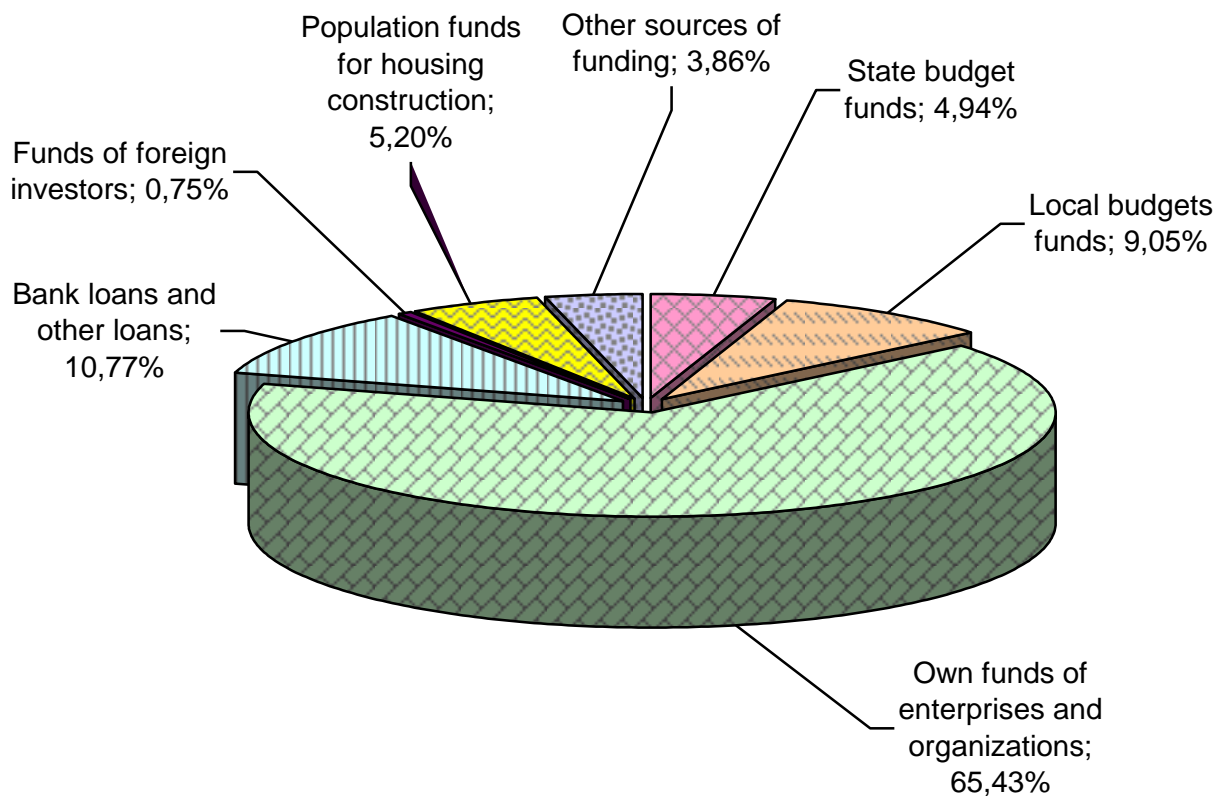
Trade enterprise in the role of issuer by issuing and selling its own equity and debt securities may attract foreign investors to the stock market for forming or replenishing equity and debt capital. As an investor, a trade enterprise can independently invest temporarily free money in various types of securities, which can bring its fairly high and stable income in the form of dividends, interests, exchange rate differences.

Analysis of official information of the State Statistics Service of Ukraine about investments by enterprises of Ukraine by main types of economic activity and in particular, by activity type – wholesale and retail trade; repair of motor vehicles and motorcycles, allows identifying key trends in the structure of financing investments sources in the economy of Ukraine [3].



**Fig. 1. Credit and investment activity of enterprises at the financial market (developed by the author)**

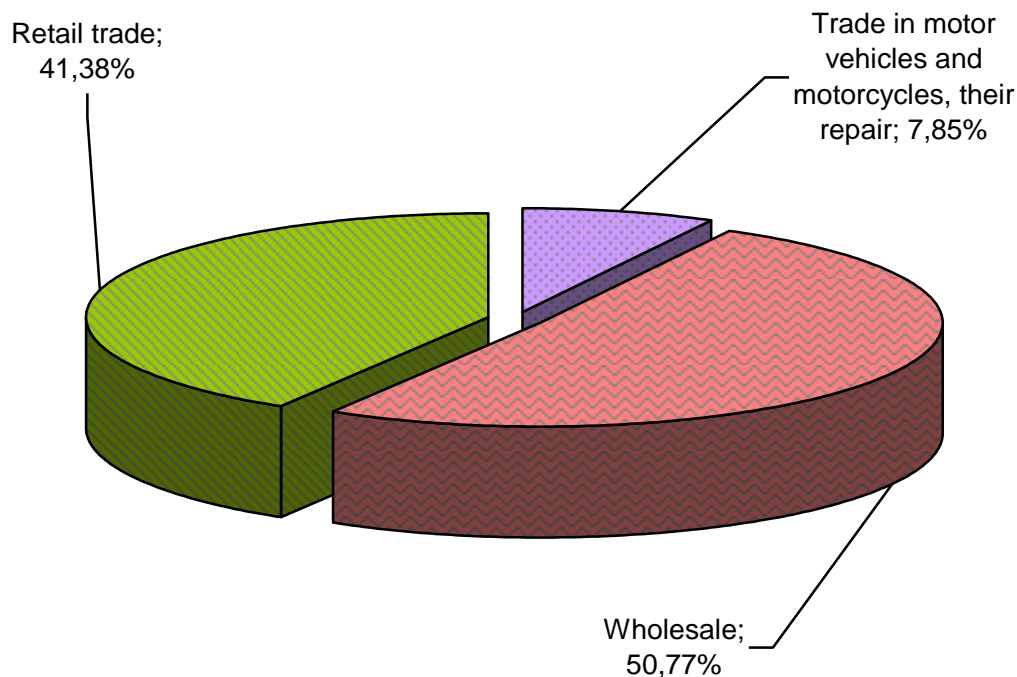
The capital investments structure in 2021 shows that the main source of financial and investment resources for economic entities is still the own funds of enterprises and organizations, which share is 60 – 70% of total investments. The state and local budgets share is 5 – 10%, the bank loans and other borrowed investment resources share is about 10%, the foreign investment share is extremely low and is 1 – 3% (fig. 2).



**Fig. 2. Structure of capital investments financing sources in Ukraine in 2021, % (developed by the author according to [3])**

The internal structure of capital investments of Ukrainian trade enterprises shows a high share of financial resources which are invested in wholesale trade – 50,8% of the total amount of investments in the trade sector in 2021. The share of real investment in retail trade is 41,4%. Capital investments in trade of motor vehicles and motorcycles and their repair is 7,9% in their overall structure [3], (fig. 3).

It should be noted that the instability of the political situation in Ukraine, chronic crises in the development of the national economy at the macro and micro levels, high prices of credit resources at financial markets, threatening inflationary risks do not allow enterprises and organizations expanding investment and resources base at the expense of financial institutions and do not provide more active domestic and foreign investments attracting.



**Fig. 3. Internal structure of capital investments in trade enterprises in Ukraine in 2021, % (developed by the author according to [3])**

Under conditions of a market economy the success of enterprises depends primarily on the development and implementation of an efficient corporate strategy and its components. Instability of economic conditions, significant impact of external factors in terms of inflation, increasing financial risks, intensifying competition in the resource and consumer markets require the development of anti-crisis strategy that will provide reaching a new level of development by economic entities and allow finding alternatives to overcome the crisis.

The necessity for stable functioning and development of national trade enterprises in the long-term period objectively requires developing an efficient anti-crisis financial strategy that should solve the problems of optimizing the structure of the sources of capital financing and develop measures as to increasing the efficiency of its use and recovery as it is a financial basis for further economic development of trade enterprises.

Modern severe business environment in Ukraine encourages theoreticians and practitioners to search and implement new, more effective ways of overcoming the crisis, caused by both external and internal factors.

A significant contribution to the theory of forming corporate strategy, strategic management and development of the financial strategy of an enterprise was made by well-known foreign and national scientists-economists, namely: I. Ansoff, K. Andrews, H. Mintzberg, A. Chandler, A.J. Strickland, A. Thompson, J. C. Van Horn, I.O. Blank, A.P. Mishchenko, Z.Ye. Shershneva, VA Grosul, A.P. Nalyvayko V.S. Ponomarenko, R.A. Fathutdynov and others.

Taking into consideration the high proportion of the borrowed capital in the structure of the sources of financial resources of Ukrainian trade enterprises and taking into account the significant impact of the borrowed resources on the financial results and financial security of trade enterprises, development of the efficient policy of managing financial resources, particularly the borrowed capital, as a key element of the financial strategy of trade enterprises becomes an urgent task.

In order to operate efficiently it is necessary for any enterprise to develop a substantiated strategy of long-term and sustainable development that is focused on continuous growth and maintaining market positions with providing a decent standard of competitiveness.

To ensure the effective functioning of enterprises a necessity for scientific substantiation of their development strategies arises.

The strategy of an enterprise is a systematic plan for its potential behavior in terms of incomplete information about the future development of the environment and business, including the formation of the mission, long-term objectives as well as the ways and rules of decision-making for the most efficient use of strategic resources, strengths and opportunities, elimination of weaknesses and protection from threats of the external environment for future profitability [8].

In our opinion, the most important strategic decision of a trade enterprise is the choice of its financial strategy, substantiation and adoption of which allows focusing

on key areas of financial activity and forms a basis for making further strategic financial decisions.

Financial strategy and policy of managing borrowed capital occupies a key place among supporting strategies developed for a specified period of time taking into consideration the specificity of functioning and development in order to achieve long-term objectives of a trade enterprise.

Financial strategy as one of the basic functional strategies of an enterprise accounts for the forecast of financial indices, evaluation of investment projects, allocation and control of financial resources. Development of substantiated financial strategy is the basis to ensure activity and efficient performance of a trade enterprise in the long run. Its most important component is making a decision on the capital structure that is optimal for an enterprise. An important component of the anti-crisis financial strategy is the development of the policy of managing borrowed capital.

The calculations made on the basis of the official information of the State Statistics Service of Ukraine prove the significant impact of the policy of managing borrowed capital in the process of forming anti-crisis financial strategy of trade enterprises [9].

Analysis of the main indices of the dynamics and structure of the capital of Ukrainian enterprises, the main type of the economic activity of which is the wholesale and retail trade for the period of 31.12.2015–12.31.2021, demonstrated such prevailing tendencies: the presence of extremely low share of the equity capital in the total sources of forming capital of trade enterprises in 2015-2021 and its complete absence in 2020–2021; high proportion of the borrowed capital in the general structure of the source of financial resources of wholesale and retail trade enterprises of Ukraine (table. 1, fig. 4).

These key tendencies in the forming the financial structure of the capital of Ukrainian trade enterprises for the period under investigation (2015-2021) led to the fact that since the borrowed capital almost “replaced” equity capital of trade enterprises and high cost of credit resources in the financial market significantly influenced the decrease in profitability of using capital and current assets, mainly financed due to the



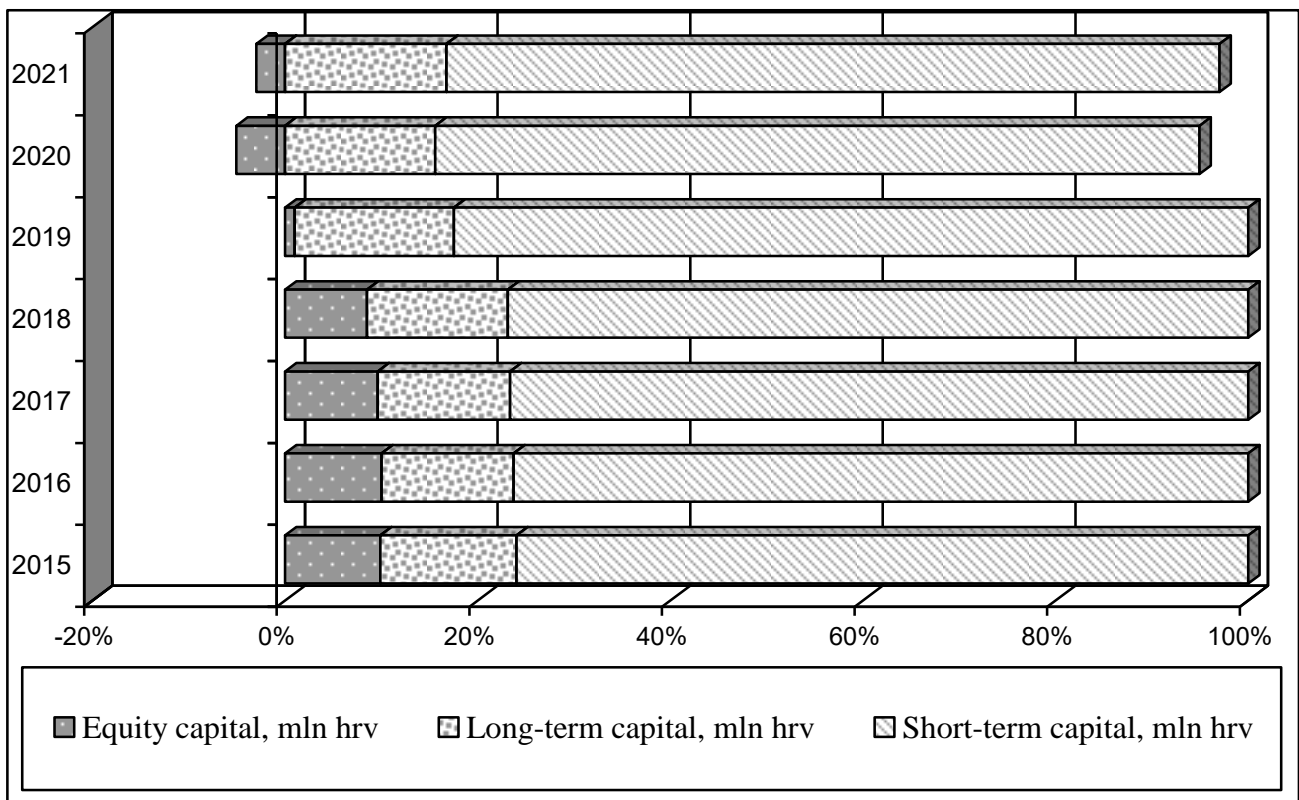
outside borrowed funds that resulted in the increase in financial risk and weighted average cost of capital, and eventually influenced the sharp decrease in the level of financial security of Ukrainian trade enterprises.

**Table 1 – Dynamics of the capital structure of Ukrainian trade enterprises for the period of 2015-2021**

<b>Indices</b>	<b>Years</b>							
	<b>31.12. 2015</b>	<b>31.12. 2016</b>	<b>31.12. 2017</b>	<b>31.12. 2018</b>	<b>31.12. 2019</b>	<b>31.12. 2020</b>	<b>31.12. 2021</b>	
Capital, %	100	100	100	100	100	100	100	
Proportion of the equity capital, %	9,8	10,0	9,6	8,5	1,0	-5,7	-3,2	
Proportion of the borrowed capital, %	90,2	90,0	90,4	91,5	99,0	105,7	103,2	
Including the share of the long-term capital, %	14,1	13,7	13,6	14,6	17,0	17,3	18,1	
Including the share of the short-term capital, %	75,6	75,8	76,2	76,9	85,0	88,3	86,7	

Source: Calculated by the author based on the data [9]

According to many economists [10-12], due to insufficiently high return on the used assets, economic entities that have larger share of the borrowed capital in the general structure lose their solvency faster because of the negative effect of financial leverage resulting from exceeding the level of the average interest rate on credit over the level of the economic return on assets that lead to the increased risk of nonpayment of interests and repayment of debts to creditors, “eating away” of the equity capital occurs, that can become the cause of an enterprise’s bankruptcy.



**Fig. 4. Capital structure of Ukrainian trade enterprises for the period of 2015-2021**

Source: formed by the author on the basis of the data [9, 21-22]

Taking into consideration the above mentioned we believe that the most important component in the system of forming the overall corporate strategy of trade enterprises is the development of the efficient policy of managing financial resources, particularly borrowed capital, as a key element in the formation and implementation of anti-crisis financial strategy of trade enterprises.

Review of the scientific sources allowed ascertaining the place and the role of the policy of managing borrowed capital in the system of strategic management of an enterprise where it is an integral part of the overall corporate, competitive and functional strategies, the component of forming anti-crisis financial strategy and an important area of implementing financial policy of a trade enterprise in the context of the most important aspects of financial activity at the particular stages of implementation.

The impact of key exogenous and endogenous factors on the formation of financial strategy and policy of managing borrowed capital of a trade enterprise should be taken into account and forecasted in the system of strategic management. Every trade enterprise should carefully analyze and evaluate the impact of the mentioned factors on the absolute and relative indices of financial and economic activity that indicate the efficiency of implementing tactical tasks and strategic plans of an enterprise's development during current and long-term periods, that, in turn, allows promptly revealing risks and threats of external and internal environments for financial security as a component of the general economic security of trade enterprises.

The borrowed resources are funds raised and used by an enterprise during the stipulated period stated in the contract with the creditor with obligatory following the principles of voluntariness, target pattern, urgency, recoverability, payability and security; they characterize the total amount of financial liabilities (debt) of an enterprise.

It should be taken into account that the overuse of borrowed funds generates the most threatening financial risks for an enterprise such as reducing the financial stability and possible loss of solvency that reduces the level of financial security. The disadvantage of borrowed capital is also high dependence of its value (cost) on the financial market condition, inflation rate, exchange rate fluctuations. Assets formed due to the borrowed funds, generate lower profit rate, owing to the necessity to pay credit interest in all its forms for the use of credit resources.

Thus, the key requirements in the process of the development and implementation of efficient policy of managing borrowed capital in the system of anti-crisis financial and overall strategy of national trade enterprises, in our opinion, should be:

- accelerating rate of growth of the share of equity capital in the structure of the sources of financing the total assets of trade enterprises due to recovering their own financial resources in the process of financial and economic activity on an extended basis;

- raising borrowing financial resources in the credit market taking into consideration the following key criteria: minimizing the cost of loan funds and financial risk level of each source; optimizing the timing and terms of repayment of long- and short-term borrowed financial resources; maximizing profitability of using raised funds in financial and trade activity;
- achieving proportionality, equilibrium and stability of the financial structure of the total capital, as well as capital and current assets of trade enterprises financed out of it;
- forecasting and forming strategy of stable development of trade enterprises taking into account possible changes in market conditions and the impact of factors of external and internal environments.

The system approach is becoming more and more popular today under adopting and substantiating of managerial decisions in various sectors of the economy. System methodology is the most streamlined and reliable base for managing of complex financial and economic activities; it allows determining and analyzing the components of the system and consistently combining them with each other.

The successful development and functioning of modern trade enterprise is determined by the effectiveness of the interaction of elements of the system of internal economic management, as well as the enterprise itself with the external environment. In our opinion, the important trend of the trade enterprise management system improving is construction of modern efficient management subsystem of its working capital and the organization of its management process with the unity and interconnection with other subsystems and elements which provide the stable functioning and dynamic development of trade enterprises in market conditions.

The current complicated conditions of entrepreneurship in Ukraine lead to the fact that the overwhelming majority of domestic trade enterprises suffer from sharp shortage of own funds for the working capital formation, which is the source of the financing of current assets constituent elements, and in its turn it significantly affects on the level of financial sustainability and efficiency of enterprises' financial and economic activity.

With taking into account the important role of working capital as mobile part of the financial resources which advance money to elements of trade enterprises working assets, the substantiation of methodical approaches to organization of the efficient system of working capital management, optimization of its sources structure and assets financing, assessment of the efficiency of working capital management at each stage of the financial and reproducing cycle require special attention, and, as a result, the indices of profitability, business activity, liquidity, financial sustainability and the stability of trade enterprises development depend on it.

Fundamental scientific works of foreign scientists: R. Akoff, Ch. Barnard, L. von Bertalanfi, St. Bir, D. Dikson, R. Dzhonson, V. Kinh, Dzh. Klir, E. Kunts, O. Lanhe, E. Laslo, U. Ros, R. Saimon, Dzh. Forrester, F. Emeri, S. Yanh and other made significant contribution to the development of the system approach as management methodology.

V.H. Afanasiev, A.I. Berh, I.V. Blauberh, O.O. Bohdanov, S.A. Valuiev, V.N. Volkova, S.P. Nykanorov, V.N. Sadovskyi, F.E. Temnykov, V.S. Tiukhtin, A.I. Uiemov, Yu.I. Cherniak, Yu.A. Urmantsev, E.H. Yudin and others should be noted among domestic scientists.

Despite the significant number of scientific works, the issues which are related to the definition of the essence, functions, principles, mechanisms, peculiarities and specifics of the system approach use to the trade enterprises working capital management at the successive stages of the reproducing process which occurs on the capitalized (expanded) base are still topical.

The development and implementation of the effective system of working capital management of trade enterprises is becoming more and more important at the present stage of the market transformation of the national economy; it should solve the problems of optimizing the structure of the sources of its formation and develop measures for improve the efficiency of its use and reproducing, since it is essential in the functioning and the further development of trade enterprises.

The set of elements which are interconnected and interdependent from each other and form a certain unity is considered the «system» in foreign and domestic

economic literature. So, according to R. Akoff, the system is any essence, which consists of interconnected parts [13]; L. von Bertalanfi considers the system as the complex of elements in interaction [14]; W. Hoslinh under the system understands the set of simple parts [15]; by A. Hall, the system is plurality of objects along with the relationship between objects and their attributes [16]; K. Watt believes that the system is an interactive information mechanism of the economic activity of the enterprise, which is characterized by many causal interactions [17]. O.V. Kustovska considers the system as a way of solving a certain problem, which is, as a set of all necessary knowledge, information, material means and methods of their use, organization of people's activities aimed at solving the problem [18]; R.A. Fathutdinov defines the system approach to management as an approach in which any system (object) is considered as a set of interconnected elements which have «input» (goal), «output», connection with the external environment, feedback and the «process» in the system [19].

The determinative principles of the system approach include: integrity, structural, proportional, interdependence of the system and the external environment, hierarchy, multiplicity of descriptions of each system, balance, continuity in management, ontogenesis, composition, integration, awareness, stability.

Enterprise as dynamic system is formed by the set of three elements: input, transformation, output. The internal component of the management system is the «process», which is treated by economists as series of direct interrelated actions. These actions, each of which is already itself process, largely determine the success of management activity. They were called «managerial functions», each of which is also process.

Trade enterprise can be considered as complex economic system which provides close connection between the spheres of production and consumption of goods through the implementation of its classical intermediary macro and microeconomic functions: value realization, changes of the value form (commodity for monetary) and ownership; distributive; integrating; assessed; organizing and regulating; transformation of the production assortment of goods into trade; transportation, formation and storage of

commodity stocks; completing and bringing the goods to the required quality; sorting, gathering, prepacking and packing; organization of after-sales service, etc.

Retail trade enterprises are closest to the end consumers of goods, therefore, new functions of retail trade are actively developing in the market conditions: the study of consumer demand and its effect on it; analysis of commodity and financial market conditions; lending to customers; providing of consulting services; marketing researches of the market and advertising, etc. The special feature of the market activity of retail trade enterprises is their dualism, because in contact with suppliers of products intermediaries act as representatives of demand, while offering goods to customers, they act on behalf of suppliers. The distinctive feature of the market activity of retail trade enterprises is the increased attention to the quality of service, for active effect on the formation of consumer demand.

It necessitates the effective management of the trade enterprise working capital; its sufficient volume is the base for the successful functioning and financial support of economic activity, the implementation of characteristic functions of retail trade and further economic growth.

Financing of the expanded reproducing process, fulfillment of financial obligations to the budget, banks, insurance and other organizations and social and economic development of the enterprise as a whole depends on the working capital volume.

Innovative development of domestic trade enterprises necessitates the comprehensive study of the processes of formation, investment and use of working capital for providing effective operation and achieving the dynamic balance with the external environment, finding ways of surviving of trade enterprises under competitive market development.

The system approach means logically grounded approach to the working capital management of an enterprise as complex system, which is formed from separate elements with numerous internal and external relations. The system principle involves the formation of mechanism for the working capital management as the specific dynamic system.

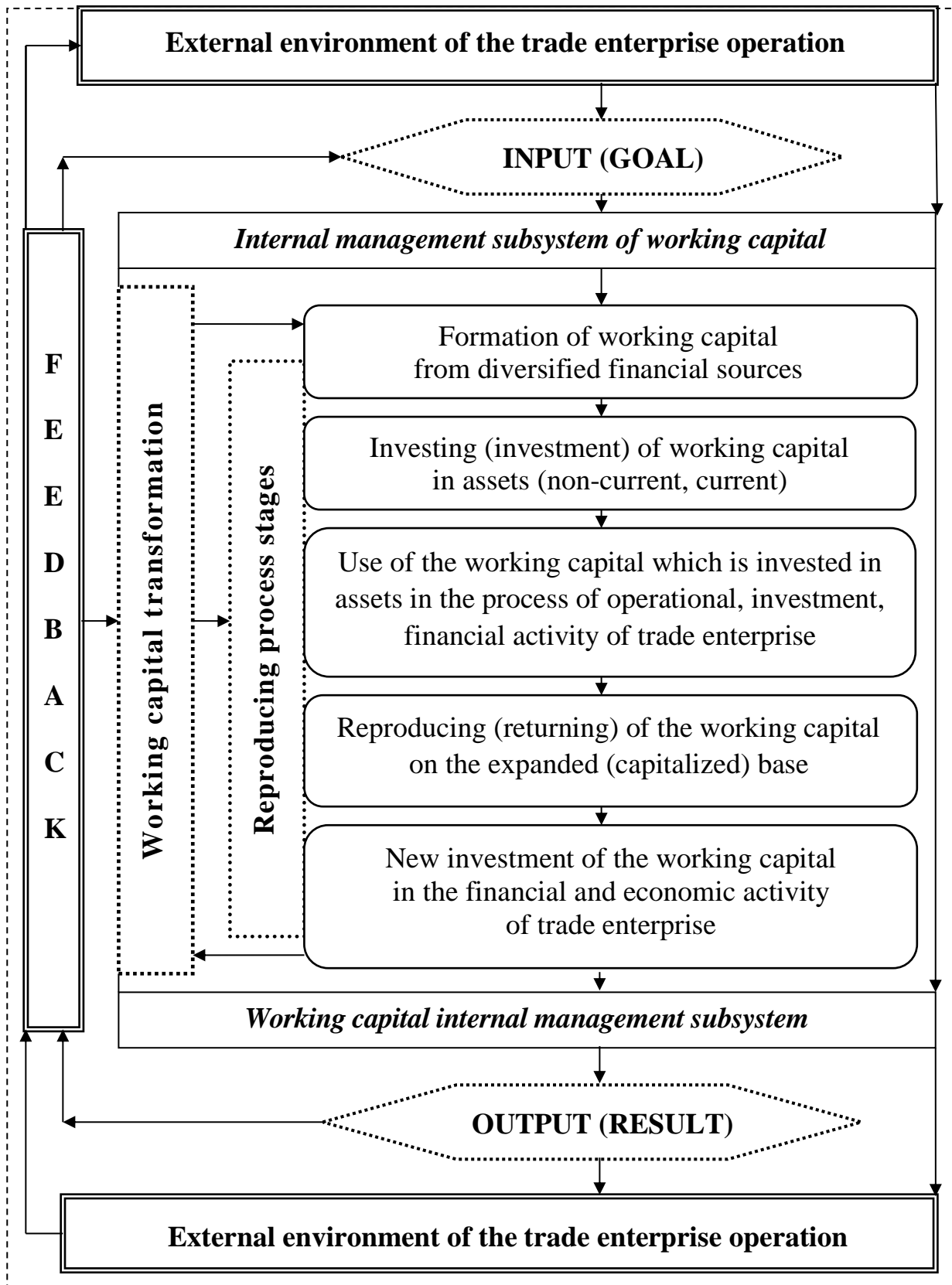
The essence of the system approach to the working capital management of trade enterprise is in the formulation of goals and determining of their hierarchy before the start of any management activity; obtaining maximum effect, that is, achievement of the goals with minimal expenses with the help of comparative analysis of alternative ways and methods of goals achievement and implementation of the appropriate choice; the quantitative assessment of the goals, methods and means of their achieving is based not on partial criteria but on broad and comprehensive assessment of all possible and planned operational results [20].

The working capital management system of trade enterprise involves the following components: external environment, which includes system's input and output, connection with the external environment and feedback; internal structure, as a set of interrelated elements, which provide the process of influence of the management subject on the object, processing of input to the output and system's goals achieving (fig. 5).

The working capital management system of trade enterprise must meet the basic requirements, namely: there must be cause-effect relationship between elements of the system; the system must be dynamic, that is, possess the ability to change its quantitative and qualitative status; the system must have the parameters influencing on which can change the course of the economic process.

System management objects include input, process, output, feedback, and restrictions. Input is the size and structure of the sources of working capital, which were formed for its use in the management process. Output is the result or the final status of the process. In our case, it is the residual value and the structure of working capital (current liabilities) and the assets of the enterprise at the end of the system cycle. The connection provides the coordination of the input and output of the process.





**Fig. 5. Trade enterprise working capital management on the base of the system and reproducing approaches (developed by the author)**

In our opinion, following basic interconnected processes which turn the input into the output and provide the transformation of working capital in the system can be marked out in the internal structure of the general management system of trade enterprise working capital (see fig. 5): 1) processes, which is connected with the formation and mobilization of working capital from various sources (own, borrowed, attracted); 2) processes which are related to the allocation of working capital in the assets of the enterprise (non-current, current); 3) processes related to the use of working capital invested in assets in the process of operating, investment, financial activities of trade enterprise; 4) processes related to the reproducing (returning) of working capital on the expanded base, which provide the capitalization of trade enterprise (increasing of its market value); 5) processes which involve new investments of working capital in the economic activity of trade enterprise.

The organization of working capital management system of trade enterprise should be based on the compliance with certain principles: taking into account development prospects and subordination to the general and financial strategy of the trade enterprise development; providing the optimality of the structure of financial sources of working capital (own and borrowed); providing expenses' minimization for the formation of working capital from different sources; providing the correspondence of the volume of attracted loan capital to the volume of current working assets; formation of the rational structure of assets and capital; minimization of financial risks in the process of formation and use of working capital; organization of timely monitoring, systematic control, analysis and assessment of the effectiveness of the policy of trade enterprise working capital management.

Feedback in the system compares the actual status of output with the output model and marks out differences (comparing the real volume and structure of assets and capital existing at the enterprise and similar indices, the achievement of which was planned), assesses the content of the differences, develops the managerial decision (factors are determined, which effect on the result, and also assessment of their effect on the final result), forms the process of implementation of these decisions, affects on

the main process of the working capital management system of the enterprise for harmonization of output and output model.

Calculated data which are obtained on the base of official information of the State Statistics Service of Ukraine [9, 21–22] show the significant effect of the subsystem of working capital management as an integral part of the management system of the trade enterprise.

The analysis of the main economic indices of financial and economic activity of enterprises of wholesale and retail trade of Ukraine for the period of 31.12.2015 – 31.12.2021 showed the following preferential tendencies:

- the presence of a very low share of own working capital in the general sources of capital formation of trade enterprises (9,8%; 1,0%) and its total absence (–5,7%; –3,2%; –0,2%);

- high proportion of borrowed capital in the overall structure of working capital sources of wholesale and retail trade enterprises of Ukraine (90,0–99,0%), (105,7%; 103,2; 100,2%);

- rapid increasing of the average interest rates for legal entities for long-term and short-term loans from banking institutions (15,5% – 24,4%; 19,2–16,4%), and it ultimately effected on the weighted average cost of borrowed and total capital of trade enterprises.

The identified key trends in the formation of the financial structure of the capital of Ukrainian trade enterprises for the study period (2015 – 2021) led to the fact that since loan capital almost displaced trade enterprises own funds and the high price of credit resources in the financial market significantly effected on the reducing of the profitability of working assets use, which were financed mainly through borrowed funds. It also caused the increasing of the weighted average cost of capital, the level of financial risk, affected on the sharp decreasing of financial security and the increased crises and threats probability to Ukrainian wholesale and retail trade enterprises.

Negative phenomena in the capital financial structure formation and the obtained financial results of trade enterprises can be explained by the significant effect of

external factors which are connected with the general crisis political and financial and economic situation which developed in Ukraine during the investigated period.

Thus, the analysis of the dynamics and structure of the main financial sources of capital formation of Ukrainian trade enterprises during shows that there is the disproportion in the ratio between own, long-term and short-term borrowings, which formed the fixed and working capital which was used by wholesale and retail trade enterprises for the financial and resource support of their economic activity.

The study allows making the conclusion that the use of system and reproducing approaches will equip the managers with the necessary tools for forming the efficient management system of trade enterprises working capital, which is adequate to modern requirements for economic entities management.

The working capital management system can be interpreted as set of forms, methods, techniques, operations and functions, through which implement the enterprise's working capital management; or as part of general enterprise's management system, which in turn consists of two subsystems: the management object and entity. The strategic task of developing an effective trade enterprise management system is managerial effect on the working capital at each stage of the reproducing process for increasing of its formation efficiency, asset investing, use and reproducing on the expanded base.

From the point of view of the system approach, the working capital management system of enterprises involves the determining of the working capital management structure, its communications and functionality. The structure of the subsystem of working capital management is the composition and functions of its main parts; communication is its information links; functionality is the mechanism of its activity.

Thus, improvement of the organization of working capital management of trade enterprises on the base of the use of methods and tools of system and reproducing approaches should be considered as one of the main factors in increasing the efficiency of their financial and economic activity. The improvement of the positions of trade enterprises in the competition, their stable functioning and dynamic development in the current market conditions in the long-term period depends on it.

Activization of development of is innovative-investment processes in economy of Ukraine depends from ii effective eurointegration, acceleration of scientific and technical progress, growth of capitalisation that of investment appeal of the enterprises, increase pівня social and economic development of the country in general that of many other things factors. Without development of investment activity in spheres of the real and financial investment, the accelerated attraction of domestic and foreign investments not possible introduction of modern innovative technologies at the enterprises, growth of competitiveness of production and increase of efficiency of financial and economic activity. Today level of scientific and technical equipment, updating depend on level of financially-investment maintenance and modernisations of the basic means of the domestic enterprises of different kinds of economic activities, possibility of structural reorganisation of national economy, the decision social, regional, demographic, environmental problems.

Is innovative-investment development of the enterprises of all kinds activity are the integral element of modernisation of national economy which should be stimulated legislative support that with the state. Features of functioning of the enterprises of wholesale and retail trade of Ukraine and strategic directions of their is innovative-investment development require improvement that of an effective utilisation legislative, economic, scientific and technical, financially-investment that organizational-administrative mechanisms which will promote growth level to their investment appeal that to stimulation of innovative development.

Integration of Ukraine in European and economic essentially raises attention of external and internal investors to formation by the state of an investment climate in the country and regions, an objective estimation of investment appeal and innovative potential of the enterprises of different kinds of economic activities which are key characteristics which promote intensity of attraction of external and internal investments.

In the modern economic literature some approaches to interpretation of investment appeal [23-26] were generated: as integrated characteristic of the separate enterprises, business-projects, real and financial objects of the future investment from

a position of prospects of their development, volume and possibilities of sale of production, efficiency of use of actives and their liquidity, a condition of solvency and financial firmness; as investment appeal of separate regions, areas of economy, real projects, financial (share) tools; as prospects of development and possibilities of attraction of investment resources which define level of satisfaction of financial, industrial, scientific and technical, ecological, organizational requirements and interests of investors concerning the concrete enterprise; as sets of economic-psychological characteristics of activity of the enterprise which satisfy requirements of the investor.

The estimation of investment appeal of trading enterprises as objects attraction of external and internal investments, the analysis of their ability to use and increase internal is innovative-investment potential are the important factors increase of efficiency of investment activity that of appeal of trade enterprises of Ukraine. Therefore a special urgency gets a scientific substantiation of teoretiko-methodical principles of management of investment activity that is a key condition of successful functioning and the development, the influential lever of growth level is innovative-investment appeal of trade enterprises.

In modern crisis conditions of economic activities of management of investitsionno-innovative development of trade enterprises directed on improvement of the intraeconomic financially-investment mechanism, methods, tools, procedures and technologies of investment, systems of formation and distribution of financial results, increase of financial firmness and solvency which is the important factors of an intensification investitsionno innovative development of trade enterprises. It, in turn, will promote increase of efficiency and competitiveness of trade enterprises in the market, to growth of economic indicators of operational and financially investment activity which will stimulate solvent demand and improvement of well being of the population.

In the course of scientific research of investment processes of great value the estimation of key tendencies which occur in dynamics and structure of sources of financing of capital investments of the enterprises for economic activities principal

views, gets revealing of features of realisation of real and financial investment at the enterprises of wholesale and retail trade of Ukraine for the long period.

Set of political, legal, economic, ecological, social and other factors influences innovative potential and investment appeal of separate subjects of business, regions and the country in general.

By us are defined key factors influences on level of investment appeal and potential of innovative development of a trading enterprise which are economic tools of formation and realisation його is innovative-investment strategy, levers reaction on Changes conjuncture of the financially-investment market which provide acceptance of the proved strategic and tactical administrative decisions during time a correcting of an investment trajectory of trade enterprise:

- profitability, a recoupment, stability ia risk of the enclosed investments - key financial indicators which allow to estimate objectively level of investment appeal of concrete trade enterprise regarding realisation of real (capital) or financial investments throughout the relevant period;

- stability of financial maintenance of sources of formation of the investment capital and potential stimulation investitsionno-innovative development, growth of capitalisation of a trading enterprise;

- level of investment activity and speed of a recoupment of the invested capital, the accelerated rates of its reproduction on the expanded basis;

- maintenance strategic forecast, stability and efficiency of investment activity of the enterprise, increase of level of investment return and appeal to internal and external investors;

- efficiency of an estimation and management of regular and not regular risks of real and financial investments;

- a management efficiency portfolios real and financial (share) investment-projects.

For investors who plan to make the administrative decision on investment of means in real (capital), financial, innovative, intellectual objects and projects (social, ecological, infrastructural, information, to marketing, important there are answers to

key questions on which the expediency depends, an optimality, stability, efficiency, that is appeal of the planned investments [20]:

1) the estimated level of investment return (the income, profit) and intensity of reproduction (recoupment) in time of the capital invested in business-projects;

2) financial structure and a market price of the invested capital, the forecast of internal norm of profitability investment project;

3) predicted terms of realisation investment-projects (taking into account preinvestment, investment, and operational phases) to achievement of a point of break-even project then investment project becomes profitable and attractive;

4) predicted duration (in years) functioning placed in operation investment project;

5) level of the received social and economic investment return on different stages trading enterprise life cycle;

6) probability and degree of influence of investment risks at development cycles, realisation and operation investment-projects.

It is necessary to develop convenient methodical toolkit which will help to estimate objectively current and strategic efficiency certain investment-projects and investment activity for the relevant period for the answer to the put questions, to predict investment potential of a trading enterprise behind the basic forms and kinds of investment which in general will affect level of its investment appeal and potential of innovative development in long-term prospect.

Let's consider base principles and methodical approaches to estimation expediency and level efficiency real and financial investment-projects:

– comparison of cost and terms of investment investments to volumes and terms of reproduction of the invested means;

– speed of a recoupment of the enclosed capital through monetary streams which generate them investments;

– an estimation of the turned invested capital on the basis of an indicator of a pure monetary stream (the sum of net profit and depreciation charges) during operation investment-projects;



- scoping of investment expenses which due to cover all set of resources which are used and connected with realisation investment-project;
- the sums of investment expenses and a pure monetary stream should be shown to pure present cost investment-project;
- during time estimation the shown cost of investments predicted indicators of profitability, times of recovery of outlay, level to risk, financial firmness, liquidity and other individual characteristics real and financial investment-projects should consider the size of a discount rate.

On the basis of named above key determinants of influence on level of investment appeal and potential of innovative development of trading enterprises, taking into account base indicators estimation to efficiency real and financial investment-projects, for the purpose of conducting the express train-otsenivanija of investment appeal of a concrete trading enterprise, we offer a matrix which is based on comparison and estimation deviations of actual values of indicators from optimum behind groups of target criteria: profitability, a recoupment, financial stability and risk of investments which allows the potential investor to estimate operatively level of investitsionno-innovative appeal of the concrete enterprise regarding the planned real or financial investments (tab. 2).

**Table 2 – Matrix of target criteria and indicators the express train-otsenivanija investment appeal of trade enterprises**

Level of investment appeal of trade enterprise	Target criteria and indicators the express train-otsenivanija investment appeal of a trading enterprise			
	Profitability level (IRR)	Recoupment time (RT)	Financial stability (FS)	Financial risk (FR)
I. High level	$IRR_i > WACC$	$T_i \leq T$	$K_{FSi} \geq K_{FS}$	$K_{FRi} \leq K_{FR}$
II. Average level	$IRR_i > WACC$	$T_i \leq T$	$K_{FSi} < K_{FS}$	$K_{FRi} > K_{FR}$
III. Low level	$IRR_i < WACC$	$T_i > T$	$K_{FSi} < K_{FS}$	$K_{FRi} > K_{FR}$

The resulted matrix does not cover all complex of indicators which are used during the fundamental analysis of investment appeal real and financial projects. To its problems the operative estimation of efficiency, expediency and an optimality of the investments planned by the investor in certain object or projects.

Owners, managers and external investors should apply the complex approach to *оцениванию* investment activity of trading enterprises which considers the branched out system of indicators of business plans investment projects on different stages their realisations: the forecast of the pure monetary stream shown to modern cost; the planned and actual indexes of profitableness and profitability; internal norm of profitability rather with the average price of the invested capital; the actual and optimum periods of a recoupment and operation investment projects; indicators estimation overall risk influences (regular and not regular) on realisation and operation investment projects, risk of financial structure of the invested capital which pay off with the help of statistical and expert methods.

On the basis of results the express train-*otsenivaniya* of efficiency of investment activity of trading enterprises of a sample in a cut of real (capital) and financial investments we give a complex estimation of investment appeal of each trading enterprise on set of key criteria: profitability, a recoupment, financial stability and risk of investments which allows the potential investor to define advantages (+) and lacks (-) the future investments and to estimate the general level of investment appeal and potential of innovative development of concrete trade enterprise (tab. 3).

Using tab. 3 indicators, each trade enterprise of a sample can see "bottlenecks" in realisation of investment activity in a cut of real and financial investment which influence decrease or growth of its efficiency and eventually define level of investment appeal, and also on this information basis to develop the proved tactical and strategic administrative decisions directed on maintenance of growth of investment potential in system of innovative development of trade enterprises.

**Table 3 – Estimation of level of investment appeal of trading enterprises of a sample**

№ enter- prises	Real (capital) investments				Financial investments				Estimation of level of investment appeal
	IRR	RT	FS	FR	IRR	RT	FS	FR	
<b>I. Trading enterprises goods of technical</b>									
1	-	-	+	+	-	-	+	+	Average
2	-	-	-	-	-	-	-	-	Low
3	+	-	+	+	+	+	+	+	High
4	-	+	-	-	+	+	-	-	Average
5	-	+	-	+	-	+	-	+	Average
6	+	+	+	+	+	+	+	+	High
7	+	-	+	+	+	-	+	+	High
8	-	+	+	+	-	+	+	+	High
9	+	+	+	+	-	+	+	+	High
10	-	+	-	-	-	+	-	-	Low
11	-	+	+	+	+	+	+	+	High
12	+	+	-	-	+	+	-	-	Average
<b>II. Trading enterprises goods of food</b>									
1	-	+	-	-	+	+	-	-	Average
2	-	-	+	+	-	+	+	+	Average
3	+	-	+	+	+	-	+	+	High
4	-	+	-	-	+	+	-	-	Average
5	-	-	+	+	-	-	+	+	Average
6	-	+	-	-	-	+	-	-	Low
7	-	+	+	+	-	+	+	+	High
8	+	+	-	-	-	-	-	-	Low
9	-	+	-	-	-	+	-	-	Low
10	-	-	-	-	-	-	-	-	Low
11	+	+	+	+	+	+	+	+	High
12	-	+	-	-	+	-	-	-	Low

Thus, in modern conditions of a high competition in the financially-investment market and a difficult social and economic situation in the country potential investors have a necessity operatively to estimate investment appeal of a certain trading

enterprise as potential object of the future capital or financial investments on the basis of the analysis of efficiency of realisation of investment activity for last period. The offered methodical toolkit will help to estimate current efficiency separate investment project and investment activity of a concrete trading enterprise for the relevant period, to predict its investment potential behind the basic forms and kinds of investment which in a complex influences level of its investment appeal.

By means of system of key indicators the express train-otsenivaniya of investment appeal of trading enterprises behind groups of target criteria (profitability, a recoupment, stability and risk of investments) is possibility range trading enterprises behind degree of their investment efficiency, reliability and appeal to internal and external investors. The given complex estimation of investitsionno-innovative appeal of trading enterprises of a sample of of Kharkov is the important source of the information for the further working out and acceptance of the proved administrative decisions directed on investitsionno-innovative development of the enterprises of trading area in region and the country.

There is an urgent need to create an effective system of trade enterprises management and, in particular, its important subsystem – the management of investment and innovation activity, where financing and efficient implementation of investments play crucial role.

On the analysis base, we formulate the key requirements which should be taken into account during the development and implementation of investment and innovation strategy of domestic trade enterprises:

- improvement of investment and other economic legislation and its adaptation to European standards;

- stimulation by the state of enterprises investment activity because of comprehensive provision and guarantee of favorable investment conditions;

- creation of new jobs by attracting internal and external investments in scientific and technical, innovative, social, environmental, infrastructural, information components of enterprises;

– formation of current and long-term policy of innovative development with taking into account the investment situation and the effect of social and economic factors of internal and external environments;

– search and attraction of borrowing and investment resources at the financial markets with taking into account their minimum value and low level of risk;

– achieving proportionality in the vertical and horizontal structure of assets and capital, own and borrowed sources of investment;

– accelerated growth of the own funds share in the structure of investment sources and investing efficiency increasing in real and financial investments;

– increasing the profitability of own and borrowed investment resources use in compliance with system-wide and specific principles and approaches to investment management;

– development of start-ups of investment projects for identifying business models that will allow quick entering the market and scaling newly created products or services.

Thus, in today's volatile market conditions, which are characterized by high competition at resource, financial and investment and consumer markets, as well as difficult social and economic situation in the country, potential investors need to reasonably assess the investment attractiveness of certain trade enterprises as potential objects of future capital or financial investments.

The problem of credit and stock markets efficiency improving as sources of attracting domestic investments in the economy, in particular, in trade, is one of the key issues today. The purpose of financial market institutions and its individual sectors (credit and stock markets) for trade enterprises is in providing appropriate conditions for the effective and rapid attraction of additional credit and investment resources if it is necessary, or the sale of temporarily free funds for generating additional income when own accumulations through financial intermediaries are transformed into real or financial investments for the national economy development.

Forms and methods of mobilization and use of resources at the financial market are very diverse, but its important task is full, timely and least costly meeting the

financial and economic needs of a trade enterprise, which can be effective lender and borrower, issuer and investor.

Providing the stability and further development of Ukrainian trade enterprises, increasing their competitiveness, strengthening their position at domestic and foreign consumer markets and capital markets are largely determined by the efficiency and effectiveness of investment activity that affects the level of investment attractiveness and strategic innovative development of trade enterprises.

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# **TRENDS OF AGRICULTURAL INSURANCE IN THE SYSTEM OF PROVIDING INNOVATIVE DEVELOPMENT OF AGRIBUSINESS**

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Comprehensive development of the agricultural sector is important as one of the main directions of increasing the reliability of the state's food security, diversification of the economy, and expansion of export potential.

The agro-industrial sector plays an exceptional role in solving the economic and social problems of the country, especially in employment of the population. Complex social development of the agrarian sector contributes to increasing the reliability, stability of food security, economy as one of the main directions of diversification and expansion of export opportunities.

Agricultural production is directly related to various risks that negatively affect the sustainability of the industry. Particularly dangerous are risks that are practically impossible to control, for example, extreme weather conditions. According to FAO estimates, there is an increase in natural disasters (hydrological and climatic) in the world. The economic consequences of their influence are significant for agriculture - they account for 26% of the total volume of losses.

Taking into account the diversity and nature of the manifestation of risks in agro-industrial production, their grouping is carried out using various features: types of risks,



forms of influence, negative results of influence, etc. The set of risks that affect the activity of agricultural enterprises is given in the tabl. 1.

**Table 1 – The main types of risks and forms of their influence on the activity of agricultural enterprises**

Types of risks	Forms of influence	Negative results of influence
Natural	Natural erosion processes	Shortage of agricultural products due to adverse weather conditions
Man-made	Physical and chemical soil pollution, improper use of mineral fertilizers and pesticides, soil pollution with toxic chemicals, fuel and lubricants, overwetting and wind salinity of land, and increased production energy costs	Deterioration of soil quality and reduction of the yield of ecologically clean products
Anthropogenic	Water and wind erosion, deterioration of the soil structure, mechanical destruction and compaction of the soil, permanent depletion of humus and nutrients	Soil degradation, loss of soil cover, reduction of nutrients in the soil and disruption of the natural balance
Radiation	Ionizing radiation of radioactive materials in the environment	Distribution of radioactive materials on agricultural products, which leads to a decrease in its quality or makes it unsuitable for use
Environmental and economic	The use of environmentally hazardous technologies in the production of agricultural products	Decreasing the quality and competitiveness of agricultural products

*Source: compiled according to data [1].*

The basis of the sustainable development of agriculture is the ability of agricultural formations to resist short-term destructive actions and (or) adapt to fundamental changes in the external environment due to compensatory mechanisms.

Agricultural insurance is a form of compensatory mechanism. Its advantage lies in the possibility of use in managing not only weather and climate risks, but also market personal risks, risks of the spread of diseases and pests, as well as contribute to reducing the level of financial risks.

Features of agricultural insurance are: uneven distribution of risks in space and time, coincident periods of payment of insurance premiums and advances of funds for the start of production. This requires increasing the activity of state administration bodies in the development of agrarian insurance.

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The study of the agricultural insurance system showed a tendency to increase insurance tariffs as the size of economic entities decreases. In practice, insurance rates for small businesses are higher than for large agricultural producers. First of all, this is due to the fact that the loss of harvest even from a small area of crops causes an insurance event. In addition, the resources of small farms are limited, which affects the observance of agricultural technologies, the availability of the necessary agricultural machinery, as well as the involvement of professional agronomists and specialized specialists [Yarmolenko, V., et al. 2019].

An important component of the market is insurance related to agricultural producer financing programs, which accounts for approximately one third of all contracts concluded on the market and 22.9% of all insured areas. The terms of insurance under these contracts are slightly different from those that apply on average in the market. In particular, the average premium rate under these contracts is 3.8%. Accordingly, the share of contracts concluded through the Agrarian Fund and DPZKU in the total amount of collected insurance premiums is 53.9%.

Among the insurance programs offered by domestic insurers, total death and multi-risk are the most popular - 40.1% and 26.4% (table 2).

**Table 2 – Use of insurance programs by agricultural enterprises of Ukraine, 2019**

Program	Part of contracts	Part of the insured share square	Part of the insurance sum	Share of collected premiums	Share in the victim square	Part of payments
Perennial plantation	0,2%	0,1%	1,7%	0,7%	0,0%	0,0%
Complete death	11,0%	12,0%	7,9%	12,2%	0,0%	0,0%
Complete death + spring frosts	40,1%	41,9%	13,9%	14,9%	68,6%	81,7%
Others (roses)	0,1%	0,0%	0,5%	0,1%	0,0%	0,0%
Multi-risk (future insurance crop)	26,4%	21,3%	46,0%	57,7%	31,4%	18,3%
Multi-risk (crop insurance before harvesting)	1,6%	1,4%	2,7%	1,5%	0,0%	0,0%
Named risks	15,4%	11,6%	25,3%	10,8%	0,0%	0,0%
Partial and complete death + spring frosts (winter crops)	5,2%	11,7%	2,0%	2,2%	0,0%	0,0%
<b>In general</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

*Source: compiled according to data [2].*

Depending on the period for which agricultural crops are insured (winter or spring-summer season), certain insurance services are in demand. According to the

data of the analytical study of the agricultural insurance market, which was conducted by the Ministry of Agrarian Policy and Food of Ukraine, during the winter period, insurance against total death and spring frosts is in demand (73.1% of the total number of contracts), insurance against total death is in second place (20% of the total number of contracts) and insurance against partial and total death and spring frosts (6.5% of contracts). In the spring-summer season, the largest share of contracts consists of future crop insurance contracts against many risks (57.7% of the total number) and insurance against named risks 34.2%, other types of insurance occupy no more than 4 percent of the share of contracts.

As for combined insurance, it is only beginning to be in demand among consumers.

Thus, despite the fact that agricultural insurance is the most important method of reducing losses from climate change and despite the significant need for such protection, only the first steps have been taken in Ukraine to develop it.

Today, Ukraine does not have a sufficient basis for the use of various types of insurance products, therefore, the most common for combating the consequences of climate change on the domestic insurance market are classical insurance products (ie, insurance against individual risks). As a result, there is a need to form a balanced model of agricultural risk insurance, which should include: improvement of risk assessment methodology; formed normative and legal basis of agricultural insurance activity; a wide range of insurance products that can be applied to various business entities (large and small farmers); formation of a multi-level structure of types and forms of insurance; Ukraine is included in the list of world leaders in the production of agricultural products, and occupies a leading position in the cultivation of many crops - wheat, sunflower, barley, corn. At the same time, we do not have an effective national agricultural risk insurance system that would provide the necessary protection to both farmers and state investments. The agricultural insurance market covers about 5% of domestic agricultural producers, while in developed countries this figure exceeds 60%, and in some it even reaches 100% (Cyprus, Israel).

This level of domestic agricultural insurance is unacceptable for a country that is able to feed, if not the entire world, then at least a significant part of it. Ukraine is constantly increasing the volume of production of agricultural products, for example, last year a record grain harvest was collected - 63 million tons, and currently, despite all the difficulties of political and economic life, it is expected to surpass this result. But this in no way affects the increase in the volume of insurance in this area, which is caused by the too high cost of insurance protection for farmers.

Let's give a simple example: to sow 1 ha of winter wheat, you need to spend 2500 hryvnias, but to insure it, you have to spend another 90-150 hryvnias. In addition, each region has its own tariffs and this circumstance must also be taken into account. In favor of insurance, the fact that when the vegetation resumes in the spring in the event of a loss of 50% or more of crops, the insurance payout will range from UAH 1,750 to UAH 2,000. Insurance compensation is considerable, but not all producers of agricultural products manage to get it and not always, because insurers delay the return of these payments or find numerous reasons not to do it at all.

Insurance companies can be understood, because they have their own business interest, but state bodies often correct the behavior of agricultural producers, when district agricultural administrations often "give" farmers which insurance companies to enter into business relations with, and which to refuse.

The second important player in the agricultural insurance market is himself. For a long time, the Ukrainian agricultural insurance market belonged to those that are developing and worked, mostly not for the long term, but was guided by immediate profit. The main task for insurers was to maximize the collected insurance premiums, even under dumping conditions, while insurance contracts were sometimes signed without prior review, and crop inspections, according to insurance rules, were not carried out at all. It seems that the insurers did not intend to fulfill their obligations.

To a large extent, the transition to civilized rules of the game is connected with the arrival of insurance companies with foreign capital on the Ukrainian agricultural insurance market. They brought with them a different culture of agricultural insurance,

which does not involve quick money, but constant work with clients who are offered high-quality services at market prices, and contract agreements are actually fulfilled.

Insurance companies with foreign capital pay great attention to the formation of a stable insurance portfolio by establishing long-term relationships with clients, because cash receipts and prospects for further work depend on this. In the table 3. the results of the activities of the main insurers engaged in the insurance of agricultural products in 2019 are given.

**Table 3 – The main indicators of the work of insurance companies for voluntary insurance of agricultural products, 2019**

<b>Insurance Company</b>	<b>Insurance premiums, thousand UAH</b>	<b>Insurance payments, thousand UAH</b>	<b>Payout rate, %</b>
1. «PZU Ukraine»	98 376	51 689	52,54
2. «ARX»	43 984	27 875	63,38
3. Insurance company «Etalon»	30 132	2 108	7,00
4. Insurance company «UAIC ASKA»	19 778	1 636	8,27
5. AIC «INGO Ukraine»	12 376	23 717	191,64
6. «Universalna»	7 837	55	0,70
7. «Brokbisnes»	4 532	–	–
8. «Inter-Plius»	1 771	–	–
9. «Ukrainska pozhezhno-strakhova kompaniia»	1 694	149	8,81
10. «IG «TAS»	1 390	138	9,93

*Source: compiled according to data [2].*

At the same time, not a single insurance company from the group of classics of domestic agricultural insurance entered the Agrarian insurance pool. Although it was assumed that they will form the basis of this public association of insurers and will significantly influence the formation of the principles of its activity. In 2021, the provision regarding the insurance of agricultural products through the Agricultural Insurance Pool was abolished at the legislative level.

The beginning of the formation of a new ideology of agricultural insurance should be based not on who and how many hectares were insured, but on who and how serves agricultural producers. Simply put, we must implement the modern culture of agricultural insurance, which has already been tested by agriculturally developed countries. The necessary toolkit, which makes it possible to significantly increase the level of agricultural insurance culture, was offered by the IFC Project "Development of agricultural insurance in Ukraine", which ended in 2018. First of all, we are talking about a thirty-year crop yield database, which cannot be dispensed with when calculating tariff rates rates, about standard insurance products developed for 11 field crops, about the accident commissioners certification program, about the web platform used for concluding and maintaining insurance contracts, about legislative developments [Velychko, A., et al. 2020].

Technological innovations can significantly reduce costs in agricultural insurance. From this point of view, it is difficult to disagree with the following opinion. "Technological innovations, such as satellite weather monitoring and computer models for early warning of hazards, are significantly reducing agricultural insurance costs. These parametric tools, in addition to the spread of technological innovations, significantly reduce, and sometimes completely eliminate traditional problems". Indeed, technological innovations in agricultural insurance reduce the traditional problems arising in the field, including the costs of solving issues brought to the legal level, additional costs due to the elimination of selection errors, and so on.

Indicators used in the process of implementing agricultural insurance innovations can be distinguished as groups related to weather conditions and productivity. As one of the areas of development of state-supported insurance

instruments for small businesses, the improvement of the mechanism of using indices related to weather conditions is of particular importance.

The following position deserves attention: "In indexed insurance, there is no direct assessment of the actual loss of a specific farm, and the amount of insurance compensation is determined according to a predetermined model. Advantages: it allows to significantly simplify the conclusion of the insurance contract and settlement of losses [Rubtsova, N., Radchenko, N., Trusova, N., et al. 2021].

One of the factors preventing the wide spread of index insurance is the large volume of preparatory work associated with the formation and processing of data on the state of crops. With index insurance against the weather factor, there may be subjectivity in the quantitative expression of the indicator provided for in the contract. This is a serious drawback, because in this type of agricultural insurance, the loss of the agricultural producer is estimated according to this indicator. With this approach, some of the real signs of damage may go unnoticed.

In general, the following position can be considered acceptable with some conditions. Weather-related insurance not only helps to minimize the high risks of producers and agricultural economic agents, but also reduces the costs of the government to help victims of natural disasters.

Today, the state does not have a sufficient resource base that could be used for the formation and control of a transparent, stably functioning agricultural insurance system - there is a lack of funding and human resources. The state faces a number of important tasks, some of which can be implemented by implementing a high-quality agricultural insurance system. Having built a stable and transparent system of partnership between the private sector and the state, it is possible, first of all, in the event of catastrophic natural disasters, to protect farms from bankruptcy, protect them from non-payment to creditors, prevent sharp jumps in the profitability of agricultural producers, and strengthen their financial stability with the help of subsidizing insurance premiums.

It is necessary to use the existing resources, to clearly establish the functions for the players of the agricultural insurance market and to carefully monitor that they are



strictly observed. These functions assume that insurers must work honestly and transparently, agricultural producers must be actively involved in agricultural insurance work and also act according to generally accepted rules, and the state must ensure the sustainable operation of agricultural insurance as a component of the system of innovative development of enterprises by all stimulating measures - legislative, financial and other .

In foreign countries, the increasing attention of public administration bodies to the development of agricultural insurance with the help of various forms is emphasized, which stimulates the need for research and the development of directions for its improvement to ensure the sustainable development of the agricultural industry.

It is necessary to improve the system of agrarian insurance on the basis of accelerating the formation of the regulatory and legal framework; increasing the interest of both agricultural producers and private insurance companies in the insurance of subsidies provided by the state to insurance companies, thanks to the partnership of state and private units in agricultural insurance; optimization of the process of changing the specific weight of voluntary and mandatory types of agricultural insurance work in terms of implementing national food security priorities; it is necessary for insurers to be fully informed about the possibilities of counting on state assistance in the agricultural sector, and producers to be fully informed about the possibilities of concluding a contract on preferential terms .

As a direction of improving the agricultural insurance system, the issue of increasing flexibility in risk management and forming an information base at the level of necessary requirements, as well as digitalization of insurance, deserve attention. As a result of the use of digital technologies in insurance activity: the efficiency and profitability of insurance activity will increase; the convergence of mutual and commercial insurance will continue; insurance relations will be socialized; new insurance services and products will appear; the labor market of the insurance industry will change.

The basis of the sustainable development of agriculture is the ability of agricultural formations to resist short-term destructive actions or to adapt to radical

changes in the external environment. A necessary condition for the transition to it is the formation of compensatory mechanisms aimed at leveling the negative effects of the internal and (or) external environment on agricultural activity.

Agricultural insurance prevents high fluctuations in monetary income of agricultural producers, contributes to the continuity of the reproductive process in agriculture and the national economy. It can be used to manage not only weather and climate risks, but also market, personal, disease and pest risks, and help reduce financial risks.

In the ten largest countries in terms of the volume of premiums collected in the segment of agricultural insurance, the high level of insured acreage, active forms of participation in the development of agricultural insurance by public administration bodies, the presence of state reinsurance, and various forms of ensuring the economic availability of insurance products are emphasized. Identified trends, namely: growth in the volume of state financing of agricultural insurance programs (through subsidizing insurance premiums), increase in the number of initiatives in the development of national agricultural insurance systems, increased competition of large reinsurance organizations for agricultural insurance markets in developed and developing countries.

The National Bank of Ukraine, as part of the implementation of government programs for improving state support for farmers in 2021, took the first step to launch the agricultural insurance system. Thus, the regulator approved the requirements for the admission of insurers to the activity of insurance of agricultural products with state support.

The result of the cooperation of the National Bank, the Ministry of Agrarian Policy and Food of Ukraine, participants of the agrarian and insurance markets was the Law of Ukraine "On the peculiarities of insurance of agricultural products with state support". The document, in particular, significantly updated the approaches to the system of agricultural insurance with state support, which became part of the system of support for farmers, which consists of lending, insurance, compensation for losses from damage to agricultural crops as a result of man-made and natural emergencies,

promotion of the development of animal husbandry and processing of agricultural products.

The implementation of the provisions of this Law involves a number of joint measures for the development and adoption of legislative and regulatory acts aimed at launching the agricultural insurance system. The requirements for the admission of insurers to the activity of insurance of agricultural products with state support have been approved, the process of developing the procedure and conditions for providing state support for the insurance of agricultural products, the maximum sizes of insurance tariffs and standardized insurance products is being completed.

During the study of agrarian insurance, the tendency of state administration bodies to move from direct forms of participation in the development of agrarian insurance (directly providing insurance, developing insurance conditions, etc.) to indirect forms (subsidizing insurance premiums) was revealed. The modern stage is characterized by: widespread use of digital technologies in insurance, use of insurance products developed by foreign companies in crop production; weak accumulated informational and statistical base, insufficient attention from state administration bodies in the field of agricultural insurance development and agricultural risk management in general, signs of the problem of adverse selection, low interest in agricultural insurance by both policyholders and insurers [Herasymenko, N., et al. 2021].

A systematic approach in agricultural insurance enables the state to manage the burden on the budget, especially in catastrophic years, when many agricultural producers may suffer from the effects of natural disasters. By compensating a part of the insurance premium, the state transfers part of the risks to the private sector, which in many ways is more efficient in analyzing volumes and paying out losses. A so-called public-private partnership is emerging - where there is a clear role of the state and the private sector.

In all countries where there is a system of agricultural insurance with state support, it is expressed mainly in the form of subsidies to compensate part of the premium, which makes agricultural insurance more affordable for the agricultural

producer. At the same time, one of the foundations of agricultural insurance systems is standard insurance products that the state develops and/or approves and includes in the subsidy program. This is primarily in order to guarantee the quality of the insurance and to guarantee the receipt of payment in the event of a loss. But government support is not limited to subsidies and insurance products, it also includes educational programs to popularize agricultural insurance for agricultural producers, protect their interests, and accumulate data to improve the program or create new solutions [Zaripov, A., et al. 2020].

In the near future, it is necessary to completely reset the current rules of the game, to carefully review the existing agricultural insurance tools in order to continue using only those that provide the maximum economic effect.

To form a competitive agricultural sector of the country and improve its provision of financial resources, it is necessary to assess all risks in this area, as well as to improve the mechanism for reducing or mitigating risks. The strategic goal prompts the selection of three priority directions. The first priority is measures to improve the financing mechanism of the agricultural sector. The second priority includes measures for the development of agricultural insurance in the country.

Priority directions for improving agricultural insurance include: transformation of the institutional infrastructure of agricultural insurance, improvement of information and statistical support in the industry, adaptation of insurance products to the peculiarities of the agricultural industry, introduction of differentiated insurance tariffs. Due to the complexity of the concept of agricultural insurance and the related product development process, a single center of knowledge should be created, which would conduct educational activities for both farmers and insurance companies and control this process.

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## **DEVELOPMENT OF THE PAYMENT MARKET**

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Reliable and efficient payment systems are a guarantee of stable functioning of the banking system and the economy as a whole. Payment systems play one of the most important roles in the economy of Ukraine. They ensure that the subjects of the economy perform calculations for obligations that appear in the process of economic activity and the transfer of funds. The rational organization of the payment system contributes to the effective functioning of the financial sphere, the improvement of monetary and credit relations, and the implementation of interstate currency settlements. Effective functioning of payment systems is a crucial component for the positive development of the financial system.

A payment system is a payment organization, members of the payment system and a set of relationships that arise between them during the transfer of funds. Transferring funds is a mandatory function that a payment system must perform. The legislation of Ukraine provides for the operation of domestic and international payment systems.

The payment system of Ukraine consists of the following components: the electronic payment system of the National Bank of Ukraine; bank automation systems; intrabank payment systems; "client-bank" systems for payments between the bank's client and the bank in electronic form (Kalmykova, O., et al., 2015).

As of the beginning of 2022, 53 payment systems and settlement systems were operating, of which: 29 - created by residents: 8 - the payment organization is a bank (1 - domestic; 7 - international); 21 - the payment organization is a non-bank institution (14 - domestic; 7 - international); 15 were created by non-residents: 6 - international card payment systems and 9 - international money transfer systems; 7 - intrabank

payment systems; 2 - state payment systems. 34 operators of payment infrastructure services worked on the payment market of Ukraine (Table 1).

**Table 1 – Payment market of Ukraine (at the end of 2021)**

Number of international payment systems, including:	card	Money transfer	Number of national payment systems	non-bank	banking	intrabank	state
15	6	9	38	21	8	7	2
The number of payment systems registered in 2021, of which:							7
payment systems created by residents							3
international payment systems created by non-residents							4
The number of payment systems whose registration was canceled in 2021, of which:							
payment systems created by residents							2
international payment systems created by non-residents							2
The number of operators of payment infrastructure services							34
The number of operators of payment infrastructure services registered in 2021							4
The number of operators of payment infrastructure services whose registration was canceled in 2021							4

The payment market of Ukraine was replenished with new participants. Thus, during 2021, the National Bank registered three payment systems created by residents: the international payment system "CORDPAY"; intrastate payment system "KASKAD"; the domestic payment system "PaySystems" and four payment systems created by non-residents: the international card payment system "JCB Payment System" (Japan); international card payment system "DINERS CLUB INTERNATIONAL" (United States of America); international money transfer system

"PAYSEREA" (Lithuania); international money transfer system "TransferGo" (Great Britain).

To fulfill the tasks defined in the Strategy for the Development of the Financial Sector of Ukraine until 2025, and with the aim of implementing the Strategy of the National Bank of Ukraine until 2025, a number of measures have been taken to improve the regulation of the payment market, namely: the requirements for opening accounts for bank clients have been simplified (present e - a passport, the criteria of which support the use of the Diya mobile application, for business entities to open current accounts for the benefit of individuals with their consent to make certain types of payments, the list of documents submitted by non-resident legal entities when opening accounts has been reduced; continued updating of the regulatory framework regulating the activity of the payment market; the issue of the procedure for the execution of settlement documents of debt collectors by banks in connection with the transition of SEP and banks to work in the 23/7 mode was settled; the procedure for issuing payment cards and carrying out operations using them was modernized [2].

Updating the regulatory framework regulating the activity of the payment market is establishing the procedure for opening United Nations accounts and escrow accounts by banks for the purpose of performing notarial actions to accept the monetary amount of the debt from debtors; issuance of savings certificates instead of savings (deposit) certificates.

Modernization of the procedure for issuing payment cards and carrying out operations with their use includes expanding the possibilities of business use of corporate payment cards (electronic means of payment), namely: the business entity was given the right to independently determine the persons who have the right to use corporate payment cards issued to its account ; demarcated the responsibility of the business entity and the holder of the corporate payment card; simplified the receipt of a payment card by a trusted person - the owner of the account.

The National Bank of Ukraine is a payment organization and settlement bank for two payment systems created by it - the Electronic Payment System (ESP) and the National Payment System "Ukrainian Payment SPACE". SEP participants are legal



entities, as of January 1, 2022, their number was 71 banks of Ukraine. Work is underway to modernize the SEP by introducing the ISO 20022 international standard and transitioning this system to a 24/7 operating mode, which provides for an instant transition from the current to the next banking day without suspending the SEP for performing interbank payment transactions.

The system of mass payments in Ukraine is represented by the Ukrainian payment SPACE national system. PROSTIR is an intrastate banking multi-issuer payment system for mass payments. In the course of 2021, two banks (JSC "Bank 3/4" and JSC "BANK "UKRAINSKY CAPITAL") joined NPS "PROSTIR". At the end of 2021, the NPS "SPACE" had 56 participants. The volume of non-cash transactions using payment cards of NPS "SPACE" according to the results of 2021 has almost doubled compared to 2020.

On the way to the introduction of the instant payment system in Ukraine in 2021, work was carried out on the creation of the Concept of the instant payment system project. This work was carried out with the support of the European Union Twinning project "Strengthening the institutional and regulatory capacity of the National Bank of Ukraine for the purpose of implementing the Association Agreement between Ukraine and the EU", the World Bank and in close cooperation with representatives of the banking community. The main goal of creating a system of instant payments in Ukraine is to enable citizens of Ukraine to make fast, cheap and secure payments between accounts using convenient, modern and innovative access channels and methods of initiating payment transactions. The implementation of the system will contribute to the development of the payment infrastructure, strengthening competition in the payment market, meeting the expectations of the market and users, financial inclusion and increasing the level of cashless payments.

As part of the Twinning project "Strengthening the institutional and regulatory capacity of the National Bank of Ukraine for the purpose of implementing the Association Agreement between Ukraine and the EU", the National Bank with international experts - representatives of the member states of the European Union held an expert forum "Instant payment systems". During the forum, the participants of the

financial market of Ukraine were introduced to the vision of the National Bank regarding the system of instant payments in Ukraine, further steps and challenges on the way to its implementation. Banks, non-banking financial institutions, associations got acquainted with the European instant payment systems of Poland, Hungary, Lithuania and the instant payment solution for the SEPA Eurozone based on the SCT Inst scheme, as well as with the National Bank's work on implementing such a system in Ukraine. During the event, the National Bank received feedback from market participants for the first time. A number of working meetings were held with financial market participants and international experts to study the features and advantages of the future system of instant payments. The results of these meetings became the basis for the creation of the project Concept of the system of instant payments in Ukraine.

Payment instruments such as payment cards, smart cards and electronic money already occupy a significant segment of the market today. A special payment instrument (payment card) is a payment instrument that performs the function of a means of identification, with the help of which the holder of this instrument initiates the transfer of money from the relevant account of the payer or bank, and also carries out other operations stipulated by the relevant contract. With the help of special means of payment, documents are formed for operations using special means of payment or other services are provided to holders of special means of payment (Legkostup, I., et al., 2019).

The list of banking operations and mechanisms for cash and non-cash payments using payment cards in international and national payment card systems includes many elements: self-service bank machine (ATM), acquiring, issue of special means of payment (issue), issuer of special means of payment (issuer), imprinter, corporate special payment tool, mobile payment tool, payment card, payment scheme, payment application, payment tool, payment terminal, processing, special payment tool.

The principles of functioning of electronic means of payment in Ukraine are as follows: an electronic means of payment can exist in any form, on any medium; issuance of electronic means of payment within Ukraine is carried out exclusively by banks that have concluded an agreement with the payment organization of the

corresponding payment system; the payment organization of the corresponding payment system determines the type of electronic payment instrument issued by the bank; to initiate a transfer in Ukraine, electronic payment means of both domestic and international payment systems can be used in accordance with the procedure established by the National Bank of Ukraine (Mishchenko, V., et al., 2016).

As of the end of 2021, the number of cards issued by Ukrainian banks was 89.1 million, which is 21.3% more than at the end of the previous year. The number of contactless payment cards used for transactions grew, their number increased by 51.8% and amounted to 20.0 million pieces. cards In general, about half (43.2%) of the payment cards used for spending transactions are contactless cards. 2021 was the year of further digital transformation of the financial system. The number and volumes of non-cash payments using payment cards continue to grow steadily. The number of transactions using payment cards issued by banks of Ukraine reached 7,817.1 million, and their sum amounted to UAH 5,091.7 billion. The share of non-cash payments in Ukraine using payment cards increased to almost 61% by the end of 2021 from 56% at the beginning of the year. The number of contactless payment cards used for transactions grew, their number increased by 51.8% compared to the previous year.

The largest number of payment cards is issued in the international payment system MasterCard (50.7 million cards, or 56.9%). The second and third places in terms of the number of issued payment cards are occupied by the VISA international payment system (37.8 million units, or 42.4%) and the National Payment System "Ukrainian Payment Space" (0.6 million units, or 0.64%). ). The share of other card systems operating on the territory of Ukraine was 0.04%. The leaders in card issuance are PrivatBank JSC (45.1% of all issued cards), Oschadbank JSC (16.6%) and Universal Bank JSC (10.6%).

Throughout 2021, the volume of transactions (non-cash and cash receipts) using payment cards continued to increase. Thus, the number of transactions using payment cards issued by banks of Ukraine reached 7,817.1 million, and their sum amounted to UAH 5,091.7 billion. This is almost a third more than in the previous year. The number of non-cash transactions using payment cards increased by 35.1% (90.1% of the total

number), and the amount - by 40.3% (60.9% of the total amount of card transactions). At the same time, the number of cash withdrawal transactions using payment cards decreased by 1.1%, and the amount of such transactions increased by 14.0% [2].

In May 2022, the number of non-cash transactions and cash receipts using payment cards issued by Ukrainian banks in Ukraine and abroad was 637 million, and their sum was 573.7 billion UAH. If compared with pre-war January 2022, the number of transactions decreased insignificantly (by 3.4%), while their amount increased by almost a third (by 31.5%). According to the results of May 2022, the total number of issued payment cards in Ukraine reached 103.6 million. This is 13% more compared to pre-war January 2022.

The infrastructure for non-cash operations is also steadily expanding. The number of payment terminals increased by 13.7% to 426.5 thousand, of which 393.6 thousand. (92.3%) – contactless terminals. The number of payment terminals has almost doubled over the past five years from 232,100 units. up to 426.5 thousand pcs.

The existing infrastructure development still does not sufficiently ensure the proper level of payment card usage and the reduction of cash payments. The number of payment terminals per 1 million people in Ukraine increased to 10.7 thousand units, which is almost 3 times lower than the average European level. The largest number of payment terminals is in PrivatBank JSC (57.2% of all payment terminals), Oschadbank JSC (18.7%) and Raiffeisen Bank JSC (9.0%).

Cashless transactions carried out by cardholders in 2021 were 70% and cash 30%, while in 2012 cashless transactions were 17% and cash 83%, the number of cashless transactions has increased significantly, which is definitely positive, so cardholders began to use payment cards more actively when paying for goods and services, which contributes to the development of the Ukrainian market of non-cash payments.

A payment card is a tool for non-cash payments. Non-cash payments are a strategic direction of the development of the banking system. Increasing the volume of non-cash payments will contribute to the strengthening of the financial system and economic development of the country. After all, about UAH 220 billion. cash is in

circulation, in addition, the population, according to various estimates, has accumulated from 40 to 70 billion US dollars. These funds can be involved in the economy and will work for its growth (Levytska T., 2018).

A necessary condition for the spread of the use of payment cards in Ukraine is the domestic market's mastery of global innovations in this field. In difficult crisis conditions, domestic banks are betting mainly not on the quantitative distribution of payment cards in circulation, but on improving the qualitative component of their use to increase the number of transactions with already issued cards.

In 2021, banks issued electronic money, such as "Maxi" (JSC "TASCOMBANK"); "GlobalMoney" (JSC "BANK ALLIANCE"); "ELECTRUM" (JSC "UKRGASBANK"); "ALFA-MONEY" (JSC "ALFA-BANK"); MasterCard (VOSTOK BANK PJSC, ALFA-BANK PJSC, TASKOMBANK JSC, OSHCHADBANK JSC); Visa (Oshchadbank JSC, INDUSTRIALBANK JSC, CONCORD JSC JSC, MEGABANK JSC, RAIFFEISEN BANK JSC); "PROSTIR" (JSC "UKRGAZBANK", JSC "BANK VOSTOK"). Compared to 2020, issuing banks reduced the volume of transactions with electronic money by almost half, from UAH 19,304 million to UAH 10,163 million; the number of electronic wallets increased by 3.5 times - from 79 million pcs. up to 23 million units; the volume of issued electronic money increased 1.6 times - from UAH 60 million to UAH 37.3 million [2].

The decrease in the volume of transactions with electronic money is caused by a decrease in market participants. This is due to the introduction of requirements regarding the obligation of the issuer to carry out proper verification of users of electronic money in accordance with the requirements of the Law of Ukraine "On prevention and countermeasures against legalization of proceeds obtained through crime, financing of terrorism and financing of the proliferation of weapons of mass destruction" and normative legal acts of the National bank, adopted to fulfill the requirements of the specified law.

As of January 1, 2022, banks of Ukraine served 72.2 million clients, in particular: economic entities - 2.9 million clients (4%), of which 1.8 million clients are private enterprises; natural persons – 69.3 million customers (96%); budgetary institutions -

0.005 million clients (0.01%). 142 million accounts have been opened for bank clients. 5.6 million accounts have been opened for business entities. Almost all of them (5.6 million) are current accounts and only a small part (0.07 million) are savings accounts. More than 2.3 million business entities are serviced remotely (79%), which enables bank clients to quickly monitor account balances and make payment transactions on these accounts.

An increase in the number of bank clients in 2021 was observed by 13%, business entities – by 6%, individuals – by 13%, budgetary institutions decreased by 5%; increase in the number of open accounts by 14%, business entities – by 7%, individuals – by 14%; escrow accounts were used more often, by 82%: by business entities - by 143%, as of 01.01.2022, 1,058 accounts were opened, by individuals - by 2%, 336 accounts; increase in the number of clients served remotely: among business entities - by 3%, among individuals - by 6%.

The National Bank's efforts aimed at implementing the Second European Payment Directive and updating the legislative regulation of the payment services market have achieved their goal thanks to the adoption by the Verkhovna Rada of Ukraine of the Law of Ukraine dated June 30, 2021 "On Payment Services". The law entered into force on August 1, 2022. This law will contribute to the transformation of the payment market and the expansion of the circle of its participants. The Law of Ukraine "On Payment Services" defines nine categories of providers of financial payment services. In addition to banks, they include payment institutions, postal operators, electronic money institutions, branches of foreign payment institutions, state authorities and local governments. The Law of Ukraine "On Payment Services" also enables non-banking financial institutions that have received the appropriate authorization from the regulator to open payment accounts for the following services: crediting cash to user accounts, withdrawing cash, and performing payment operations with the user's own funds.

The Law of Ukraine "On Payment Services" provides for the creation of open banking in 2025. In addition, the Law of Ukraine "On Payment Services" provides for the right of the central bank to issue digital money of the National Bank. The main

advantage of the new regulation of the payment market is that fintech companies will be able to establish mutually beneficial cooperation with banks and get more opportunities for business development.

Modern life encourages legal entities and individuals to adapt to the use of electronic payments. The latest events related to military actions in the country and the related active campaign of the banking system to support online operations contributed to the growth of the volume of non-cash payments (Shilvinska O., et al., 2021).

In the conditions of war, Ukrainians continue to prefer cashless operations with payment cards. Thus, in May 2022, the share of non-cash transactions using payment cards amounted to almost 69% of the total volume of transactions with payment cards (in January 2022, this figure was 63%, in 2020 – 86%). At the same time, the share by quantity remained almost unchanged - 92% (as of January 2022 - 91%). That is, 92 out of 100 card transactions were cashless.

In general, the war led to the transition to contactless payments, the increase in the penetration of electronic wallets and the wider use of automation of B2B, P2P, A2A payments. Renunciation of cash has been in the plans of the NBU and the Ministry of Finance for many years, but the war gave a powerful impetus to this process.

Despite the reduction in the total number of contactless and tokenized payment cards (by 6% and 15%, respectively), their popularity among Ukrainians is very high. The total share of contactless and tokenized payment cards among all active cards is 60%. In general, today approximately every sixth active payment card is tokenized (at the beginning of 2022 – approximately every seventh); contactless - approximately every second, as at the beginning of January [7].

Contactless and tokenized cards are innovative technologies. The technologies are similar, but also different from each other. The main difference that will be clear to the user is that the tokenized card does not need to be carried. It is enough to digitize it in the payment application and have a payment tool (smartphone, watch, ring, etc.) with the NFC function. At the same time, you will still have to allocate space in your wallet for a contactless card. So today, more than a quarter of active payment cards are contactless and tokenized cards (26.5% or 11.2 million cards).

The convenience of non-cash payments allows you to use banking services around the clock and make payments remotely not only with a payment card, but also with a smartphone, paying for goods and services without necessarily visiting a bank branch. Payment for goods and services on the Internet in May 2022 accounted for slightly more than a quarter in terms of quantity (27%) and a sixth in terms of amount (16.2%) of all non-cash transactions with payment cards, that is almost UAH 64 billion. The volume of transactions using non-cash payments in 2021 amounted to almost UAH 1.1 trillion, which is 18.3% more than in 2020. There are 41 million people in Ukraine, of which 24 million are aged 16 to 59. Since the popularity of non-cash payments is more characteristic of the young population, such statistics show that only about 50% of Ukrainians use non-cash payments (Bitner I., et al., 2022).

In Ukraine, there is still a significant "gap" between the older generation and the youth, urban and rural residents in the use of digital technologies, 53% of the population aged 17 to 70 have "below average" digital skills, and 15% of the population do not have digital skills. Achieving progress in the transition to cashless payments is also hindered by the insufficient level of Internet coverage, especially in rural areas [9].

The trends of recent years indicate a significant increase in both the number and volume of transactions using cashless payments, which are convenient, fast and safe today, which leads to their spread. The development of cashless payments is influenced by the ease of use of payment means, although it requires knowledge of the technology of their use, and the convenience of payments on the Internet forces buyers and sellers to make a choice in favor of using a cashless payment system.

Necessary measures that will stimulate the cashless market include improving the protection of payment cards against fraud, increasing financial literacy in order to inform not only about the possibilities of using payment cards, but also about the advantages of cashless payments, ensuring the development of payment infrastructure.

The latest trends are capable of significantly modernizing the regulation of the Ukrainian payment market. New legislative trends will create conditions for the further development of payment products, services and services, which will become the basis



for the introduction of "open banking" in the payment infrastructure of Ukraine. Fintech companies will be able to establish mutually beneficial cooperation with banks and get more opportunities for business. The market of payment services will become more competitive, as a result consumers will be able to receive competitive and higher quality payment services.

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## **P2P MECHANISMS TO FINANCE THE DEVELOPMENTAL NEEDS OF COMMERCIAL ENTITIES**

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The possibility of its existence in a long-term perspective depends on the successful solution of the task to ensure the growth and development of the business entity. As for development, there are different dimensions of it. Such measures may include the value of own capital, sales volume, profit value, etc. But ensuring development requires costs. Also, its innovative character should be observed. After all, the innovative nature of development creates competitive advantages and distinguishes one brand from another.

At the same time, financing development needs can be carried out both at the expense of own and the attracted sources. Using only your sources significantly limits development opportunities. And excessive use of the attracted financing threatens to lose control over the enterprise. Therefore, in practice, they often combine their own and involved sources of financing. This helps to balance financing needs and risks. Moreover, it is easier to attract external financing when the owners or managers of financial resources understand that nominal owners of businesses also participate in the financing. It should also be noted that the financiers may have their own

requirements for the leverage level, which limit their ability to finance innovative projects.

Regarding sectors, institutional funding is widely available to entrepreneurs. Companies which carry it out are the financial intermediaries, mainly - banks. But this sector also includes various investment and financial companies that are more willing to accept risks. It is necessary to consider that the payment for this can become a complete loss of control over the enterprise. Another option is to search for private financiers. These can be both potential investors and potential creditors. By its potential, this sector could successfully compete with the segment of foreign investments.

The following figures evidence this. According to NBU data (NBU, 2022), in 2021, Ukraine received foreign direct investments amounting to USD 6,7 billion. Of these, almost USD 2,4 billion are of Ukrainian origin, but it has been transferred through foreign jurisdictions. So we have a figure of USD 4,3 billion, which is the net result of attracting foreign investments into the economy of Ukraine. Let's compare it with the volume of private foreign transfers to Ukraine, which for the same period amounted to \$14,0 billion (according to the same data). The conclusion will not be in favour of foreign investors.

Moreover, such a high level of funds of Ukrainian origin in the total volume of foreign investments (more than one-third) testifies to discriminatory policy, which the government carries out with local investors. Preferences granted to foreign investors exceed the costs of registration and administration of legal entities in foreign jurisdictions for powerful companies with activities in Ukraine as their income source. However, suppose the representatives of the highest authorities consider taxpayers to be a goose, which should be plucked alive (Channel 5, 2022). In that case, there is no surprise in that Ukrainian entrepreneurs are trying to evacuate their capital from such a toxic environment and reduce business risks.

Another vital factor to consider is the consequences of hostile actions by the Russian Federation. As a result of acts of genocide, terrorist attacks on civilian objects and armed actions caused significant damage to human capital, transport and energy

infrastructure, and other components of production potential. According to different estimates, the damage as of September 2022 is estimated from \$350 billion to \$750 billion (Shevchuk, 2022). The recovery requires considerable financial resources, and the issue of temporarily mobilizing free resources from the private sector and households are becoming more urgent. Moreover, the private sector and entrepreneurs are the engine of social and economic development.

Various aspects of the practical implementation of the P2P mechanisms have their implementation in the studies of the impact of digitalization on access to finance (Bollaert et al., 2021), the impact of financial technologies on sustainable development (Deng et al., 2019), problems and risks associated with the P2P lending (Suryono et al., 2019).

The idea behind moving financial relations into the P2P dimension is to provide business representatives with access to the financial resources of the private sector and households without financial intermediaries. At the same time, new dimensions of financial markets are formed - the micro-investment market and the microcredit market, where creditors are also operating at the micro level, not just like borrowers. Such an approach is fundamentally different from the existing concepts of microcredits, where only borrowers are micro-level. This complements the system and allows the formation of a holistic microfinance market with as much freedom in capital movement as possible in the existing legal environment. The infrastructure of the P2P financial market is built on an innovative basis with the wide use of information technologies and approaches of decentralized finance.

Governance and risk management are important issues that have to be addressed efficiently. If financial intermediaries are involved in financing schemes, they assume risk management and administration functions. In traditional financing, it is not possible to solve these issues in an effective way. Therefore, the P2P approach to finance has not spread widely. At the same time, the private sector has developed funding based on a centralized approach. The infrastructure for it was created by banks, investment and financial companies, credit unions, and other financial intermediaries. A vital element of this infrastructure is the credit bureaus. However, for specific

reasons, access to information gathered by such bureaus is not public. Also, sources of information for estimating credit ratings are provided by financial intermediaries working on centralized principles. This is not a problem for the corporate sector. But for the P2P finance this will not work.

In order to form and successfully develop financial instruments in the P2P format, it is necessary to provide an acceptable level of risk for all market participants, who will provide their financial resources for investment and borrowing. An efficient way to solve this problem may be to allocate the information and analytical direction of work on financial markets and set up particular specialized services. Another critical step in this direction will be the development of loan instruments based on collateral and guarantees. Taking into account the absence of an effective judicial system (BBC, 2022) and a toxic environment for entrepreneurship in general, the practical solution will be to move the relationship into a digital dimension, where the rights of the owner are realized at the technological level, and the information about each financial transaction is open. This simplifies decision-making and excludes corrupt officials.

Through the help of P2P mechanisms, the owners of financial resources get the possibility of direct placement without the participation of banks and other financial intermediaries. The same possibility is obtained by private sector entities (including private individuals and households) that need financing. The infrastructure of P2P financing is based on modern financial technologies. And, in particular, cryptocurrency transactions, smart contracts, and decentralized finance. This not only allows financial intermediaries to be excluded from the financial resource distribution chain but also makes it easier for the private sector to access global financial resources. Such actions will compensate for the consequences of the failed policy on attracting foreign investment and become especially relevant because of the expected rapid growth of the need to finance renewal and innovation development programs in the post-war recovery period.

The critical element of the P2P funding mechanisms is the mutual trust of the transaction participants. And taking into account the long-term nature of the relations formed in the financing process, it is necessary to identify their participants and check

their reputation. This applies both to those who place financial resources and those who attract them. The most obvious risks arising from the absence of identification and proper verification will be the risk involved in doubtful financial transactions (money laundering, financing terrorism, etc.) for those who attract funding. For the person who places the financial resources, it will bring, first of all, the risk of getting on fraudsters and losing money. The solution to this problem is possible through the development of digital services, which will confirm the identity and reputation of the person, including - legal entities. In Ukraine, there is considerable progress in the digital identification of individuals. This experience can be successfully used for legal entities as well.

Thus, P2P funding allows simplified access to financial resources and thus promotes innovative development. But the development of financial P2P technologies carries new challenges. These are, in particular, threats related to open access to financial information, at least in part of the credit rating. Therefore, a methodology for estimating such a rating is needed. And such methodology has to ensure a smooth process without disclosure of personal financial information. The solution to the issue of the development of smart contracts, which would ensure automatic fulfilment of conditions of allocation and attraction of financial resources, is also required. At the same time, the terms of such smart contracts should be harmonized with the requirements of the current legislation. As for the solution to legal issues, the correct approach is considered to use the imperative: "Allowed is all that is not prohibited by law". This will allow the participants of the P2P relations to be taken out of the risk zone in aspects that are not regulated clearly at the legislative level and remove grounds for corruption abuses.

The direction of further scientific research is substantiating a comprehensive strategy for developing P2P financing, its decomposition to the level of particular digital services and practical recommendations on their organization.

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# **CHAPTER 4. ANALYTICAL SUPPORT FOR INNOVATIVE DEVELOPMENT OF BUSINESS ENTITIES**

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## **METHODOLOGICAL APPROACHES TO THE ASSESSMENT OF INNOVATIVE BUSINESS DEVELOPMENT**

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The continuation of military actions on the territory of Ukraine, further destruction of production facilities, infrastructure and residential buildings, as well as uncertainty about the duration of such a situation will hinder further development of the country's economy and lead to the delay of its active recovery.

At the same time, according to a Mastercard survey, more than 60% of Ukrainian entrepreneurs, despite the fever, continue their activity. More than 90% of those who were forced to stop the work in the country are ready to resume it. Their role in strengthening Ukraine's economy during the war is difficult to overestimate [1].

The survival of any enterprise, in the present conditions, is largely determined by its innovative activity.



Thus, according to the survey conducted by the Center for Innovations Development, the office for business and export development, the national project, 38,9% of the total number of entrepreneurs surveyed plan to develop and compete through technological innovations, and 20,9% using business innovations [1].

Today, innovation is the most effective means of technological recovery and development of enterprises, ensuring strong market positions based on significant competitive advantages. The success of the recovery of the economy, taking into account innovations, directly depends on the innovative activity of the business.

Significant are the results of studies of modern problems related to the innovative development of subjects of entrepreneurial activity by scientists such as V.V. Avilova, I.V. Afonin, A.D. Bobryshev, V.V. Burlakov, Yu.A. Doroshenko, O.V. Zheltenkov, O.P. Ivanova, A.E. Karlyk, G.L. Kostina, E.M. Ozhiganov, I.V. Rozdilska, L.T. Snitko, I.V. Somina, M.S. Starikova, V.M. Tumin, O.M. Chizhova, O.D. Shchetynin and others.

Unfortunately, most research is quite limited in nature. In the theoretical aspect, the problem of the development of innovative activity at the level of business entities has not been worked out sufficiently.

The problem today is the choice of methods for evaluating innovative development. As you know, the essence of the system for evaluating the effectiveness of innovative activity is to create the prerequisites and conditions for effective management of business development. Here, too, the presence of an informational and analytical base and appropriate methodological recommendations for making innovatively oriented management decisions play an important role.

The basis of such an information and analytical base should be a system of analytical indicators capable of providing an objective assessment of the real state of the innovative activity of the business entity under study.

At the same time, both industry-specific features of innovation processes, as well as the type of activity and stages of the enterprise's life cycle, should be taken into account. Information about the availability and efficiency of the use of resources of the economic entity involved in innovative activities is important.

To date, in our opinion, not enough attention has been paid to the problem of evaluating the innovative development of business entities. These questions were considered in the works of I.M. Dubinoy, O.V. Ermakova, E.E. Yermakova, Yu.I. Seliverstova, I.A. Slabinska, I.L. Tukkel, Yu.V. Yakovets et al.

Summarizing the information presented in the studied literary sources, the following should be noted.

As a result of the study of the theoretical foundations of innovative activity of the organization, it was established that the main categories of innovative activity are "innovation" and "innovation". These two concepts are similar, but not identical.

Yes, any innovation can be classified as an innovation, but not every innovation is an innovation. An innovation has a specific feature of change: the presence of a basic object, the change of which leads to the appearance of another, qualitatively new [2]. It becomes an innovation only after successful implementation and obtaining innovative value. A feature of innovation is the provision of additional value and benefit to society. [3].

In modern economic literature, both domestic and foreign, the interpretation of the concept of "innovation" is the subject of scientific discussions. Currently, there are two approaches to defining the concept of "innovation": process, according to which innovation is considered as a process, and object, where innovation denotes some object in the form of a final result [4].

Speaking about the interpretation of the concept of "innovative activity", it should be noted that the essence of this concept as an independent one is not disclosed by economists at all. If this definition is given, then it is related to the concept of "innovation" - either "innovation is a consequence of innovative activity" [5], or "innovative activity is an interconnected set of types of work on the creation and dissemination of innovations" [5].

At the same time, defining the essence of innovative activity is an important point. After all, the creation of innovations is the result of innovative activity as a process.

Summarizing what has been said, we suggest interpreting innovative activity as a process of developing new methods and technologies, followed by their use, which ensure a new level of satisfaction of public needs.

Then the innovation itself should be considered as the result of innovative activity in the form of a new product or service.

A deeper look at the essence of the specified categories will allow their classification, according to certain classification features.

H. Mensha is rightly recognized as the founder of the classification of innovations. According to his classification, all innovations can be grouped into three groups:

- a) basic,
- b) those that improve,
- c) pseudo innovation.

At the same time, he singled out one criterion for such a grouping - the degree of radical innovation [6].

Other researchers, although more extended classifications are proposed, distinguishing, on average, from 5 to 7 classification features, but they are based on H. Mensch's typology. At the same time, due to the fact that researchers do not consider the types of innovative activity separately, the classification features of innovations are often combined, and sometimes duplicate the criteria of innovative activity.

We support the opinion of those scientists who propose to build a classification based on the division of the concepts "innovation" and "innovation activity" [6].

The study of the essence of innovative activity showed that its subjects can be both large enterprises and small and medium-sized businesses. In addition, this activity can be regulated both at the level of the territory and at the level of the industry. The sources of innovation financing are also different.

Thus, the criteria for assigning to one or another group of types of innovative activity should be those that characterize the very process of creation and commercialization of innovations. Namely - the field of activity of the enterprise; stages of its life cycle; sources and entities of financing.

Whereas for the classification of innovations, we consider more appropriate the criteria characterizing them precisely as the result of innovative activity. Such as - type of product; the purpose for which this product or service is created; duration of use; risk level.

The analysis of the terms "innovation", "innovative activity", consideration of classifications of innovations and types of innovative activity showed that one of the problems of this direction of research is the justification and selection of methods for evaluating innovative activity.

It should be noted that in modern conditions of economic development in the field of business there is a problem of insufficiently developed comprehensive approaches to evaluating the effectiveness of innovations. At the same time, it enables the business entity to take leading market positions both in the domestic market and at the international level.

In order to achieve its goal, the evaluation of the innovative activity of the enterprise should cover the exploitation of the introduced innovations as much as possible.

We believe that such an assessment should be allocated to a separate research direction. This will ensure not only the timely identification of problems in the implementation of innovative activities of the enterprise, but also will allow to eliminate them qualitatively.

We believe that the goals of evaluating the enterprise's innovative activity are mutually determined by the goals of the business entity's environment. The goals of counterparties, competitors, investors and authorities.

Taking into account this relationship during the assessment, it is possible to identify all factors that determine the effectiveness of innovative activity - both internal and external.

The conducted research showed that today, as in the case of the conceptual apparatus, there is no single approach to the assessment of innovative activity.

For example, R.A. Fathutdinov, singles out economic, ecological, scientific and technical and social effects. Highlighting as the main one - obtaining an economic

effect in which the enterprise increases the level of development of innovative activity, he attributes only a potential form to other types of effects [7].

Such researchers as S.D. Illenkova, L.M. Gohberg, S.Yu. Yagudin formulated the following effects: economic, scientific and technical, financial, resource, ecological and social. At the same time, all of them are attributed an equal effect [8].

G.Z. Susha [9] suggests using two economic approaches in carrying out the assessment. The first approach is presented in the form of such economic indicators as growth rates of manufactured products; economy of resources; profitability of the enterprise.

According to the second approach, the evaluation of the enterprise's innovative activity is characterized by an increase in the value of the enterprise.

Summarizing the above approaches, the following can be noted: firstly, the effects under consideration are not measured in the same quantities; and secondly, any combination of them needs to be quantified.

Assessment, being a tool for development and adoption of scientifically based management decisions, contributes both to the development of the enterprise itself and allows to identify possible prospects for its innovative development.

As the research showed, in theory and practice, the economic evaluation of innovative activity is most often used, which is a development of the methodology used in evaluating the effectiveness of investment projects.

As you know, the main goal of evaluating the effectiveness of an investment project is to identify the degree of compliance of the project with the goals and interests of its participants. It is used either when choosing project options.

This technique involves the use of both absolute and relative indicators, using both classical and alternative selection criteria.

Speaking about classical methods of evaluation, it should be noted that during their application, indicators can be determined that do not take into account the time value of money. This is the so-called accounting or statistical method. And indicators that take into account the value of money over time are an economic (discounting) method.

Let's consider them in more detail in relation to the assessment of the effectiveness of investment activities.

ROI, PP, ARR indicators are calculated as a result of the accounting (static) method. These are the most used indicators. They were applied even before the concept of cash flow discounting [10]. Their main drawback is the lack of research on the time value of money.

We consider it possible, from the indicated indicators, to calculate the profitability of innovative activity to use the indicator of return on investment investments (ROI), which is calculated as the ratio of net profit for a temporary period to the amount of initial investments in innovative activity (1):

$$ROI = \frac{P}{IC} , \quad (1)$$

where: P is the net profit in the period, IC is the initial investment.

This indicator characterizes the ratio of the effect obtained from the innovation to the costs of its implementation. Its advantage is to obtain an estimate of the sum of all effects, not just short-term profit, and to adequately evaluate projects with different scales.

However, it can only be used for calculations of short-term projects. This is due to the fact that the indicators of this group do not take into account the time value of money. Thus, it is impossible to examine the likely differences if the project is implemented at different time intervals. Thus, long-term forecasting is subjective due to the impossibility of inflation forecasting. This fact is a shortcoming of the considered research method [11].

As a result of the study, a simple investment payback period (PP) can be determined - the period from the moment of implementation and release of an innovative product on the market to the moment of payback of costs. In other words, it shows the period during which the revenues from the innovative product being introduced will pay off the funds invested in it. This indicator is calculated according to formula (2):

$$PP = \frac{IC}{CF} , \quad (2)$$

where: IC – initial investment, CF – cash flow.

Based on the calculation of this indicator, the possibility of introducing one or another innovation into production is determined. So, if the payback period turns out to be shorter than what was declared by the investors, then the innovation will be put into production, otherwise - not. In other words, in the process of choosing innovations, preference will be given to innovations with a shorter payback period [12].

The advantage of this indicator is the possibility to make an approximate assessment of investment risk with simple calculations.

At the same time, this indicator is optimal only for companies with a small cash flow, the choice of a normative payback period is subjective without taking into account the discount.

The next indicator of the method under consideration takes into account the efficiency of the invested funds, relating profit to costs - simple rate of return (ARR). A simple rate of return is a relative indicator of the effectiveness of innovative activity and shows a value equal to the ratio of the amount of cash flows to the initial amount of invested funds (3):

$$ARR = \frac{CF}{K_0}, \quad (3)$$

where: CF is the average annual cash flow from the sale of an innovative product,  $K_0$  is the initial investment.

As you can see, the considered indicators can be successfully used in the evaluation of innovative activity. Their indisputable advantage is the simplicity of calculating indicators.

With the help of the accounting method, it is possible to quickly forecast the profitability of innovative activities, taking into account the full duration of the project's life cycle. At the same time, its disadvantage is the lack of accounting for inflation, the risks associated with it, and the impossibility of distributing cash flows over time [13].

In addition, the indicators of this method do not take into account the possibility of managing innovative activities. All calculations are based on the initial assumption

that after the start of this activity, the environment in which the enterprise operates will remain unchanged.

Thus, the most expedient application of the accounting method will be in the evaluation of the innovative activity of business entities when implementing only effective and short-term innovative developments.

Based on the above, we consider it most expedient to use the economic (discount) method of evaluating the innovative activity of the enterprise in the assessment of innovative activity. It provides for the calculation of key indicators based on changes in the time value of money. The main advantages of this method are accounting for the inflation factor, the possibility of changing the interest rate, rate of return, etc. [14].

One of the indicators of this method is net discounted income (NPV), which allows you to submit the total amount of cash flows from an innovative product, taking into account time intervals. This indicator is calculated according to formula (4):

$$NPV = -CF_0 + \frac{CF_1}{1+RD} + \frac{CF_2}{(1+RD)^2} + \dots + \frac{CF_n}{(1+RD)^n}, \quad (4)$$

where: CF is the cash flow brought to a certain time interval; RD – discount rate; n is the number of time periods.

This indicator characterizes the ratio of income and expenses for the implementation of innovative activities, taking into account the time period

With a positive value of the net discounted income, the trend of the effect obtained from the introduction of the innovation is positive, and the level of its profitability is higher than the market discount rate. In addition, when adopting an innovation for implementation, the forecasting of the economic potential of the enterprise is taken into account. Otherwise, the introduced innovation is unprofitable.

In the case when the use of an innovative product did not bring additional profit, but paid off the costs associated with its development and use, the value of the net discounted income is zero.

The advantages of this indicator are the ability to estimate cost parameters during the implementation of innovative activities, taking into account the project's lifetime and the time factor. The disadvantage is the lack of an opportunity to evaluate non-



financial risks with its help. It does not allow taking into account project alternatives and requires long-term forecasting.

Based on the net discounted income indicator, the profitability index (PI) is determined. It is calculated as the ratio of net discounted income and initial investment (5):

$$PI = \frac{NPV}{IC} , \quad (5)$$

where: IC is the initial investment.

An innovation can be adopted into production if the profitability index has a value greater than one. And here it is considered that the amount of cash flows exceeds the initial ones. If the value of the indicator is equal to one, the innovative activity of the enterprise has a break-even trend. If this value is less than one, the innovative product is completely rejected.

It is safe to say that the profitability index shows the effectiveness of financial injections. It is convenient when choosing alternative options for innovative developments. During its calculation, an interest rate is used that takes risks into account. As a shortcoming of the indicator, it is possible to note the lack of assessment, with its help, of intangible risks and its sensitivity to the scale of innovations being implemented - it does not always provide a clear assessment of invested financial resources.

Alternative methods of evaluating the effectiveness of innovative activities include the calculation of the internal rate of return on investments (IRR) - the discount rate at which today's investments and the value of future cash flows during the implementation of innovative activities are equalized. With its help, you can determine the value of the future cash flow in relation to the initial invested funds.

This indicator is calculated as the interest rate at which the NPV will be zero and shows the maximum level of innovation costs. In other words, the internal rate of return on investments in innovative activity shows the value of the discount rate when the investor will be able to return the initially invested funds.

This indicator is calculated according to formula (6):

$$0 = CF_0 + \frac{CF_1}{1+x} + CF_2(1+x)^{-2} + \dots + CF_n(1+x)^{-n}, \quad (6)$$

where: IRR = x.

The necessary level of profit from the innovative activity of the enterprise depends on profitability risks and financial market trends.

If  $IRR < r$ , that is. the level of profit from innovative activity is lower than the rate of return on invested capital required by investors of innovative developments, the innovative product is rejected [15].

Comparing the indicators of net discounted income and rate of return, it should be noted that the first of them determines the absolute amount of profit, while the second - allows you to calculate the profit per unit of invested funds.

The use of this indicator makes it possible not only to calculate the stock of financial strength of the enterprise, but also to compare the introduced innovations.

The disadvantages of this indicator include, first of all, the fact that the calculation is carried out by the selection method, which leads to an inaccurate assessment compared to other indicators. In addition, non-financial innovation risks are not taken into account, and the income received involves the reinvestment of income at the IRR discount rate. In practice, if the discount rate exceeds the internal rate of return on investments, the results of calculations may be distorted. At the same time, this indicator characterizes the effectiveness of innovative activity.

The discounted payback period (DPP) also deserves attention. It can be used to calculate the payback period of an innovative product taking into account the discounted rate. Most economists recommend taking into account the temporal aspect when calculating it.

Formula (7) is used to determine the time period during which discounted income is compared with discounted costs by economists:

$$\sum_{t=1}^n CF_t \frac{1}{(1+r)^t} \geq IC, \quad (7)$$

where: n is the number of periods;  $CF_t$  – cash flow in period t; r – barrier rate (discounting factor); IC is the amount of initial investment in the zero period.

The indisputable advantage of this indicator is the accounting of liquidity and riskiness of the enterprise's innovative activity [16]. In addition, it facilitates calculations.

At the same time, it excludes the possibility of risk assessment. And this is more likely a disadvantage than an advantage.

Summarizing what has been said, we note that practitioners still give the greatest preference to classical methods, first of all, indicators of net reported income (NPV), profitability index (PI), internal rate of return (IRR), payback period taking into account the discount (DPP), return on investment (ROI), non-discounted payback period (PP), profitability index (ARR), which allows to evaluate the implementation of innovation from an economic point of view.

At the same time, a more reliable assessment of financial and cost parameters is provided by the economic approach.

In our opinion, the approach to the assessment of innovative business development proposed by V.E. Barkovskaya is interesting. [5]

Along with traditional statistical and discount methods, the scientist suggests using auditing methods to evaluate the effectiveness of innovative activities. Such as questionnaires, goal tree method, SWOT-analysis, SNW-analysis, PEST-analysis, expert evaluation method, scenario method, content analysis.

Based on the goals and content of the methods proposed by the scientist, we consider their consideration, in terms of their application to the evaluation of innovative activity, appropriate.

As you know, SWOT is a method of analysis in strategic planning, which consists in dividing factors and phenomena into four categories: strengths, weaknesses, opportunities, and threats.

The logic of the SWOT-analysis is to prepare the basis for the development of strategic actions for the development of strengths to realize the given opportunities, as well as for overcoming weaknesses and reducing the risks of threats.

With regard to innovative activity, the application of this method will allow to evaluate both the capabilities of the enterprise for the development and implementation

of innovation, as well as the conditions affecting the implementation of this type of activity. SWOT-analysis is a flexible tool, so it is suitable for evaluation in various areas.

The application of SWOT-analysis will be the most effective at the stage of substantiation of previous projects of technological documentation in innovative projects of high technologies for express diagnosis of the main problems of such projects.

Thus, this type of analysis should be considered as an intermediate link between the formulation of the enterprise's goal and the definition of development tasks by various innovative means.

The advantage of this method is an alternative selection of elements of analysis, taking into account the existing directions of innovative activity.

Disadvantages may include: belonging to descriptive methods; qualitative nature of the method and its subjectivity.

The PEST-analysis, like the SWOT-analysis, allows you to obtain an objective assessment of the situation and all the necessary information for making effective management decisions. However, the first of them deals only with the study of the influence of external factors, while the SWOT-analysis takes into account both external and internal aspects of the innovative activity of the enterprise.

PEST-analysis allows you to get an assessment of the interaction of a business entity with objective factors of the outside world. It helps identify threats before they turn into real problems, and areas of innovative activity that are risky, under the influence of external factors, for enterprises.

Thus, the PEST-analysis is appropriate in the process of making a decision about the feasibility of carrying out innovative activities by a business entity.

The advantages of this method are: reducing the potential risks of innovative activity and the possibility of researching its new directions. Failure to observe the regularity of conducting this type of research can be noted as shortcomings.

The SNW-analysis method (an acronym from the English Strength, Neutral, Weakness) is an analysis of the organization's strengths, neutrals, and weaknesses.

Usually, SNW-analysis is used for a deeper study of the internal environment of a business entity after carrying out a SWOT-analysis.

Its advantage is the fixation of the average market condition for each factor of the internal environment, which makes it possible to improve the company's strengths. Its lack of informativeness and lack of dynamism can be noted as a drawback [12].

The method of scenarios is a system thanks to which scenarios are developed, which allow to ensure the development of effective solutions in various situations, while reducing probable losses to a minimum.

Thus, this method provides for the consideration and accounting of several options for the development of alternative events as innovative activities of the enterprise as a whole, including the innovation being introduced, as well as the development of the market and the enterprise itself. This method forms optimistic, pessimistic and real scenarios, taking into account external and internal changes [17].

The disadvantage of the method is insufficient attention paid to the interdependence of the factors causing these changes. Taking into account the interaction of various aspects of the development of the situation can be considered as an advantage of the method.

Summarizing what has been said, we note that the experience of Ukrainian researchers in evaluating innovative business development comes down to the fact that it presupposes, firstly, the existence of a substantiated and scientifically verified system of indicators, and secondly, the availability of a statistical base.

In this regard, we consider it expedient to consider the possibilities of application in the assessment of innovative development of expert assessment methods, which was mentioned above.

As it became clear during the research, the method of expert evaluations during the assessment of innovative development is practically not used. At the same time, this approach makes it possible to integrate characteristics that reflect the most important aspects of innovative development. These are: and socio-economic conditions of innovative activity; and scientific and technical potential of the enterprise; and the quality of innovation policy carried out by management.

Given that innovative development can be characterized by elements of different composition and content, each of which has a certain independence and autonomy, its comprehensive characterization can be obtained only by their integrated unity. After all, the dysfunction of at least one of these characteristics makes the assessment of the whole population questionable.

As you know, expert evaluation methods are research methods involving experts and processing their opinions, later expressed in quantitative or qualitative form. Thanks to them, the collection, generalization and analysis of experts' opinions acquires the form most convenient for making an informed decision [18].

In our opinion, the application of expert evaluation methods in the evaluation of innovative development will allow solving two important tasks. First of all, it is the identification of factors that affect the effectiveness of innovative activity. And, in addition, determination of the weighting coefficients of the established criteria.

Thanks to the application of expert methods, the business management has the opportunity to forecast and predict changes in factors that are difficult to predict, which lead to innovative business development.

In practice, two methods of expert evaluations are distinguished: individual evaluations based on the use of the opinion of individual experts, independent of each other; and collective - based on the use of the collective opinion of experts.

Summarizing the studied information on this issue, we note the following. The factors to be evaluated are measured in one of three ways: ranking, paired comparison, and direct assessment.

The first of the methods - ranking - involves, based on the properties of the factor, their formation in ascending or descending order.

Ranking can be done in three ways. The first is a simple ranking method. In the course of its application, each expert is asked to arrange the features according to the determined preferences. According to the results of the study, the matrix (8) is formed:

	<b>1</b>	<b>2</b>	...	<b>j</b>	...	<b>m</b>
<b>1</b>	$a_{11}$	$a_{12}$	...	$a_{1j}$	...	$a_{1m}$
<b>2</b>	$a_{21}$	$a_{22}$	...	$a_{2j}$	...	$a_{2m}$
...	...	...	...	...	...	...
<b>i</b>	$a_{i1}$	$a_{i2}$	...	$a_{ij}$	...	$a_{im}$
...	...	...	...	...	...	...
<b>n</b>	$a_{n1}$	$a_{n2}$	...	$a_{nj}$	...	$a_{nm}$

(8)

where  $a_{ij}$  is the expert's assessment of the feature.  $n$  is the number of factors,  $m$  is the number of experts.

Then  $S_i$  is calculated - the average value of the importance of the feature. Thus, the most significant factor is selected from their entire set.

The second method is ranking using weighting factors ( $a_{ij}$ ). In the course of its application, all factors are weighted in such a way that they add up to a fixed number (for example, 1). The most important, according to experts, is given a fixed value, and the less important - corresponding fractions of this value.

And the third method is a sequential comparison: the expert arranges all factors in order of decreasing importance; gives the first of them a value equal to 1; to the rest - gives weighting factors in fractions from 1 and compares the value of the first factor with the sum of all the following ones.

Unlike ranking, the method of paired comparison does not group all factors in descending or ascending order, but establishes preference or equality when comparing possible pairs.

A pairwise comparison is carried out when there is a large number of factors being studied, or in the case when there is a very small difference between them.

As in the first case, a composite matrix (9) is formed, the size of which is determined by the number of factors being studied.

	<b>1</b>	<b>2</b>	...	<b>j</b>	...	<b>n</b>
<b>1</b>	$a_{11}$	$a_{12}$	...	$a_{1j}$	...	$a_{1n}$
<b>2</b>	$a_{21}$	$a_{22}$	...	$a_{2j}$	...	$a_{2n}$
...	...	...	...	...	...	...
<b>i</b>	$a_{i1}$	$a_{i2}$	...	$a_{ij}$	...	$a_{in}$
...	...	...	...	...	...	...
<b>n</b>	$a_{n1}$	$a_{n2}$	...	$a_{nj}$	...	$a_{nn}$

(9)

Filling the matrix with elements  $a_{ij}$  is carried out based on the previously determined filling scheme. As an option:

- 2, if factor  $i$  is better than object  $j$  ( $i > j$ );
- 1, if equality of factors is established ( $i = j$ );
- 0 if factor  $j$  is better than factor  $i$  ( $i < j$ ).

If necessary, the method of direct assessment is used to determine the degree of significance of factors. At the same time, the range of changes in the factor's characteristics is divided into separate intervals, each of which is assigned a certain score, for example, from 0 to 10. That is why this method is called scoring. Various methods of mathematical statistics are used to analyze the received expert evaluations, which are combined depending on the task set during the research. Most often, among the possible methods of processing expert evaluations, the Elo rating system, the method of analyzing hierarchies, Conorce's paradox, Borda's rule, and others are used. Moreover, the result can consist of several algorithms that complement each other [18].

The indisputable advantage of these methods is their low cost and the possibility of quantitative assessment of qualitative factors. At the same time, their shortcomings include the need for highly qualified specialists, which is sometimes extremely difficult. And a certain subjectivism during the formation of conclusions based on the results of the analysis. The tree of goals is a structured model of goal setting based on a hierarchical principle. In other words, a goal tree is a method of goal setting and its division into tasks, the implementation of which leads to its achievement. A graphic diagram resembling a tree is obtained, at the head of which is a global goal. This model allows you to conveniently imagine all the goals of a person or organization. Unlike conventional planning, each stage on the tree leads to the next level and is associated with a specific intention.

The goal tree allows you to see the whole picture as a whole, and based on all identified options, make effective decisions about how strategic goals will be achieved. It allows: to identify bottlenecks; understand what to work on in the near future; decompose processes. Thus, this method is quite interesting in choosing possible optimal ways of development of both innovative activity and the enterprise as a whole.

It makes it possible to increase the efficiency of management by improving planning and control at the enterprise. However, this method is quite time-consuming and difficult to accurately determine the goals [19].

Content analysis is the analysis of arrays of homogeneous documents [20] In domestic practice, content analysis is defined as a quantitative analysis of texts



followed by the identification of numerical patterns contained in the text. This is a rather strict scientific method, which involves recording certain elements contained in documents, followed by quantitative processing of the obtained data. With the help of content analysis, the following are established: social orientations and establishing the creator of the text; values and norms replicated in documents, the effectiveness of their perception in different audiences.

The methodology of content analysis is quite fully described in the special scientific literature. However, it makes sense to dwell on some of its advantages and disadvantages. By processing large text arrays, it makes it possible to identify trends by comparing items belonging to different time periods. It accurately registers indicators; its results are objective and accurate. Content analysis creates a picture of the vision created in society with the help of mass media. Most often, content analysis is used to study the sociological and psychological aspects of mass communication.

At the same time, this is a rather time-consuming type of research, which causes certain difficulties when determining the type of analysis [21].

The last of the declared Barkovska V.E. methods are questionnaires. Questionnaires are the most common method of collecting information in science. With its help, the opinions of different respondents are studied and analyzed. Regarding the assessment of innovative activity, it may be about collecting and processing the opinions of potential consumers of certain innovative products or services in order to develop an appropriate management decision. Respondents fill out a questionnaire that contains questions of interest to the interviewer. To obtain qualitative and objective results, the questionnaire should be conducted by highly qualified specialists in this field [22].

The advantages of the method are a wide range of information and the possibility of its application in combination with other methods. The main drawback, as with the previous method considered by us, is its laboriousness. In addition, certain difficulties may arise when interpreting both questions and answers. As we can see, all proposed by Barkovskaya V.E. audit methods are quite simple, have a low cost and a fairly wide scope of application. At the same time, these methods are still rarely used in the

assessment of innovative business development. We believe that the above static and discounted approaches provide an objective assessment of the effectiveness of innovative activity. Whereas audit methods analyze more the influence of factors, while giving a subjective assessment. As can be seen from the above, most of the considered methods are more expedient to use in long-term forecasting. They are easy to calculate. At the same time, taking into account unstable economic relations, they cannot provide a sufficiently objective assessment.

Summarizing the results of the analysis of the studied scientific works on innovative business development, we note the following. Innovation is the result of scientific activity, the basis of which is an innovative product or service. It is the main source of profit and, as a result, a factor in increasing the competitiveness of the enterprise.

Innovative activity - the introduction of innovations into the main activity of a business entity in order to increase its efficiency. The study of domestic and foreign approaches to the assessment of innovative development showed that their main difference lies in the possibility of obtaining a decision on investment and financing with the determination of the payback period of the innovative project, with minimal risks for the enterprise.

On the other hand, the existing evaluation methods assume, mainly, the evaluation of financial injections. Which may not always be acceptable, especially for small businesses.

Taking into account the above, it is advisable to evaluate the innovative development in the form of calculating the most significant indicators that objectively reflect the innovative activity of the enterprise, which allow to substantiate the correctness of the chosen direction of the enterprise's development from the standpoint of its current state and the existing management system.

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**STRATEGIC MARKETING MANAGEMENT IN THE CONTEXT OF  
BUSINESS PROCESS REENGINEERING**

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In order to achieve success and ensure the stable competitive development of agribusiness entities, it is necessary to implement a system for monitoring the dynamics of the influence of external environmental factors and implement response scenarios by making strategic changes. In addition to high variability, the external environment is characterized by instability, which requires taking into account possible risks and introducing methods of managing them into the current activities of subjects (in particular, functioning in conditions of uncertainty). To solve the mentioned problems, it is necessary to develop methodological principles, mechanisms and methodological support for the development and implementation of strategic changes to increase the efficiency of the use of potential and to ensure the competitive development of

domestic agribusiness and protection from the adverse consequences of negative risks. In order to ensure the leveling of the impact of the identified negative factors, it is necessary to develop reengineering models through competitive strategies, as well as scenarios for the implementation of strategic changes for agribusiness entities depending on the operating conditions, which involves the use of tools of marketing activities, and the combination with strategic management will give the greatest positive result of protection from negative consequences. An algorithm for monitoring activity risks for agribusiness subjects is also proposed, using modern software to implement methods of economic-mathematical modeling and to determine the statistical significance of expert assessments. In parallel, express methods of risk assessment will be developed, which are aimed at reducing the time of collecting information about the state of the external environment for making appropriate management decisions with the aim of full or partial reengineering of the business models of agribusiness entities.

The current state of development of domestic agribusiness entities is characterized by a steady tendency to increase production capacity, diversify production, search for new forms and methods of management and production alternatives in the conditions of sustainable development of the agrarian sphere. Problems for domestic agribusiness entities are incomplete use of the available potential when entering the market and a high level of turbulence in the external environment. The importance of this topic lies in paying special attention to certain, most relevant today, directions in the field of agricultural production. Ecological and organic are singled out as the best and most promising production alternatives for agribusiness, which will not only provide for public needs, but also serve as a reserve for economic growth. The mainly "raw" market share of agri-food products for agribusiness entities, the unfilled capacity of the organic products market and the existing potential for the development of ecological production in Ukraine create all the necessary conditions for increasing the level of competitiveness of domestic producers. Today, the volume of demand for ecologically clean products in a number of countries of the world significantly exceeds the volume of supply, which is also

promising for domestic agricultural enterprises. There are a number of problems, the solution of which lies in the plane of reengineering of strategic management models, which is possible under the condition of the simultaneous introduction of strategic changes and a risk management system, which necessitates the development of methodological tools and practical recommendations. The formation, implementation and implementation of marketing strategies, the formation of the concept of managing strategic changes and risks, which take into account the peculiarities of the functioning of agribusiness entities, will allow them to develop and implement the latest mechanisms of strategic management, which contributes to increasing the competitiveness and efficiency of their activities.

The purpose of the study is to develop a methodological basis, methodological support and practical recommendations for agribusiness subjects regarding the planning and implementation of strategic changes to ensure the reengineering of competitive development models. Research task: to propose a methodological basis for reengineering through strategic management and strategic change management for agribusiness entities; develop a classification of strategic changes; summarize the external and internal factors that provoke the need for strategic changes for the enterprises under study; develop scenarios of reaction to the influence of factors of the external and internal environment in the context of the implementation of strategic changes at enterprises; to develop a mechanism for ensuring compliance of enterprises with the requirements of the competitive environment by forming dynamic capabilities and competencies; to propose a methodology for the formation of a competitive strategy for the development of enterprises; justify the process of involving marketing tools to increase the level of compliance of the enterprise with the requirements of the external environment, increase its resistance to the occurrence of adverse risks due to the formation of dynamic abilities and competences of personnel through the implementation of strategic changes; improve the procedure of reengineering business models to ensure the creation of unique competitive advantages within the framework of developing competitive strategies; to improve the methodological and methodical

toolkit of risk management as a component of the methodological basis of strategic change management for agribusiness entities.

Increasing the competitiveness of agricultural enterprises, under the modern conditions of their functioning on object markets, is one of the most difficult and promising areas of research, which is primarily caused by the peculiarities of their production, sales and marketing activities. It should be noted that the main problems of implementing effective marketing activities of agricultural producers are not only commercial, but also industrial in nature. Therefore, the adaptation of the existing theoretical provisions and the identification of the main components with further use as a comprehensive strategy is an urgent task of conducting research in this direction.

There is a wide range of marketing strategies of market competition already defined in the theory, which can be combined into a system of competitive strategies of enterprises and considered as a set of strategies aimed at adapting enterprises to changes in the conditions of competition and strengthening its long-term competitive position on the market. In particular, a block of strategies for the formation of competitive advantages (cost control strategies, differentiation strategies and focusing strategies), a block of strategies for ensuring the competitiveness of enterprises (product-market and resource-market strategies, technological strategy, social strategy, financial and investment strategies, organizational and managerial strategies, etc.), a block of strategies for the competitive behavior of enterprises in selected target markets (offensive, defensive and cooperative strategies). However, in our opinion, their adaptation to the activities of agricultural enterprises in full is not possible due to the specifics of the industry.

In theory, the system of competitive marketing strategies of enterprises should include strategies for the formation of competitive advantages, strategies for ensuring the competitiveness of enterprises, and strategies for their competitive behavior. At the same time, it should be noted that the main feature of the formation of these strategies for the conditions of activity of agricultural enterprises is the impossibility of their rapid and complete implementation due to a number of organizational, economic and managerial factors.



In particular, with regard to the problems of the organizational part, the primary strategy of enterprises is to fully ensure the use of already existing production capacities of enterprises. In agricultural production, a technical and technological base has been formed for years, the updating of which is not possible due to the factor of rapid response to changes in the market environment. That is, such a strategy for the formation of competitive advantages as a differentiation strategy, and the main production strategies for ensuring the competitiveness of enterprises - product-market, resource-market and technological strategy - in most cases will not be able to be updated or even applied to agricultural enterprises in the short term. It should also be noted that the main negative factor in increasing competitiveness for agricultural enterprises is time, therefore, it is the quick response to the market situation that is one of the most important and difficult tasks set before them.

By adapting marketing strategies for gaining competitive advantages in business processes or the so-called general strategies of competition, the essence of which is revealed through the matrix according to M. Porter's canonical approach, to the conditions of the functioning of enterprises, the following conclusions can be drawn.

The strategy of "leading on the basis of reducing costs (prices)" is based on the optimization of all parts of the production and management system: production capacities; the level of costs for raw materials, materials, energy carriers; labor productivity, i.e. oriented to a high level of production efficiency indicators. On the other hand, this strategy can contribute to the reduction of other parameters of competitiveness: the quality of manufacturing of individual parts, the corresponding level of service, etc.

The competitive advantages of low costs are especially important in cases where:

- price competition prevails on the market;
- products have a high level of standardization;
- the costs of buyers for the transition to consumption of products of competing enterprises are insignificant.

The strategy of differentiation involves the use of elements of uniqueness in the production and sale of products that have value for consumers. This added value, which

the products of competing enterprises do not have, allows the producer to receive a premium, which is the difference between the price assigned by the producer and the average price in the industry. The success of a competitive differentiation strategy requires a match between the needs for differentiation that consumers have and the company's ability to provide that differentiation.

The strategy of differentiation creates favorable conditions for interaction with all five elements of the intermediate environment of the organization and, under the condition of effective implementation, allows obtaining higher profits than the strategy of controlling costs.

A market analysis of the differentiation potential for each type of product is necessary, which takes into account the readiness of consumers for differentiation, and also allows determining the most promising directions of positioning

A focusing strategy is a deeper differentiation of the products produced by the enterprise, or the achievement of lower costs in the conditions of operation in the selected segment. Sometimes both sides of this strategy are implemented simultaneously.

For agricultural enterprises, the focusing strategy is a set of decisions regarding the list of target segments on which it will work, and the method of positioning the company's goods in each of the target segments. In general, the process of developing a focusing strategy for enterprises consists of five stages.

1. Determining the expediency of the company's application of the focusing strategy.
2. Market segmentation.
3. Selection of target segments.
4. Positioning of the product on the market.
5. Specifying the focus strategy by developing a marketing mix for each target segment

The basis for selection of segments is a preliminary analysis of the market environment and the results of research on consumer motivations. For such a study, the

following technologies for studying the motives of potential consumers can be used, selected taking into account the specifics of the industry (agricultural production):

1. Survey. It is carried out by marketing specialists who conduct interviews with potential consumers (processing enterprises, etc.) in an arbitrary manner. The interview begins with general problems and gradually narrows to the research object.

2. The "third person" test. It consists in the fact that the participant of the experiment is invited to comment on the point of view of another person regarding the object of research.

Segments obtained in the process of segmentation may be of different interest to the enterprise. When deciding on the number of segments that the company will cover with its activities, three alternatives are possible:

a) the market is considered as a whole as one large segment, i.e. it is not segmented at all;

b) the company's activity is concentrated on all market segments and a marketing complex is developed for each;

c) one or more segments significant in terms of their potential are selected from the entire population.

The approach to the classification of competitive strategies proposed by M. Porter was later subject to repeated additions and modifications. One of these modifications provides for the allocation of not three, but five basic strategies of competition:

- cost leadership strategy;
- strategy of wide differentiation;
- optimal cost strategy;
- focused strategy based on low costs;
- a focused strategy based on product differentiation.

According to this point of view, the basic competitive strategy is the basis of the company's competitive behavior on the market and describes the scheme of securing advantages over competitors and forms the company's management strategy. There are five basic competition strategies:

- cost reduction strategy – focused on the mass production of standard products, which is more efficient and requires lower specific costs than the production of small batches of heterogeneous products. The incentive for its use is significant savings on the scale of production and the attraction of a large number of consumers for whom price is a determining factor when purchasing;

- the strategy of product differentiation - is based on specialization in the production of special products, which is a modification of an already existing one;

- market segmentation strategy - aimed at providing advantages over competitors in a separate and often single market segment, which is distinguished on the basis of geographic, psychographic, behavioral, demographic or other principles of segmentation;

- innovation implementation strategy - manufacturers do not bind themselves with the need to reduce the cost of manufactured products, differentiate them, etc. The main goal is to overtake competitors and single-handedly occupy a market niche where competition is insignificant;

- the strategy of immediate response to market needs - aims to meet emerging needs in various areas of business as quickly as possible. The main principle of behavior is the selection and implementation of the most profitable projects in the current market conditions.

The above types of competitive strategies are not mutually exclusive, but complement each other. The following sequence of developing and implementing a system of competitive strategies is the most logical:

1. Determination of an acceptable strategy for the formation of competitive advantages.

2. Development of a strategy for ensuring the competitiveness of the enterprise, which specifies long-term action programs for all functional areas of its activity. The implementation of the specified action programs should ensure the formation of relevant competitive advantages.

3. The use of different types of strategies of competitive behavior, depending on the market situation and taking into account the strategies for the formation of

competitive advantages and the strategy for ensuring the competitiveness of the enterprise determined at the previous stages.

4. Implementation of a system of competitive strategies, which should be accompanied by a systematic assessment and analysis of results, identification of deviations from target guidelines and a quick reaction to unforeseeable external and internal changes.

According to M. Porter, the development of a competition strategy is largely determined by a clear formulation of what the business will be, what its goals should be and what policies are necessary to achieve them [6].

Stages of development and implementation of competitive strategies:

1. Setting the goal. The development and establishment of short-term, medium-term and long-term goals of the enterprise is the foundation for choosing a competitive strategy. Depending on the circumstances, some firms strategically aim their actions at eliminating competitors, others - at separating from them, others - at getting closer to them, and the fourth - at giving them positions (self-elimination) on favorable terms. Since all business entities differ among themselves in terms of the type of behavior and implementation of goals, each enterprise, striving for the optimum competitive position, has to influence rivals in its own way, imposing its interests on them, and at the same time oppose them, defending these interests from encroachments from the outside.

2. Analysis of the external environment. It is a process of monitoring the organizational environment, which is identified with real and future threats and favorable opportunities that may affect the ability of the firm to achieve its goal. The purpose of the analysis: to ensure a timely management response to external and internal impulses to achieve the enterprise's goal.

3. Study of the internal environment of the enterprise. The purpose of the study is to identify internal variables of the organization that can be considered as its strengths (weaknesses), assess their importance, establish which of these variables can become the basis of competitive advantages. Principles of analysis: the principle of comprehensive analysis of all subsystems that make up and elements of the enterprise;

the organization is considered as a complex system operating in an environment of open systems and consisting, in turn, of a number of subsystems; indicators should be evaluated dynamically, as well as compared to similar indicators of competing enterprises; the principle of taking into account the industry and regional specifics of the enterprise. The analysis of the internal environment includes the study of two areas of the organization: macro-environment (the internal environment of the entire enterprise is studied (comparison of the firm's resources and the efficiency of their use with other organizations of the industry (region) to choose the optimal competitive development - analysis of the organization's competitiveness); micro-environment (the internal environment is studied only for a specific strategic area of management: research of enterprise resources, evaluation of the effectiveness of production and sales activities of the organization, determination of strategic competitive potential of enterprises).

4. Determination of the strategic goal and setting of tasks. Determination, based on a comprehensive analysis of the external and internal environment, limitations in the enterprise's activities, threats and opportunities for it from the external environment, prospects for the company's development, formation of strategic alternatives for achieving the goal.

5. Analysis of strategic alternatives and strategy selection. First, the entire set of alternative development options is considered, from which those that will ensure the achievement of the intended goal to a greater extent, can be implemented within the resource capabilities, and satisfy the system of accepted performance criteria are selected. The process of choosing strategic alternatives can be based on the strategic positioning of the organization, strategic business areas, individual products, using matrix analysis tools. Groups of criteria for choosing alternatives: response to opportunities / threats of the external environment; obtaining competitive advantages; compliance with the goals of the enterprise; feasibility of the strategy; consideration of relationships with other strategies of the enterprise (strategies of different levels). The most common method of assessing the probable economic effect of each alternative on

the future of the enterprise is the development of scenarios in which three options for the development of events are provided: optimistic, pessimistic and the most probable.

6. Planning the implementation of the strategy. Includes: development of a detailed plan for implementing the chosen strategy into reality, indicating the terms of phased implementation and expected results.

7. Implementation of strategic decisions. It is carried out in two directions: using administrative levers (tactics, policies, procedures and rules); with the help of economic levers, by forming a budget, applying a system of indicators and managing by goals. Stages of the strategy implementation process: preparation of information used at all stages of strategy implementation; planning, programming, budgeting of approved decisions; actual execution of decisions; All strategic decisions must be brought to specific executors in the form of approved plans, orders, orders and other organizational documents, that is, managerial decisions must be transformed into organizational ones.

The strategy for ensuring the marketing activity of the enterprise is a comprehensive strategy that includes long-term action programs for all business processes aimed at forming the appropriate level of competitive potential and competitiveness. Adaptation of the existing theoretical provisions to the conditions of production and economic activity of agrarian enterprises makes it possible to highlight the main components, as well as to propose a comprehensive system of ensuring their development.

The components of ensuring the competitiveness of agricultural enterprises are the use of the following marketing strategies, either individually or as a system: product and market strategy, resource and market strategy, technological strategy, integration strategy, investment and financial strategy, social strategy, management strategy, etc.

The process of forming a competitive strategy should be complex in nature. However, the proposed model should not be considered universal, since in each real situation it is necessary to rely on the existing circumstances. Each stage has an independent meaning and requires the use of specific, from the point of view of development and implementation of competitive strategies, procedures and methods.

In the process of developing a system of competitive strategies, it is possible to use numerous tools:

- "Product-market" matrix, BKG matrix, "Market attractiveness - advantages in competition" model;
- analysis of the intensity of competition on the market, the degree of its monopolization, the market share of competitors, the rates of its growth, etc.;
- analysis of the structure of the strategic potential, possibilities of expansion of the company's resources, features of the industry, SWOT analysis, etc.;
- analysis of the market environment and competitors, analysis of industry dynamics, consumer analysis, segmentation and overall assessment, etc.

As a result of the work, a methodological basis for managing strategic changes will be proposed, developed directly for agribusiness subjects in various production directions, taking into account cooperative relations between sub-sectors of this sector, on the basis of which the best strategies for competitive development are substantiated. For the first time, scenarios of the reaction of agribusiness subjects, as appropriate types of strategic changes, to the influence of external and internal environmental factors will be proposed, taking into account the quantitative forecasting of the dynamics of the influence of these factors. A mechanism will be developed to redistribute the available resources of agribusiness entities to create growth potential, which includes a set of levers and methods to ensure the competitiveness of ecological and organic production in the future. The risk management toolkit will be improved, as a set of means of implementing the methodological basis of strategic change management. The procedure for the formation of dynamic capabilities and competencies of marketing activity will be further developed, which, unlike the existing ones, provides for the implementation of the mechanism of strategic changes, which is based on taking into account the conditions of functioning of the subjects of the agribusiness sphere and the level of their potential.

The proposed methodical approach to assessing the level of potential of agribusiness entities, changing the configuration of the internal environment of the enterprise, as well as the mechanism of redistribution of resources to create growth potential will make it possible to identify unused internal reserves of the enterprise to activate the processes of their use in current activities with the involvement of



marketing tools, which will contribute to the increase market share, growth in sales of ecological and organic products. On a national scale, this will strengthen the country's food security and improve Ukraine's image on the world market.

The reengineering of management strategies and the development of scenarios for the development of marketing activities for agribusiness entities will allow a tangible breakthrough in their activities, which will allow them to take their rightful place among the global producers of agro-food products, increase sales volumes and change its structure in the direction of increasing the role of final consumption goods with high share of added value.

Taking into account the high diversity of activities of agribusiness subjects, the obtained scientific results, which have significant methodological and methodical importance, will be useful for primary production industries - directly for agriculture, for processing and storage of finished products, as well as for food market participants, especially in the segment of ecological and organic products. As part of further research, the results that are planned to be obtained may be useful for the subjects of the specified industries and spheres.

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# **CHAPTER 5. MANAGEMENT TOOLKIT FOR ENSURING INNOVATIVE DEVELOPMENT OF BUSINESS ENTITIES**

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## **DIGITALIZATION AS A MODERN TOOL FOR THE DEVELOPMENT OF INFORMATION AND ANALYTICAL SUPPORT FOR MANAGEMENT**

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Digital transformations prompted changes in all spheres of social and economic life of mankind, which was also reflected in the economic activity of economic entities, including their accounting practices. They caused a significant reorientation of the trajectory of business development both at the micro level and at the regional and global levels. Digitalization processes generally change the existing paradigm of interaction between stakeholders, which forms a new character of relations between

them. Virtualization of business processes requires changes in the organizational and methodological support of accounting. Digitalization has also caused changes in the formation of specialist competencies required in modern business conditions. Thus, the impact of digitalization has not only an economic nature, but also a pronounced social and public focus, as it largely determines the demand for labor. Specialists of various industries face new tasks related to the need to create new jobs, review the existing set of functional obligations, and transform them in accordance with existing requirements (Sokolenko, L., 2019).

Today, business is significantly expanding its boundaries, reaching new levels and using the latest technologies of virtual and mixed reality. Virtual assets, liabilities, goods and markets today are already becoming tools for achieving the company's business goals. Real markets and goods are increasingly operating in virtual space and the Internet environment. The digitization of the economy and social life leads to the need to use new management technologies that are based on large-scale data sets, powerful information flows, the formation, systematization and interpretation of which is designed to be provided by the accounting and analytical business support system.

Digital management is no longer the technology of the future. Such management tools are actively used in foreign management practice and in the practice of leading Ukrainian companies. Highly dynamic changes in the factors of the business environment are the incentive, reason and motive that prompt the management of companies to use proactive tools for the implementation of current and strategic management goals. One of these tools is digital management. In contrast to traditional management practices, digital management is distinguished by a set of features that are currently becoming decisive for ensuring the company's success on the market: leadership, modern communication technologies (including in the virtual and digital space), a high degree of management adaptability, digital literacy, people-centeredness and teamwork, a high level of responsibility and readiness for a continuous learning process.

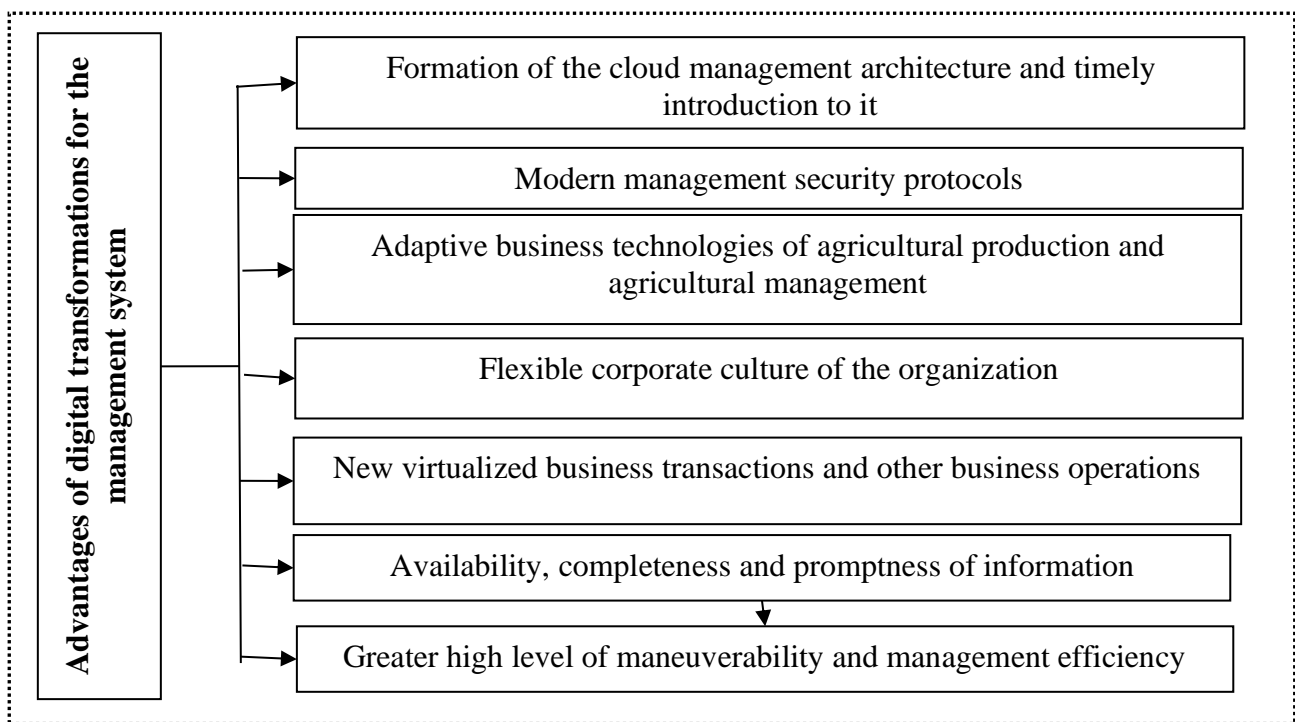
According to the Ministry of Digital Transformation, the activation of digitalization processes of the national economy will allow for additional growth of the

national GDP by 4% per year. The priority strategic directions of the digitalization of the economy of Ukraine today are: the development of digital infrastructure, the development of digital skills, the development of the information and communication technology sector, the digitalization of all spheres of life and types of economic activity (Fedorov, M., 2021).

Despite the active process of dissemination and implementation in domestic business practice, digital management for many Ukrainian companies is currently a tool characteristic of the management process of mainly large business entities. For the successful implementation of this management model in domestic practice, it is important to comply with several key prerequisites: 1) changing the corporate culture and business thinking of the company's managers and personnel; 2) high level of project management software based on online management platforms; 3) active coaching of personnel, change of management philosophy and improvement of the level of corporate culture; 4) effective system of internal control and reverse communication with all components of the management system.

According to foreign experts, the digital transformation of the management system creates additional benefits for business: 1) increased efficiency and productivity due to optimization of operations; 2) better management of resources due to modern E-architectures designed for the consolidation of information flows; 3) increasing the potential for quick adaptability and maneuverability to market changes and factors of the business environment; 4) achieving the effect of large-scale organizational flexibility; 5) increasing the effectiveness of communication technologies with the company's clients; 6) creation of an information platform for the implementation of innovations; 7) formation of a cumulative business effect and improvement of financial indicators of the company's activity (Pratt, M.K., 2021).

From the point of view of information and analytical support of digital management, the main task is the prompt and accurate formation, interpretation and use of the information base, which are determined by high speed, scale, and availability.



**Fig. 1. Advantages of digital transformations for the management system of Ukrainian companies**

*Source: Own research*

Characteristic features are a combination of financial and non-financial data, a wide scale of predictive analytics, information for risk assessment, data visualization, additional convenient control and audit opportunities. Digital platforms of business data are formed taking into account the principles of increasing the level of transparency, availability, reliability and security of information about the company. Among the tools of the information and analytical support system of digital management, the following are already in operation today: specialized software services, cloud accounting, online accounting platforms (Wave, Quick-Book, Fresh-Book, etc.), artificial intelligence, blockchain in accounting, joint online platforms for business and state control bodies, mobile accounting and financial reporting programs, etc. Active integration, the formation of a single economic space, joint tasks of socio-economic development within the Eurospace also appears as an argument for the use of digital information and analytical support for the management process. Today, new challenges and requirements are being formed in the space of implementing a single

sustainable development strategy, where digitization, as a future management tool, occupies a key place. The creation and access to a single information base in the context of the implementation of sustainable development tasks will contribute to the saving of resources, time and efforts of all socially responsible agribusiness participants and providers of the concept of sustainable development at all levels of economic and territorial management.

According to (Strategy.uifuture.org., 2021), there is a certain range of obstacles that inhibit the development of digital transformations in Ukraine:

- institutional – those related to state influence, namely, the formation of the appropriate legislative framework and mechanisms for regulating digital transformation processes, the development of strategies for the development of the country, regions, and industries relevant to global trends, which affects the socio-economic plane;

- infrastructural – those related to the formation of digital infrastructure, in particular, the lack of equal access conditions for the population to digital technologies, i.e. «digital gaps», insufficient coverage of the country's territory by digital infrastructure, complete absence of certain types of digital infrastructures common in developed countries;

- ecosystem – those related to innovative aspects, in particular, the lack of proper conditions for the formation of a favorable investment climate in the country, the imperfect market of investment capital, the inconsistency of the current state of education, in the framework of which the necessary professional competencies are not formed, which requires a modern level of entrepreneurial activity, respectively to global trends, the shortage of qualified personnel necessary to ensure the processes of digital transformations in the country.

Considering the chronology of industrial revolutions in the world, it is expedient to track the transformations of the theoretical and practical basis of accounting (Table 1).



**Table 1 – Chronology of the development of accounting practice as the basis of information and analytical support in the context of industrial revolutions**

<b>Period</b>	<b>Industrial revolution</b>	<b>Management tasks</b>	<b>Accounting tasks</b>
The end of the XVIII century.	Production mechanization, water and steam energy	Expanding the range of resources for production - from human to machine, etc	Expansion of accounting nomenclature of accounting objects
The end of the XIX century	Mass production, electricity from hydrocarbons	Extensive type of production development	Ensuring accounting of nomenclatures with a significant number of objects
1970s of the XX century.	Automation and computerization of production. Atomic energy	Reduction of the specific weight of labor costs in the process of economic activity, intensification of production	Ensuring accounting of nomenclatures with a significant number of objects
From the 80s until now	Cyber-physical production, energy from renewable sources	Use of digital resources in economic activity	Formation of accounting information about digital resources

*Source: Prepared by authors based on (Kolyadenko, S., 2016).*

At the same time S.V. Kolyadenko, relying on the theory of «long waves» M.D. Kondratiev, notes that the technological order is currently underway, the basis of which is the electronic industry, software, information services and robotics (Kolyadenko, S., 2016).

The study of digitization in information and analytical support is gaining more and more relevance and covers a wide range of theoretical and practical issues.

In their research, I. Spilnyk and M. Palyukh focus attention on assessing the current state, defining the features and prospects for the development of accounting in modern conditions, and also substantiate the relevance of creating a new «digital accounting paradigm».

Among the current issues of accounting practice and theory, they single out the following: the use of contactless asset identification technology in accounting, block

chain technology, electronic reporting format, display of cryptoassets in financial reporting and their accounting.

These scientists single out a number of factors that determined the current state of accounting in the conditions of the digital economy: increasing the rate of development of electronic document circulation; allocation of information as a separate factor affecting the value of business; emergence of new accounting objects (in particular, cryptocurrencies, tokenized assets, etc.); growth of the share of non-financial information in the accounting system of economic entities; changing the financial orientation of target priorities to non-financial ones; change in technical and technological approaches to the collection, accumulation, generalization and processing of accounting information; creation of a global information exchange environment with increased requirements for information security; changing approaches and accounting methods in accounting practice (Spilnyk, I., et al., 2019).

It should be noted the position of N. Rohova, who investigates the implementation of existing digital capabilities in accounting and taxation systems, in particular in the part of regulating the use of cryptocurrency. The researcher offers her own vision of the effectiveness of the implementation of digital technologies in accounting. Thus, artificial intelligence will be aimed at performing tasks that are both routine, repetitive and structured in nature (this will improve the quality of inventory, reporting for strategic purposes, identify problems in the management of the company's cash flows, etc.) and non-standard (formation of models for forecasting the level revenues and cash flows, analysis of changes in supplier prices, improvement of the quality of the results of the analysis of unstructured information coming from various sources). Cloud computing will help ensure access, security, control and backup of data, which will significantly save time for performing all these operations, perform automatic error correction, ensure constant access to data, multi-factor authentication, etc. (Rogova, N., 2020).

O. Mazina, V. Oliinyk and S. Rohoznyi single out certain issues that need to be resolved, in particular those related to new accounting information technologies within the framework of the concept of financial reporting and the impact of digitalization on

the strategic management of enterprises in the context of the COVID-19 pandemic. The development of the issue of assessment in accounting, which is raised by scientists, should be emphasized separately. For the most part, the assessment of accounting objects requires deep justification and the use of appropriate mathematical apparatus (Mazina, O., et. al., 2019). Modern technologies make it possible to increase the efficiency of assessment of accounting objects that existed before the spread of digital transformations, however, new accounting objects that have appeared recently have a certain range of specific characteristics that complicate their assessment, and therefore this issue needs to be refined.

The proposal of O. Mazina, V. Oliinyk and S. Rohoznyi regarding the introduction of an additional principle of accounting – creativity – is, in our opinion, quite relevant and appropriate. The essence of this principle, in their opinion, is the availability of adaptation capabilities of both the personnel and the accounting system itself to new business conditions under the influence of digitization, globalization and integration trends (Mazina, O., et. al., 2019). It should be added that it is not entirely correct to equate creativity with adaptation, since, in our opinion, this principle has a broader interpretation: from the personnel's point of view, it is the ability to make non-standard decisions regarding the resolution of emerging situations in conditions of uncertainty; from the point of view of the accounting system, it is an opportunity to implement and use new methods, methods and approaches in the accumulation, collection and processing of information of various nature from various sources in the process of adaptation to the existing business conditions.

In this case, a dilemma arises, which consists in the fact that the domestic accounting practice provides for clear regulation of the formation of accounting information and reporting, while international standards take into account the professional judgment of the accountant, which should be based on developed and approved recommendations, instructions, etc. However, often situations that arise in the process of management have an increasing share of novelty and differ from previous situations, which is due to transformations in the social and economic life of humanity in general. This encourages the production of new knowledge necessary for

the formation of competencies and skills of specialists in various fields, including in accounting.

Digital trends and the active digitalization of information and analytical support for management call for the need to improve and expand the range of professional skills of managers, accountants and economists, among which the following are relevant for the present and the near future: intelligence and skills in the use of digital technologies; critical thinking, creativity and the ability to perform non-standard professional tasks; vision of future business development prospects; experience, modern communication skills and business forecasting. Accounting standards, a complex of ethical standards and professional skepticism remain the basis of professional behavior.

N. Shyshkova offers her own list of digital competencies of an accountant, related to information literacy, communication and interaction, digital content, security, problem solving (Shyshkova, N., 2019).

As for information literacy, an accountant must acquire a significant number of skills that go somewhat beyond the usual qualifications of this profession, namely: be able to navigate the processes of filtering and selecting data among masses of information in digital content, use neural networks, identify business processes and use modern information technologies in working with accounting information, understanding the specifics of digital audit, etc.

As part of communication and interaction, the accountant must be able to use modern technologies, new platforms and services in the process of interaction with internal and external users of information, while observing the rules of etiquette and behavior that exist within this format of interaction.

An important skill is the creation, modification and improvement of digital content, which also involves knowledge of regulatory and legislative aspects regarding copyright, review policy; ability to use simulation modeling and adapt accounting programs to existing requirements.

The aspect of security deserves special attention, since the accountant is faced with the task of preserving and protecting digital information, which in the framework of the use of digital technologies can become available to fraudsters, competitors, etc.,

because the leakage of information, especially that which belongs to commercial secrets, will negatively affect the economic activity of the business entity.

Digitization involves the emergence of a significant range of technical problems, which an accountant must also be able to solve in the course of his professional activity, therefore, a creative approach to adapting digital technologies to one's own needs in order to solve accounting problems is a rather important ability (Shyshkova, N., 2019).

Creativity in relation to accounting as «intellectualization of accounting information systems» is a rather apt statement that deserves, in our opinion, to become part of the new digital accounting paradigm (Mazina, O., et. al., 2019).

N. Shyshkova summarizes the theoretical aspects of changes in the accounting system in the context of the modernization of socio-economic processes of a digital nature, considering the possibilities of implementing IT technologies in the theory and practice of accounting. She notes that «the consolidation of the IT function with the main requirements for the development of the terminological and substantive and practical basis of accounting is able to ensure the information modernization of modern economic processes» (Shyshkova, N., 2019).

In her opinion, the information economy involves the formation of certain requirements for the modernization of accounting, among which the presence of a programmatic, informational, organizational and methodical component is mandatory. Their synergy as information systems should ensure the functioning of the enterprise and the automation of its business processes. She defines the process of IT modernization of accounting as the transformation of accounting processes through innovations of an institutional, organizational, managerial and economic nature with the use of electronic and digital means for the formation of cyber-physical space within the framework of the accounting system. Its goal is to create the so-called «smart accounting» (Shyshkova, N., 2019).

The review of scientific research shows that digital accounting is significantly different from the existing paradigm. In this way, the existing proposals, in particular in the works of (Pohribniak, D., 2020), are somewhat losing their relevance, therefore

it is appropriate to present a new definition of some basic concepts of information and analytical support of management in the conditions of digitalization (Table 2).

**Table 2 – The essence of concepts in the field of information and analytical support of management**

<b>Concept</b>	<b>Type of information</b>	<b>Functional influence in relation to information</b>	<b>Objects about which information is provided</b>
Accounting organization	Accounting and economic	Complex of actions on accounting and analytical information	Tangible and intangible accounting objects
Accounting and analytical support	Accounting and analytical	Formation and provision of accounting and analytical information to stakeholders	Tangible and intangible accounting objects
Accounting and analytical system	Accounting and different from it, which is used to make management decisions	Collection, processing, evaluation	Tangible and intangible accounting objects
Accounting and information support	Accounting and different from it, which is used to make management decisions	Formation and provision of accounting and non-accounting information, which is used to make management decisions, to stakeholders	Accounting objects and those different from them, regarding which management decisions are made

*Source: Prepared by authors based on (Pohribniak, D., 2020)*

Digitization has contributed to a change in the functional impact in relation to information, due to the fact that: paper media are rapidly losing their functionality, and the electronic form is becoming the main form of information presentation; the quality and volume of information has changed - the geometric growth of the volume of information contributes to the complexity of the processes of its processing, as well as orientation in general in the information environment; a significant amount of information is not reliable and up-to-date, which requires additional analysis and verification; the level of danger of leaking information has increased, which requires additional protection and the use of technologies for working with it that will guarantee its preservation and inviolability; the emergence of new accounting objects requires the formation of a new methodological basis for their assessment and accounting, which is necessary for the formation and presentation of information about them to stakeholders.

Today, digital accounting serves innovative business models, for which accuracy, efficiency and reliability of data are an exclusive condition for development, attracting investment flows, building image capital and gaining strategic competitive advantages. Digital accounting technologies are changing the world of big economic information based on the use of automated data analytics, artificial intelligence, digital reporting of companies, making smart contacts and gaining access to online platforms. Such digital tools contribute to increasing the accuracy and efficiency of accounting, transparency and analytics of financial and non-financial reporting of companies, contribute to the growth of the scope of audits, increase their quality, and help to optimize the "cost-time" ratio. Digital accounting acquires a new scale, efficiency, and accuracy. Economic information and methods of its processing are not limited to individual or group work opportunities of accountants, they can be formed on an automated digital basis, improving the quality of accounting, analytical and auditing services. At the same time, digital predictive accounting is determined by the huge development potential.

Accounting and reporting react quite sensitively to changes in users' information requests and have a fairly high potential for adaptability to the needs of participants in

economic relations. The limitations of the legal framework and current national standards are to a certain extent leveled by internal management reporting and business reporting on a voluntary basis (social, environmental reports, sustainable development reporting, etc.).

Leading global companies already have vast experience in organizing and conducting digital accounting, taxation, reporting and auditing. PwC, E&Y, KPMG, Deloitte use artificial intelligence in their practical activities for automatic data analysis, verification of customer documents, compilation and confirmation of reports on cash flows, bank transactions, and assessment of the financial status of customers.

Digital accounting strengthens trust in business and its reporting through transparency, openness and ease of use of economic information by users, serves public and business interests. Accountants are widely using artificial intelligence to assess long-term business value drivers, cloud data and blockchain. The range of consulting issues provided by accounting specialists is expanding in the direction of finding strategic prospects for business development: accounting for sales of goods through the virtual offices of the Meta Universe and creating long-term values and competitive advantages on this basis; optimization of the company's costs due to the use of cloud computing; real-time monitoring of business risks; improvement and verification of blockchain operations; improvement of management based on the creation of predictive data analytics platforms (using the example of EY Smart Factory); consulting services on the Internet of Things; consulting services on intelligent automation of the management process, etc. With the help of modern digital tools, accounting shifts its key emphasis from retrospective analysis, evaluation and presentation of data to forward-looking data analytics, which are necessary for the creation of strategic values and competitive business advantages.

Digital systems of information and analytical management support must meet the requirements and requests of users of economic information. In Ukraine, accounting and financial reporting for general purposes are quite strictly limited by the current regulatory and legal framework. At the same time, active processes of digitization of the national economy are creating new challenges and opportunities for



accounting and reporting. Current accounting theory and practice need changes and additions. Accounting and reporting should collect, systematize and accumulate financial and non-financial data about business processes, business environment, ecological environment, social indicators of development, etc. There is a need for the emergence of new objects and methods of accounting, methods of valuation of virtual assets, information storage technologies, the formation of financial and social and environmental reporting, which in the current mode should provide operational information with the help of digital databases and technical means. Among the tools of the information and analytical support system of digital management in Ukraine today are already working: specialized software services, cloud accounting, online accounting platforms (Wave, Quick-Book, Fresh-Book, information transfer formats (XBRL), artificial intelligence, block chain, joint online platforms for business and state control bodies, mobile accounting and financial reporting programs. The creation of a single information platform for accounting, reporting and taxation with access to a database of owners, investors, managers, and users appears to be promising for domestic practice and regulatory bodies. These processes should be accompanied by the use of new technologies and approaches to the protection and use of economic information.

The spectrum of accounting objects also needs to be supplemented and expanded: in terms of virtual assets, cryptocurrency, relevant calculations and business operations, objects of costs of environmental activities and social responsibility of agribusiness, methodological principles for clarifying the criteria and methods of their assessment, recognition, and reflection in reporting. Such changes require the improvement of the system of national accounting standards, the implementation of the achievements of the accounting methodology in the part of information support for the sustainable development of agribusiness, the addition of general purpose financial reporting with a system of additional indicators and business information.

The development of the digital economy today sets general trends, shapes the requirements and tools of new business models. Taking into account digital trends in activities and quick adaptation, or better yet, proactive transformation of management,

are the key to future success and gaining strategic competitive advantages. Digital accounting, responding to real and potential information requests of users, helps to build effective business development strategies and create long-term value.

Significant intensification of attention to social, economic and ecological aspects of economic management has led to the adoption of a radically new paradigm of social life – a global concept of sustainable development, which is gradually beginning to be reflected in all directions of business operations. Taking into account the principles of sustainable management and increasing investments in sustainable development programs led to an increase in demand for information that characterizes the state of the environment, socio-economic results and the effectiveness of invested funds. Complete, timely and reliable information and analytical support forms the management basis and is necessary. A prerequisite for further transformations and development of sustainable management. In turn, such trends lead to the formation of new requirements for the accounting system and the need to ensure its compliance with trends in business management and social development. The digitalization of accounting processes and the formation of company reports appears as a promising tool for performing these tasks in modern practice.

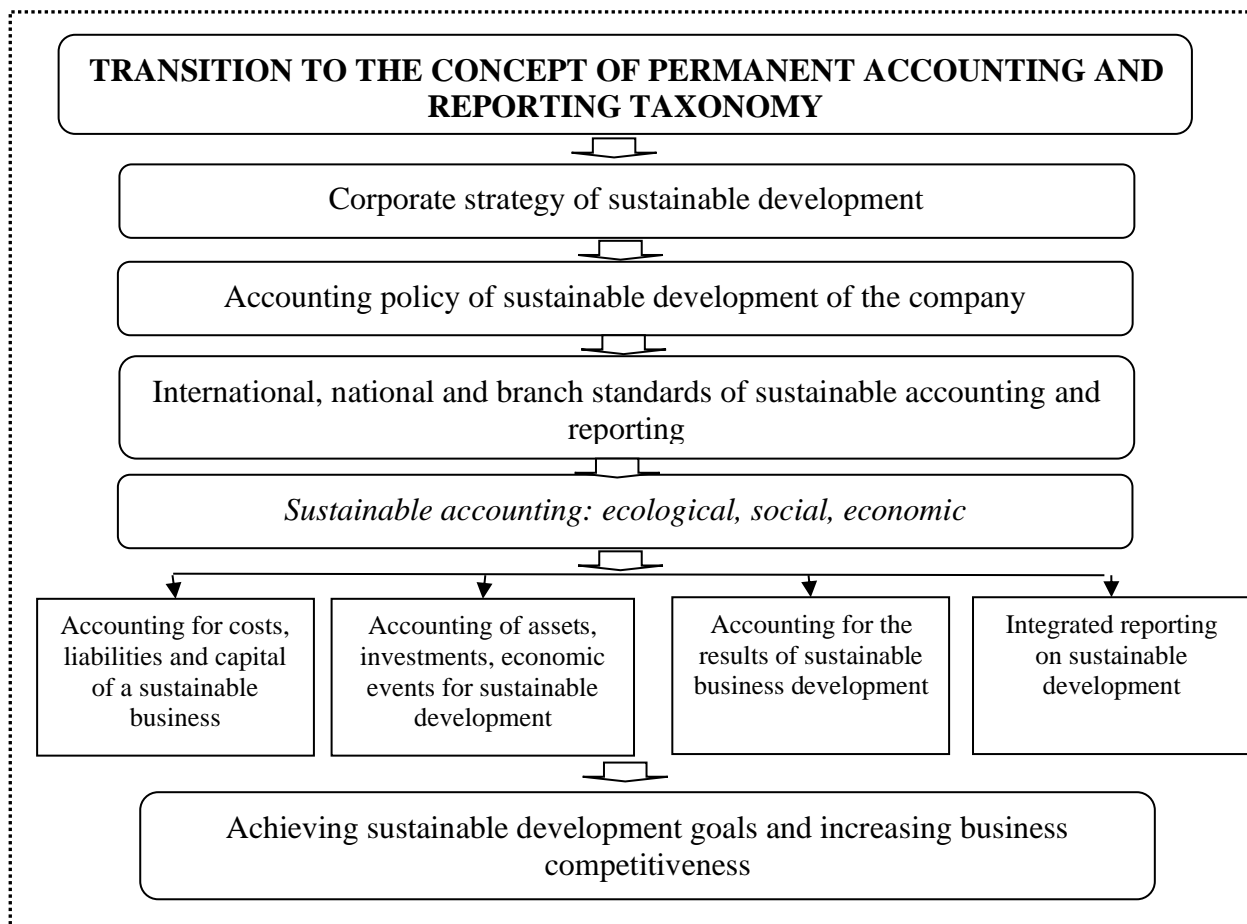
In the context of the active implementation of the global concept of sustainable development, accounting turns into the most important tool for its successful implementation in business practice, which is impossible under modern conditions without taking into account the trends of digitization of the economy and society. Sustainable accounting is gradually becoming a requirement of time and a way to increase the level of transparency, quality and compliance of data on business activities with the goals of sustainable development of the company. Sustainable accounting in modern scientific literature is interpreted as a tool for ensuring sustainable development and preparing corporate financial and non-financial reporting (Varaniute, V., et al., 2022; Zhuk, V., et al., 2020]. From the point of view of complementarity of its main components, sustainable accounting is defined as a combination of environmental, social accounting and business capital accounting.

The study of deficit contours and the content of sustainable accounting made it possible to determine that its key distinguishing feature from traditional accounting is the accumulation, systematization and display in reporting of information that reflects all aspects of the business entity's activity and is related to the implementation of business goals and sustainable development goals .

Accounting for sustainable development is a form of activity that is determined by the key strategy of the company's activity and a tool of activity that provides influence on the company, business environment, competitors, partners, investors and other stakeholders. However, the classical conceptual framework does not extend to non-financial quantification, social or environmental activities. As sustainable management spreads, sustainable accounting is also developing, which is reflected in new business models and additional forms of company reporting (environmental reports, social reports, reports on sustainable development, etc.). Companies use such integrated reporting to create new inclusive business models, build image capital, and find additional sources of funding. Such trends in modern practice are increasingly spreading in the practice of domestic management and are manifested in an increase in the number of reports containing non-financial indicators of the development of companies. According to domestic researchers, in Ukraine today about 13% prepare reports in accordance with GRI standards (Gutsalenko, L., et al., 2021), significant activity is observed in supplementing the internal management reporting of companies with a system of non-financial performance indicators (Makarenko, I., 2017). The configuration of the digital architecture of the national accounting system, as defined by I.M. Nazarenko, combines the following components: automation of accounting, introduction of electronic documents and multidimensionality of accounting data, expansion of means of data collection through digital platforms and the Internet of Things, expansion of means of information transmission to management personnel (Nazarenko, I., 2021).

Sustainable accounting should ensure full satisfaction of the needs of information users in financial and non-financial indicators of activity, reduce to a single report a set of reports, which today are partly mandatory, and partly prepared by business entities on

a voluntary basis. This involves the formation of a set of reports (financial and non-financial) into a single integrated system, which will be universal and understandable for all users based on the format of data presentation and their interpretation (Fig. 2).



**Fig. 2. Model of transition to the concept of sustainable accounting of business entities**

*Source: Own research*

For this, today's need is to expand the articles of the «Financial Status Report», methodical approaches to standard classifications of expenses and income, supplementing notes with integral indicators of sustainable development, working out the mechanism for displaying risks, and the mechanism for managing them. One of the most fundamental and debatable aspects in the theory of sustainable accounting today is the issue of accounting for natural assets that have a direct impact on the processes of sustainable management, however, they appear in a dual essence from the standpoint

of ownership and methodological provisions for their reflection in accounting and reporting.

The transition to the concept of sustainable accounting and sustainable reporting requires an appropriate regulatory and methodological basis, an example of which can be the Draft International Standard for Disclosure of Information on Sustainable Development, which defines the key principles and requirements for the disclosure of information related to sustainable development in financial reporting : General Requirements for Disclosure of Sustainability-related Financial Information, developed by ISSB (The IFRS Foundation, n.d.).

The special importance of sustainable development standards lies in the possibility of future assessment of the impact of the costs of implementing sustainable development programs on the financial condition and results of the business, the projected amount of cash flows, the effectiveness of the business strategy and the value of the enterprise as a whole. The draft International Standard has significant differences from existing international accounting and financial reporting standards. Considerable attention is paid to the mechanism of managing sustainable development processes at the company level (strategy, goal, management structure, management policy, risk management, control, management comments, etc.). Today, this project has passed an open public discussion and is undergoing the procedure of making additions and amendments.

Sustainable accounting, like all other management functions of the modern digital economy, is being transformed based on the use of digital tools that accompany business processes of social development. Experts characterize accounting as one of the areas that can benefit the most from digitization, with accounting processes having the potential to be 98% automated (Frey, C., et. al., 2015).

With the development of digitalization of the economy, the purpose of accounting is also changing, which is designed to record the manifestation of new principles and laws in the realities of new economic relations (Thipwiwatpotjana, S., 2021). At the same time, accounting is acquiring more and more features of a managerial nature, as the most important element of digital information and analytical

support for management (Potryvaieva, N., et. al., 2020). The subject area of digital accounting objects is also expanding, to the traditional list of which are added: valuation of virtual units of value, capitalization of intangible factors of sustainable socio-economic development, valuation of environmental security objects of socio-economic assets, digital data, cryptocurrency and their corresponding display in business reporting. This requires improvement of accounting in the direction of approbation of new methods, emergence of new areas and methods.

According to the research of foreign experts (Dan Marius, C., et al., 2022), world practice singles out the following as the main advantages of digital accounting: increasing the efficiency of accounting due to the automation of accounting processes (availability, productivity, efficiency, economy, elimination of the risk of human errors); real-time tracking and access to accounting; the possibility of remote access and work for accountants; possibilities of virtualization of accounting processes and display of accounts that automatically reach each party participating in economic transactions.

As the main tools of digitalization of accounting, the following are already actively used in the world today: blockchain technologies; spreadsheets; The system of accumulating and storing information using computer clouds – «cloud accounting»; mobile accounting and reporting programs; technologies of optical recognition and contactless identification of data (Kryukova, I., 2021); the use of artificial intelligence in the creation of company reports and in the use of mechanisms of control, audit, tax administration, the formation of digital platforms based on the accumulation and systematization of economic and non-economic information. The use of digital tools such as Making Tax Digital, Payroll, Xero, App, QuickBooks and Free Agent are no longer innovations.

According to the global agency Accounting Today, the market for digital accounting products will grow annually by 8.6% per year, and its total value in 2026 will be is more than 11.7 billion dollars. USA (Outlook MONEY.com, 2022).

Digitization in the field of accounting and financial reporting today helps to increase business capital and increase its value. Thanks to its flexible and transparent

mechanisms, digitalization can help transform the traditional accounting of costs, liabilities, results of assets and capital instruments into accounting of sustainability and accounting of values.

In modern management practice, the processes of digitization of accounting and reporting are developing in the context of using modern corporate management platforms, following the example of ESG (Environmental, Social, and Corporate Governance). As a result, companies conducting their business on the basis of sustainable development form their reporting in the digital plane using large electronic data arrays and digitization of the reports themselves.

The use of platform accounting technologies makes it possible to guarantee the efficiency of data on accounting events and records, ensure the efficiency of receipt of primary documents to partners, minimize the risk of errors and the need to agree on joint settlements and debts. In the context of active processes of digitization of the economy in general, and accounting, in particular, the requirements and the range of competencies of accounting and reporting specialists are also changing. Today, they acquire professional skills as analysts, IT specialists, consultants, business strategists, etc.

At the same time, the disadvantages of digital accounting and reporting today are: absolute dependence on the availability and quality of Internet traffic, data security, aspects of user personalization, reorganization and reduction of the sphere of social contacts in the business sphere of communication of specialists (accountants).

The process of transforming a company into a digital accounting firm, in addition to the direct use of digital tools and methods of work in practical activities, requires the following organizational prerequisites: 1) development of digital business thinking; 2) preparation of the organizational management structure for digital changes; 3) acquisition of digital knowledge and skills; 4) formation of a new corporate management culture. The company's personnel must be ready for the use of digital technologies, communication, innovative changes and the need for constant improvement of the performed functions (Tettamanzi P., et. al., 2022). Digital transformation requires the manifestation of leadership qualities of managers and key

specialists, who must provide intellectual stimulation, a high level of communication and the ability of personnel to manage changes.

The preliminary discussion of the project of the International Standard for disclosure of information about sustainable development (General Requirements for Disclosure of Sustainability-related Financial Information) outlined the longer directions of its improvement for the formation of appropriate business reporting. Key among them were: business value and methods of its assessment and display; assessment of risks associated with the sustainable development of companies; a strategy for making management decisions related to sustainability; resilience to climate change; issues related to the financing of sustainable development programs; industry requirements for sustainable business development. According to the outlined directions, issues related to user access to the necessary information on sustainable development require solutions today. To ensure such access, an optimal digital solution will be a digital platform that will ensure the integration of participants in the preparation and submission of environmental, social and management reporting according to sustainable development standards, their developers, professional agencies (auditing, consulting), academic researchers, government working groups and other users.

Accounting on the basis of sustainable development and the preparation of relevant reports require additional training and acquisition of new skills of the accounting staff. Online learning methods (SkyPreP, LearnUpon, ProProfs, LeapSome) and professional trainings on specialized accounting platforms, digital services (LumAPPs) that allow creating communication opportunities for teamwork and increasing the level of involvement of company personnel in concepts of sustainable development, corporate IT platforms for personnel management (LMS).

One of the key problems of modern information management is the cost of such management and the quality of information flows. According to the CDSB Standards Board (Climate Disclosure Standards Board), today the reporting of the world's leading companies that adhere to the concept of sustainable development lacks transparency,



accessibility, comparability and data quality (IFRS.com., n.d.; Priobrazhenskaya, V., 2019).

To solve this strategic task, the International Institute of Management Accountants (IMA) has developed a brief overview of the digital transformation of business reporting under the conditions of the fourth industrial revolution. This review provides useful recommendations for the development of a basic digital taxonomy to complement the European Corporate Sustainability Reporting Directive (CSRD). The directions for the implementation of this initiative in the near future should be: 1) increasing the level of digital literacy of specialists and users of financial and non-financial reporting; 2) creation of integrated online platforms of economic and non-economic data bases accessible to all users; 3) ensuring cyber security of corporate data; 4) use of information and communication technologies for data management, assessment of their quality and value.

At the current stage, the digitalization of accounting is only becoming more widespread, and its predominant products are specialized mobile services, spreadsheets, and digital reporting. At the same time, the International Auditing Standards Council (IFAS) today notes the following shortcomings of digital reporting:

- 1) significant costs for use;
- 2) inconsistency of methodological approaches and the general taxonomy of digital reporting, in particular, on sustainable development;
- 3) low level of integration into the system of a single digital reporting platform of financial structures (banks, stock exchanges that use reporting as a prerequisite for a company's admission to financial markets);
- 4) low general demand for digital reporting of companies;
- 5) the need for further closer cooperation and coordination of digital accounting and reporting with auditing and insurance companies (IFRS.com., n.d.);
- 6) the lack of development of specialized digital platforms, which today could fully satisfy the information technology needs of sustainable accounting and reporting.

At the same time, the latest trends in digitization of accounting, in particular, in the field of information and analytical support for sustainable management,

significantly expand the prospects of strategic accounting of the future (Varaniute, V., et al., 2022). Information and communication technologies form a powerful plane of advantages, allow accounting to achieve a fundamentally new result, improve accounting practice and audit, provide support for effective management decisions and manage a more reliable socially responsible business, which is necessary for current and future generations.

Digitization of accounting is an opportunity to intensify the processes of harmonization and unification of accounting and reporting, through which the national system is gradually moving today. The implementation of digital tools, which are united by the general global goal of achieving the goals of sustainable development, integrates the national accounting and reporting system into the global space, brings it closer to the leading practice of recording and using data, promotes the transformation of organizational management structures according to key trends and requirements of the global socio-economic community. The result of the digitization of accounting is not only the acceleration and facilitation of access to information flows, but also the improvement of management decision-making technologies, strategically oriented to the creation of strategic social values, which are a priority for the further development of most developed countries. Thus, digitalization of accounting is a flexible and effective mechanism for integrating the national economy into the global economic space, where global goals, objectives and tools for their achievement coincide.

Thus, the new technological structure encourages transformations in all spheres of socio-economic life, while also affecting the information and analytical support of management, with its key element – accounting. New tasks in the management of business entities contribute to the formation of specific requests that require appropriate accounting and analytical support. The conducted studies allow us to conclude that the field of accounting is one of the first in terms of global automation of management processes and the most promising from the point of view of further digitalization. The need of business and management for high-quality, complete and transparent information will only increase. At the same time, taking into account global trends and requirements, information requests in the field of opportunities and results

of sustainable management will grow, the timely satisfaction of which is possible only at the expense of sustainable accounting based on digitization. The formation of unified information and analytical platforms, the compilation of reports on sustainable business become the necessary analytical basis for achieving the goals of sustainable development both on a national and global scale. Digital accounting and reporting tools will form the necessary basis for the integration of participants in global processes of sustainable development, which will allow for the unification of national efforts and the solution of vital social tasks for the entire world to ensure a decent level of quality of life for current and future generations.

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**DIGITAL TRANSFORMATION TAKE EFFECT  
ON GREEN BUSINESS EFFECTIVENESS**

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In view of the ever-growing environmental issues and rapid digitalization of business, industrial ventures face an important mission of finding some balance between an advancement of existing business patterns based on digital technologies and a minimization of negative environmental consequences during their economic activity. Requirements of stakeholders for a high-quality transformation approach and introduction of information and communication technologies (ICT) for industrial ventures as well as the environmental friendliness approach used in their activities actualize the process of environmental friendliness mechanism based on the «green business» concept and a need to expand ICT in communication business management.

Works of G. Daley, O. Amosha, O. Baluyeva, M. Moiseyeva, M. Pashkevych, and O. Sadchenko are devoted to studies of economic and ecological systems of both a national and regional scope. The issues of enterprise management based on the ecological approach were developed in the scientific works of N. Andreeva, A. Bardas, O. Veklych, O. Popova, A. Sadekov, D. Smolennikov, S. Kharichkov, E. Khlobystov.

At the same time the issues of determining a degree of environmental friendliness of industrial enterprises and establishing the grain of their impact on an

external environment as well as the outcomes of economic activity of the entities still remain insufficiently developed in scientific literature.

Theoretical and methodological aspects of business process digitalization were enlightened in the works of such foreign scientists as: M. Blix, Ch.Gupta, H. Kroll, L. Hounshell, D. Horvat, A. Jäger, F. Bergeron, L. Raymond, A. Croteau, M. Brettel, N. Friederichsen, M. Keller, M. Rosenberg, K. Schwab, etc. The works of domestic scientists, in particular, V. Bozhkova, O. Volot, V. Kasyanenko, O. Kireva, K. Kovtunenko, O. Kopyyka, L. Melnyk, A. Orekhova, G. Pocheptsova, I. Sotnyk, K. Tanashchuk, L. Taranyuk, etc. are preoccupied with the researched domain.

At the same time the problems of ICT implementation in industrial enterprise management, development of approaches to substantiation and optimization of decision-making on digitalization of communication business processes, enhancement of organizational and economic principles of communication business management still remain unsolved.

Modern industrial production is one of significant sources of the anthropogenic impact on an environment. The influence of industrial factors has a decisive effect on transformation of the biosphere due to the presence of complex and diverse links between a human habitat and its productive activity.

Firstly, a natural environment is a global spatial basis, in limits and according to the terms of which any human activity takes place, including industry. Secondly, the properties of the natural environment in a considerable degree affect forming of a complex system of unreasonable requirements and requests of humanity to ensure safety, quality, durability, comfort of human existence, and thus, define the hierarchy of real emerging human needs (objective and subjective, social and individual) which require the satisfaction. Thirdly, the natural environment is the main source of resource support for human life, that is, a great storage of natural resources, the use of which is highly necessary for the society for satisfaction of continuously growing needs of its members. However, the global (in relation to the existing limits of the human habitat) character of existence of natural environment until about a middle of the past century determined the nature of the attitude of people to the state of the biosphere based on

the human needs. Under such conditions, the interests of society in the relations with the natural environment were usually limited to a strictly «consumer» orientation.

Until recently environmental management has been considered to be the process of natural resource exploitation for a merely pragmatic purpose of meeting material and cultural needs of a society. The rational use of natural resources presupposed reliance on reason and knowledge as the use of nature has been always considered as a separate science which studies general principles of any human activity related to the use of natural resources or transformation of their state [1; 2].

Interaction and structural binding of a society, industrial relations and the environment under the technogenic system «production – consumption» [3, p. 66] which operation is based on amere exploitation of natural factors (artificial disruption of a natural environment) are due to the complexity and diversity of the process of natural factor use in the process of productive human activity.

It is noted in scientific works [4-8] that the paradigm of social and economic development based on technocratic-consumer attitude to nature is the main reason for imminent destruction of the biosphere, ozone depletion, climate instability increase, flora and fauna impoverishment. According to Z. Gerasimchuk [9, p. 62] it is the growth of anthropogenic pressure on the biosphere in the process of social development that causes a sharp aggravation of the environmental situation on a global scale which brings humanity closer to a critical limit in interaction with nature.

Yu. Stadnytsky [10, p. 75] also believes that anthropogenic pollution is currently one of the main global pressing problems of human development around the world in general and Ukraine in particular. The negative effects of anthropogenic pollution which until the middle of the last century were often considered insignificant «external effects» and could be neglected while choosing the optimal technologies or trying to justify the economic development increase one of the greatest threats to human welfare and security. The author also insists that a reduction of anthropogenic pollution by a society is of almost no technological or technical difficulties. In his opinion the answer to this problem is a merely economic task the complexity of which is mainly due to the excessive cost of implementation measures to improve the environmental safety of



production. Therefore, under current conditions the maximum attention should be paid to the optimal use of limited resources that can be used for environmental purposes.

V. Scherbak [11, p. 51] in its turn supposes that the technological progress of mankind still consists of a series of use-depletion cycles of resources each of which involves sequential passing of certain stages:

- developing (creation) and expansion of the previously unused («non-existing») natural resource base;
- exhausting of the used natural resource base and the result making worse in terms of existence of society in an environment, the search for reserves to renew or replace the resource base;
- replacement of the outdated resource and environmental base by new sources of natural resources (and also occurrence of new, generally, more acute and complex environmental and resource problems).

Today environmental activity intensification for the sake of social and economic development is of great importance not only at the macro level but also at regional and business levels. Thus, according to L. Maslovskaya [12, p. 64] with a general orientation of the state strategy of transition to the principles of sustainable development the territorial regulation of ecological management acquires a special relevance. Regions become a kind of economic, social and ecological core of geo-economic space as well as the sphere of mobilization of material, labor, financial and intellectual resources for this purpose [13-19]. It is at the regional level that it becomes quite expedient and possible to achieve the balance of structure and production scale with the structure and magnitude of the integrated natural resource potential as well as environmental priority establishment for its use.

Scientific approach analysis for economic and environmental study of activities and patterns of development as well as ecological and economic development of industrial enterprises [20-21] allow to identify such components (varieties) for their realization as social-psychological, organizational-structural, technical, technological, financial, commercial, communicative, informational, functional.

According to some authors industrial enterprise development on the basis of the

concept of green business is its main environmental priority. At the turn of the new millennium there was a need for a new vision of a global environmental situation by the world community and an era of a «new responsibility» of all states for the earthly civilization safety. Former notions of «living for themselves», for the good of only their territories and peoples by limiting the interests of others have completely «played out».

Awareness of the environmental danger that threatens humanity has united the efforts of scientists, politicians and businessmen today to find a way out of this situation. Ecological balance preserving has become the main tendency in decision-making for the problems of environmental protection and business development. In 1987 the World Commission on Environment and Development established at the initiative of the UN General Assembly declared the problem of sustainable economic development and economic balance in their report «Our Common Future» as a general form of development and progress of the society. Meeting the needs of today's inhabitants of the Earth should not limit the ability of future generations for their existence. This means a transformation of human and financial resources as well as resources of animate and inanimate nature to meet reasonable needs of a man with a continuous improvement of his living conditions. Sustainable development requires new forms of financial cooperation and new ways of project financing. At the same time the «green industry» or «green sectors» of the economy are designed to materialize new sources of growth associated with an efficient use of natural resources and environmentally efficient technologies in ecological products and services and thus in added value and profits of companies engaged in these activities. Promoting their development and «greening» the traditional «brown» technologies and business models are central prerequisites of government strategies for the transition to a «greener» economy.

The global acceptance of technologies and methods that are less environmentally harmful has been recognized as vital for a further development of mankind and adoption and implementation of environmental standards, elimination of environmentally harmful subsidies for the resource use, energy and raw material price growth have stimulated a technological renewal aimed at its negative impact reduction

which became known as «green business» and companies began to be called «green businesses» or «environmentally conscious businesses». At the same time these processes have led to a dynamic and rapid growth in a number of companies offering goods and services that increase resource efficiency, improve waste management and minimize environmental damage. These ventures appeared in all sectors of the economy and later became known as the «environmental goods and service sector» or «green» business (WB).

The ideology of «green» business fits well with a need to improve an environment at the same time ensuring economic development. «Green» or environmental business is a diversified area of business that can provide not only environmental but also significant economic effect on a national scale. Being an economic agent a source of employment and a key factor in economic and social well-being this sector cannot remain unchanged. In order to solve the problems of today and to ensure economic development while maintaining a high level of environmental quality we stake on greening the industry.

Today green business offers decisions for some of society's most pressing environmental problems:

- the design and construction of energy efficient buildings;
- the recycling and safe waste management;
- the development of renewable energy;
- and the wastewater treatment [22].

The Ukraine's economic system remains environmentally unfavorable. Ukraine ranks one of the first places in the world in terms of consumption of natural resources – energy, water, minerals – per unit of GDP. Ukraine's water resources consist of surface and groundwater. Surface fresh water bodies of Ukraine cover 24,1 thousand km<sup>2</sup>, or 4,0 % of the total territory (603,7 thousand km<sup>2</sup>) of the state. These include rivers, lakes, reservoirs, ponds, canals and more. There are 3,3 thousand rivers longer than 10 km; their total length is 94,4 thousand km. The average density of the river network is 0,34 km / km<sup>2</sup>. Ukraine is one of the least water-supplied countries in Europe

as the reserves of local resources of a river runoff per person are about 1,0 thousand m<sup>3</sup> per year.

According to the State Agency of Water Resources of Ukraine the supply of Poltava region with an average long-term river runoff (per 1 km<sup>2</sup>) is 1788,2 thousand m<sup>3</sup> per year. Also, the discharge of return water into the surface water bodies of the region in 2017 amounted to 70 million m<sup>3</sup>. Thus, the main factor of anthropogenic pressure on surface water resources is still significant volumes of water consumption for economic activities and discharges of polluted waters [23]. Taking into account such an environmental situation it is advisable to conduct a research on enterprises engaged in the production and installation of nature treatment facilities.

We made the research for the Production Cooperative «Environmental Enterprise» «Ecology» (Kovpaka Street, 21; Poltava, [www.ecology.com.ua](http://www.ecology.com.ua)).

The environmental enterprise «Ecology» was established in 1990 to implement the latest domestic biotechnologies for domestic and industrial wastewater treatment. More than 400 facilities have been commissioned during the company's existence. The biological treatment technology developed by company's specialists was awarded with the State Prize of Ukraine in the field of science and technology. This patented technology formed the basis for creation of the «Dzherelo Wastewater Treatment Plant» that received a positive response from the Institute of Environmental Problems of the Ministry of Ecology and Natural Resources, the expert opinion from the State Labor Inspectorate and the hygienic opinion from the Ministry of Health of Ukraine.

The subject of activity of the PC EE «Ecology» is:

- the production of mobile block installations of biological water treatment of industrial and domestic sewage, their installation, adjustment, operation;
- the construction and installation works on maintenance and reconstruction of treatment facilities for biological treatment of domestic and industrial wastewater with the introduction of new biotechnologies;
- the engineering and technological development and implementation of new methods of biological treatment: industrial and domestic wastewater, reservoirs, rivers and bays; industrial gas emissions, soil and oil sludge and fuel oil pollution of

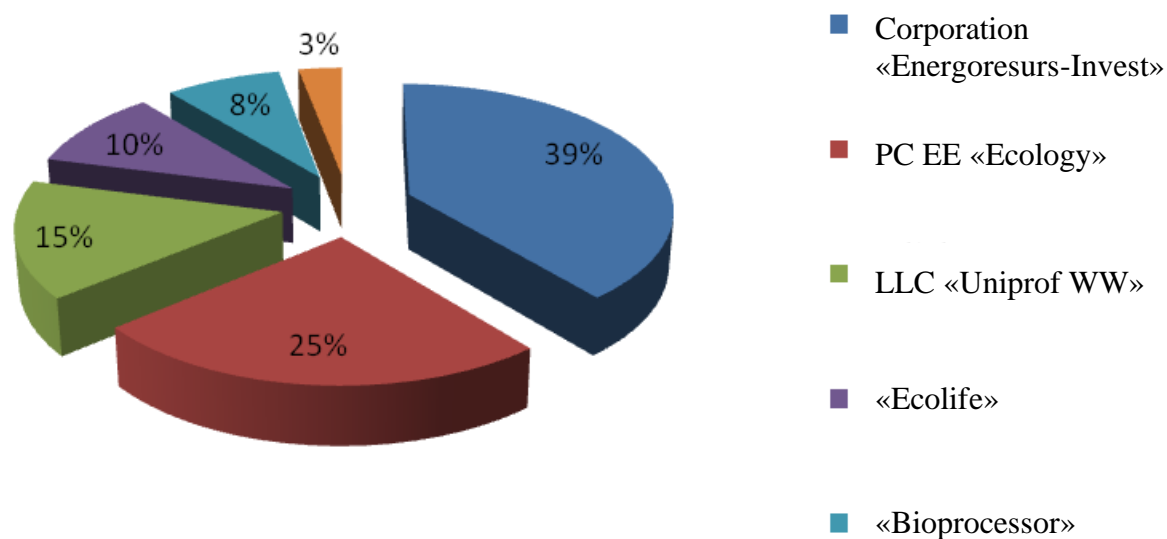
equipment and communications with slag;

- the design works performance of biological treatment facilities;
- the realization of projects and blueprints on biological sewage treatment for enterprises, organizations and the population;
- the consultancy on biological wastewater treatment and design solutions;
- the educational and methodical training of specialists in biological wastewater treatment.

PC EE «Ecology» is an official representative of Ekofinn-Pol (Poland) and WavinLabko (Finland) in Ukraine.

One of priority problems of PC EE «Ecology» which answer requires a special attention of state environmental authorities, scientists and entrepreneurs is the adoption and implementation of water protection measures aimed at improving the ecological condition of rivers.

The company occupies 25% of the domestic market of treatment facilities in terms of production. 39 % according to the results of our research is occupied by the Corporation «Energoresurs-Invest» (Lviv), 15 % – by LLC «Uniprof WW» (Lviv) (Fig. 1).



**Fig. 1. The structure of the water treatment facilities market in Ukraine**  
*Source:* Developed by the authors and based on the market research

It should be noted that water treatment and wastewater treatment technologies are the technologies of interest to scientific and business environment and the growth rate of both scientific publications and patent publications in many areas exceeds 400% and sometimes – 3000%.

At the same time Ukrainian priorities lack advanced world tendencies: digitalization of management, control and provision of services in the field of water supply and sewerage; computerization of water supply and drainage, etc. Therefore, it is desirable to add these areas to the list of Ukrainian sectoral priorities especially regarding water supply and sewerage digitalization and water purification from organic pollutants [24].

Digital transformation is an introduction of modern technologies into business processes of a venture. This approach implies not only installation of modern equipment or software but also the fundamental changes in approaches to management, corporate culture, external communications. As a result, a productivity of each employee and a level of customer satisfaction increase and a company gains the reputation of a progressive and modern organization.

The issue of digital transformation is quite difficult and wide by content, because the problems of technological development in one area motivate to the occurrence of problems in other areas. The first step to introduction and dissemination of digital technologies is needed realization of changes – of imperative caused of the imminent digital breakthrough, which allows the enterprise to improve its position in the market and significantly increase the value of innovative propositions [25].

Digitization of processes is relevant not only at the level of individual enterprises: entire industries choose their own path of development as the only way to meet rapidly changing conditions of the world. Due to this digital transformation of an industry is already changing the activities of every enterprise.

Customers are one of the main drivers of digitalization – many of them have already begun to transform their activities. By customer experience we mean not only interaction with foreign customers but also domestic customers. Digital transformation of processes optimizes the work of employees of a venture which increases the

productivity of each individual team member. Digitization technologies allow you to organize personalized interaction in the most favorable way preferred by a customer. Digital communication channels, omnichannel, artificial intelligence, robotics provide more time to solve really important and complex tasks.

Digitalization of business encourages innovative ways of a venture development, in particular:

1. Cloud technologies allow several teams to work on one project simultaneously and efficiently using the company's resources.

2. Using the Mobile First strategy companies receive and monetize mobile traffic which by its indicators has already caught up with the traffic of stationary devices.

Ready-made answers save time on tasks. Various programs, extensions and connectors optimize operation of a venture and require a minimal time for their implementation and adaptation.

In this regard the digitalization of water supply and sewerage namely the digitalization of installations and processes helps concerned companies to get the most of this process.

Thus, Siemens has developed Digital Enterprise – a comprehensive portfolio of software and automated solutions. All available data processing within the framework of a complex data model allows to use all system optimum potential.

Intellectual integration of data using a variety of sources such as sensors, water meters and meteorological data creates new opportunities for water use in industry. A prerequisite is end-to-end network organization of system engineering – from commissioning to operation, maintenance and optimization of a current process on the basis of a data platform – the integration of virtual and real worlds. An improved data quality and availability reduce project implementation time in the real world.

Thus, the requirements for domestic industrial ventures in the context of digitalization and globalization of world markets necessitate new effective decision-making for business digitalization (including «green business») to increase their competitiveness.

It should be noted that possible social-economic and ecological-economic

consequences of different priorities to production and consumption approaches of ecological products as well as a need for ecological regulation of production are illustrated by the matrix «benefits – losses» (Fig. 2).

If costs for environmental parameter up grading of a product quality increase in proportion to the level of environmental friendliness and, accordingly, the price increases the contradiction between the environmental and economic interests of a customer (consumer) and a manufacturer does not arise. In such a case a price does not encourage a manufacturer to improve quality. The demand for organic products is restrained.

In this case it is possible to set such a new price ( $P + \Delta P$ ) when a relative price increase is less than a relative increase in the level of environmental friendliness (quality)  $(\frac{\Delta E}{E})$  and is above a relative increase in cost  $(\frac{\Delta C}{C})$ .

The given approach can be represented as follows:

$$\frac{\Delta R}{R} \geq \frac{\Delta E}{E} > \frac{\Delta P}{P} > \frac{\Delta C}{C}, \quad (1)$$

where R is reduction of external environmental costs of production and consumption;

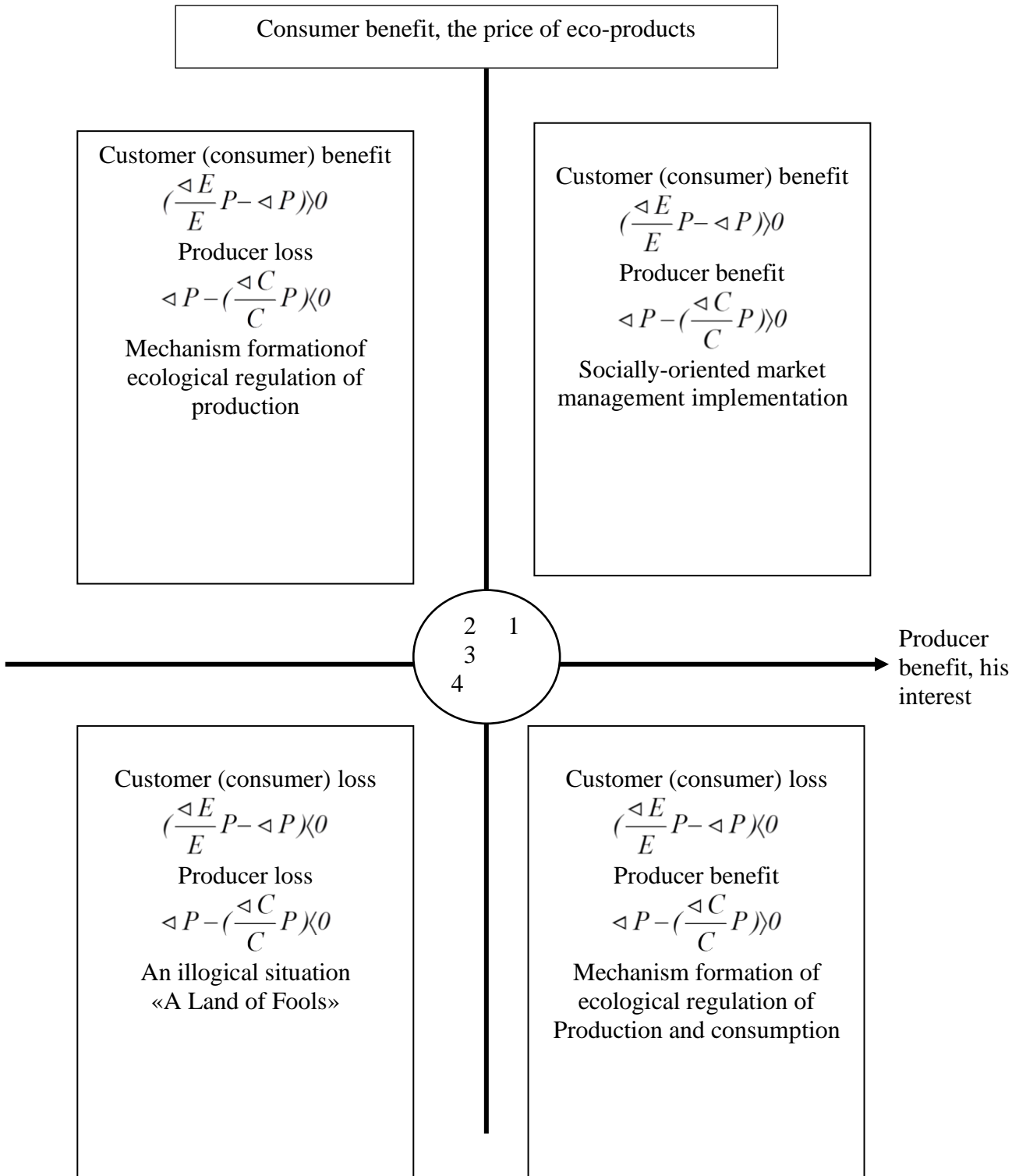
$\frac{\Delta \dot{I}}{\dot{I}}$  – a relative reduction of external environmental costs.

The given ratio between quality (environmental friendliness) of production, its price and expenses is the best from the point of view of social and ecological interests of both a society as a whole.

The price in this case stimulates an increase of ecological quality of production and an increase in demand for it. In accordance with the growth of environmental friendliness of new products, external environmental costs (environmental and economic damage) are reduced both for an consumer and a society as a whole.

Let's consider some conditions for economic and environmental interest coordination of a producer and a client (consumer). If a price for products of the high environmental quality for an individual consumer was specified in proportion to an increase in quality, i.e. if:





**Fig. 2. The matrix of ecological production «benefit-loss» of a producer and a client (consumer)**

*Source:* Developed by the authors on the basis of the «buyer-seller» matrix by Igor Ansoff [26, p. 84].

$$\frac{\Delta P}{P} = \frac{\Delta E}{E}, \text{ TO } \Delta P_e = \frac{\Delta E}{E} \cdot P,$$

where  $\Delta P_e$  is a price increase of an increase in ecological quality per value of  $\Delta E$ .

If a price for these products would be specified in proportion to the cost, i.e. if:

$$\frac{\Delta P_c}{\Delta P} = \frac{\Delta C}{C}, \text{ TO } \Delta P_c = \frac{\Delta C}{C} \cdot P,$$

where  $\Delta P_c$  is a price increase of an increase in costs per value of  $\Delta C$ .

The condition of interest coordination of an individual consumer and a producer looks like that:

$$\Delta P_e > \Delta P > \Delta P_c. \quad (2)$$

It is important to note that a manufacturer will benefit from:

$$\Delta P - \Delta P_c = \Delta P - \frac{\Delta C}{C} \cdot P, \quad (3)$$

and a consumer benefit will be as follows:

$$\Delta P_e - \Delta P = \frac{\Delta E}{E} \cdot P - \Delta P. \quad (4)$$

The total benefit of both a producer and a client (consumer) is determined by value of:

$$\Delta P_e - \Delta P_c = \left( \frac{\Delta E}{E} - \frac{\Delta C}{C} \right) \cdot P. \quad (5)$$

The amount of this total benefit can be divided into three parts: the benefit of an individual consumer, the benefit of a producer (a venture) and the benefit of a society (in particular, a state) as a whole.

Let us now consider in more detail a substantive basis of the quadrants of the matrix. Quadrant 1 «Customer (consumer) benefit, producer benefit» meets the principles of socially-oriented market economy and sustainable social-economic development and also reflects the system of long-term mutually beneficial relations «buyer – producer» as it is provided as a return on investment and satisfaction of social and ecological needs of a buyer within reasonable prices.

Quadrant 2 «Customer (buyer) benefit, producer loss» corresponds to the situation when external environmental costs of production, the lack of a positive effect assessment of production and consumption of organic products become the subject of environmental regulation of production from the standpoint of ecology friendliness stimulation of a single venture.

Quadrant 3 «Customer (consumer) loss, producer loss» corresponds to the situation which in the terminology of I. Ansoff is called «A Land of Fools» [26].

Quadrant 4 «Customer (consumer) loss, producer benefit» reflects the case when a producer receives some profit from sales but does not provide a consumer with a product which level of environmental quality would correspond to the price. This situation often occurs in industries with a low level of technological development.

However, such a situation may occur in the production of new goods in highly developed industries based on innovative technologies when interests of a buyer are not always taken into account.

Thus, the conceptual approach to ecological and economic development of an industrial enterprise taking into account the green business concept has been formulated on the basis of available theoretical support analysis. In accordance with the modern realities aimed at natural and economic resource use it has been determined that increasing the ecology friendly economic activity we ensure both effectiveness of environmental and economic activities of an enterprise and the program implementation of environmental and economic development of a region.

Digital transformation approach enables an accelerated adaptation of communication business processes of industrial enterprises to the challenges of an external environment making easier the work of a user, the quick response to customer (consumer) requests and an increase in productivity of all business processes of industrial enterprises.

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**DIGITALIZATION OF THE INNOVATIVE DEVELOPMENT  
MANAGEMENT INFORMATION SERVICE OF THE ENTERPRISE**

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Active processes of digitization of social life have a significant impact on the development of economic relations and, accordingly, require changes in traditional approaches to managing the development of modern business. The global data network, information platforms, mobile and social networks are already used today not only to meet the needs of communication, but also to solve economic tasks and successful business management.

Due to the transformational digital changes and the need for rapid adaptation of business to modern conditions, effective management of the development of the enterprise on an innovative basis is considered a priority. The effectiveness of this complex intellectual and creative process related to decision-making to achieve the desired parameters of development is determined by the availability of relevant information and innovative tools for obtaining it. Information should be objective, reliable, understandable, complete and useful for making effective management decisions. Due to this, the requirements for the efficiency of formation, sufficiency, quality of recording and analytical processing of data of the accounting information

system, their further use in analysis and management are increased. Therefore, digitization of the formation of a high-quality information service for the management of innovative development of the enterprise, focused on ensuring the search for opportunities to improve the results of economic activity and satisfying the information requests of management at all levels at all stages of the process of development, adoption and control of the implementation of management decisions, is currently relevant.

The scientific basis for the solution of the specified problem is formed by the works of leading foreign and domestic scientists of our time (Gogol T.A., 2014; Zagorodniy A.G., 2012; Kalnytska I.V., 2014; Savchuk V.K., 2013; Chumak O.V., 2019), dedicated to digitalization, location identification and the role of information support in the management of a modern enterprise, the study of theoretical, methodological and organizational aspects of the functioning of the accounting and analytical component in its composition. Without diminishing the role of previous developments, the issue of digitization of the formation of an information service for the management of innovative development of the enterprise requires further in-depth research.

The concept of forming an information service system for managing the innovative development of trade and its digitalization is related to the determination of the most effective methods of forming information arrays, establishing channels of information interaction and optimizing information flows in the management process. In this context, we consider an integrated approach to the formation of accounting and analytical information of a financial and non-financial nature and its accumulation in a single circuit of the information service system for managing the innovative development of the enterprise (SISMIDE) to be the most promising in this context. Such "information unites management, people, processes, technologies, which are considered as a single system, and not only as separate elements.

As a result of interaction in the system, a new quality arises that is not characteristic of any element of the system separately, but is characteristic of the entire system - an integral effect" (Kalnytska I.V., 2013). Regarding the service of



information and analytical management support, this is information that allows you to combine in a single spatial-communicative and socio-cultural space various types of data on the economic activity of trade enterprises, to realize the interests of internal and external stakeholders in the information space by focusing their information requests and formation of relevant information resources in the form of relational databases, which will replace traditional information used in trade enterprises to make decisions related to increasing the efficiency of their functioning and sustainable development.

"Information service must be considered as a triad consisting of information, analytics and service, the task of which, using the available information, to identify the reasons for the undesirable development of the process/situation and, synthesizing the results of the analytical assessment, to determine the appropriate directions for solving the problem and to convey the possible options in the most acceptable form management solutions to users, that is, to create a high-quality service. Information and analytical service is a multifaceted concept. It can be considered as a separate whole, formed under the influence of many philosophical theories, the main of which are the theories of reflection, cognition and development. These theories do not contradict each other, but complement each other, developing different quantitative and qualitative characteristics related to this or that part of the management process. At the same time, the information and analytical service becomes more productive due to the synthesis of these theories" (Savchuk V.K., 2013).

The main idea of the concept of digitalization of the formation of SISMIDE is formulated as the modeling of a single information space, oriented to the maximum satisfaction of users' information requests, based on a certain scientific and applied platform. The latter integrates the scientific and theoretical-methodological basis that specifies the object, subject, subjects, purpose, tasks, functions, principles and components of the management information support system and their functionality.

The scientific basis for the development and implementation of SISMIDE is the dominant scientific paradigm of creating accounting and analytical information for management and the concept of information space modeling and ensuring the effectiveness of management functions and its information support functions when

solving tactical and strategic tasks. At the same time, the determining prerequisite for the effectiveness of its formation is the determination of the information needs of management, which reflect the strategy and options for achieving the target parameters of the development of the trade enterprise (identification in quantitative and qualitative dimensions), their implementation and integration into the process of systematization of accounting and analytical information and the development of the feedback mechanism connection, which indicates the degree of satisfaction of information users.

It should be noted that the more precisely and completely the information requests of management subjects are defined, the higher the quality of accounting and analytical information will be. Its value for the management of a trading enterprise is determined by such qualitative characteristics of accounting and analytical information as: relevance, comprehensibility, efficiency, timeliness, reliability, credibility, comparability, completeness, usefulness, effectiveness, optimality, regularity, appropriateness. The relevance of information is considered on the syntactic, semantic and pragmatic levels, and is implemented through predictability functions, feedback properties and timeliness. The timeliness of accounting and analytical information depends on the inertia of the integrated accounting and analytical system. The reliability of accounting and analytical information for management purposes is to a certain extent achieved by data verification, representative reliability, neutrality, which is due to the non-additive dimension and inertia of the accounting and analytical system. The reliability of accounting and analytical information is characterized by its accuracy, which is acceptable and sufficient for making an effective management decision. At the same time, the degree of detail of the information should correspond to the maximum extent to the real state of the managed object, which it expresses. Comparability of accounting and analytical information for management purposes is that it should be comparable with information of other organizations preceding reporting periods, etc. The completeness of accounting and analytical information is ensured by such properties of the integrated accounting and analytical system as: emergence, non-additivity, synergy, dimensionality, inertia. Effectiveness of accounting and analytical information (information should provide action and be sent

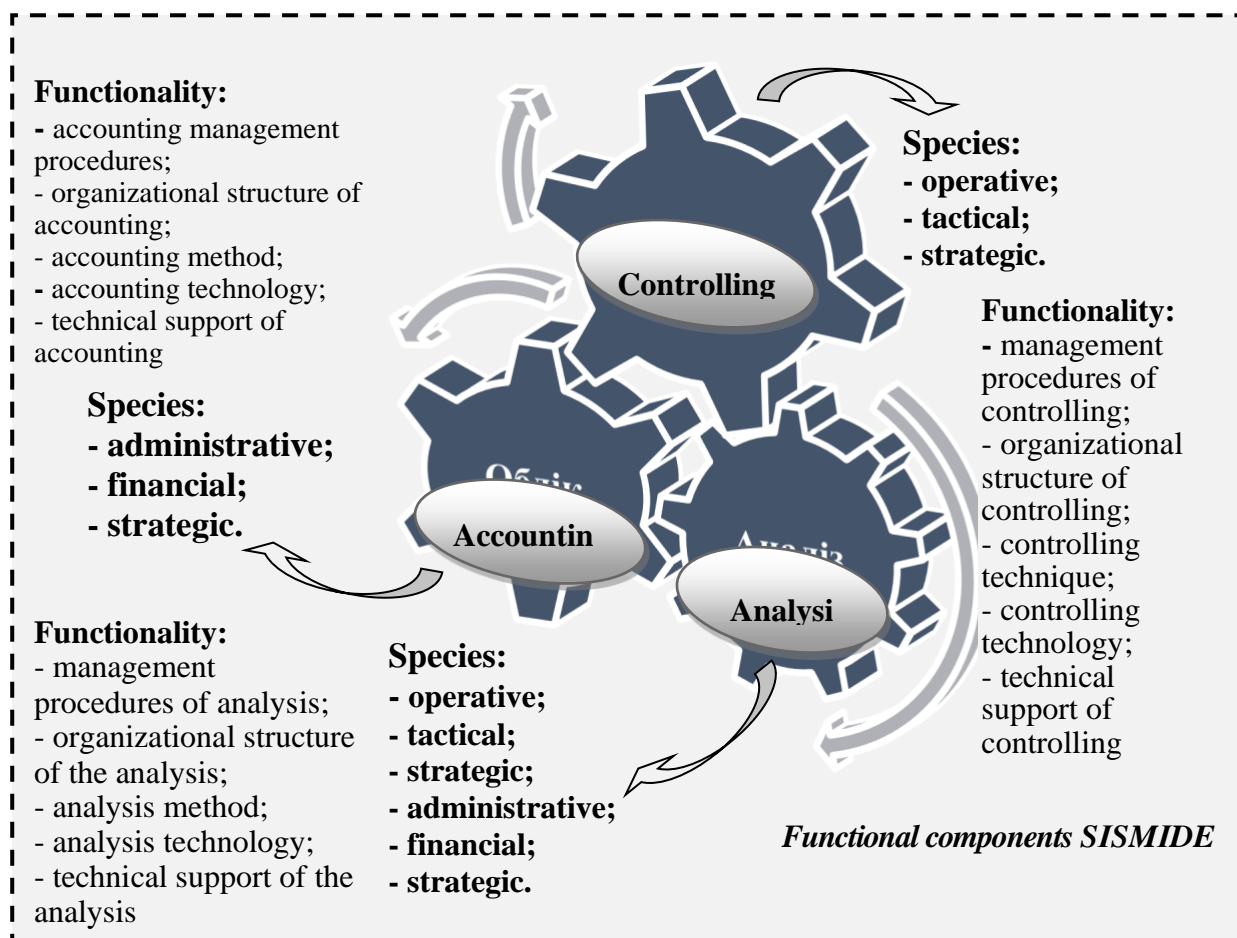
to management subjects who will take measures based on this information), its optimality (information should be simple in form, not too cumbersome or limited) and regularity (information should be supplied systematically and to the extent necessary for management purposes) depend on the size and rationality of the integrated accounting and analytical system (Kalnytska I.V. 2014; Kriukova I.O., 2021) ). An effective tool for realizing the possibility of forming information arrays of accounting and analytical data of a relevant nature is the use of modern technologies for modeling the process of obtaining them, in particular, accounting engineering (Table 1) (Kashchena N.B., 2021).

**Table 1 – Instrumental profile of accounting engineering**

Components	Characteristic
Accounting engineering tools	Financial balance sheets, derivative financial statements, reengineering of business processes, interactive methods of financial calculations, balanced estimated statement, estimated statement of intellectual capital, estimated statement of net liabilities, capital, zero balances.
Technologies of accounting engineering procedures	Initial operator, adjusting transactions, adjusted balance, economic transactions, specific intermediate, alternative, hypothetical transactions, hypothetical final operator, control transactions.
Accounting and analytical support of engineering	Aggregated postings, structured chart of accounts, qualitative components, means of automating accounting and analytical processes, evaluation systems, algorithms, drivers, accounting and control points, accounting aggregates.
Managed objects and processes	General management, ownership, reservation system, risks, innovations, financial results, reorganization, financial condition.
Results of using accounting engineering tools	Summarizing indicators by functional areas of economic activity and various types of value in accordance with the requests of customers of the analysis, management alternative methods of solving current problems, information support for decision-making, control, automation of accounting and analytical support.

The accounting engineering toolkit allows to improve the accounting and analytical processes and, based on the information requests of the management staff, to develop the content of accounting and analytical data for the justification, development, implementation and control of the implementation of the decisions (Kashchena N.B., 2021). The effectiveness of SISMIDE functioning is determined by compliance with the principles that establish the rules of action and behavior for subjects of accounting, analytical and management processes, contribute to their agreement, coordination and regulation in order to increase the efficiency of accounting, analytical, controlling and management procedures, which in the complex increase the quality of information support making and implementing management decisions. The package of such principles includes the principles of target orientation, systematicity, timeliness, flexibility, continuity, coordination, unity, optimality, relevance and reliability, scientificity, efficiency and effectiveness.

The system of information and analytical service management of a trade enterprise, built in accordance with defined principles, is focused on the performance of information, accounting, analytical, controlling and corrective functions (Benko M.M., et al., 2022; Vysochan O.S., et al., 2020). The implementation of these functions is ensured by the integration of the functions of the corresponding components of the system of information and analytical service management of the activities of trade enterprises, namely, accounting, analysis and controlling, which are independent integrated systems aimed at satisfying the information requests of information users during the development of operational, tactical and strategic decisions on all levels of management, and are characterized by their inherent management procedures, methods, technologies and technical support (fig. 1).



**Fig. 1. Profile of functional components system of information service management of innovative development of the enterprise (SISMIDE)**

The effectiveness of the applied implementation of the concept of creating a single information space for managing the innovative development of the enterprise depends on the effectiveness of the mechanism of its implementation, and is determined by the chosen technology of digitalization of business, accounting-analytical and controlling processes, support systems, tools and levers of managerial influence, which in a single complex ensure formation in the mode real-time information arrays and contribute to the constructive information-communication interaction of the object and the subject at all levels of management .

The implementation of this mechanism consists in ensuring the prerequisites for the functioning of SISMIDE through the elaboration of the regulatory and legal

framework, on the basis of which the accounting policy, regulations and standards of analysis and controlling are formed. After that, a key concept of accounting is built through accounting engineering, based on standardized operations, which allow to implement their template and automate accounting and analytical processes.

Methodological and organizational provisions for the implementation of calculation-analytical and control procedures, as well as technologies for their implementation, are also substantiated. The result of their implementation is accounting and analytical information, which is used to make management decisions and control their implementation in order to timely identify the causes and eliminate the negative consequences of changes in the results of the trading enterprise.

The above-mentioned components of SISMIDE form a scientific and applied platform on the basis of which a model of the concept of creating such a system at a trading company was developed.

The presented concept of SISMIDE formation presents the importance of the unity of scientific, theoretical, methodological and practical bases, and determines the expediency of its formation based on:

- information requests from users, taking into account the specifics of trade enterprises in modern business conditions (traditional formats for the sale of goods; sale of goods via the Internet), which will determine the individual nature of information flows in the subsystems of accounting, analysis and controlling, and, in fact, in the SISMIDE itself, which must be taken into account when improving methodological approaches for the development of accounting, analytical and controlling support systems, as well as making operational, tactical and strategic decisions and monitoring their implementation;

- the need to take into account the influence of philosophical (activity, management, information, reflection, cognition, development) and branch (accounting and reporting, analysis, controlling) theories and the availability of high-quality regulatory, organizational, methodological and technical support for the process of its formation and development;

- the expediency of integrating accounting, analytical and controlling components into a single information management circuit, which will allow for the generation, accumulation and transmission of relevant information in real time for decision-making on achieving the target parameters of the innovative development of the enterprise;

- the urgent need to use innovative tools for collecting, systematizing, accumulating, processing and storing financial and non-financial data about the business environment, performance results, prospects for socio-ecological and economic development, etc., which allow in real time to provide the necessary information for making management decisions.

Increasing the level of efficiency, reliability and completeness of the formation of accounting and analytical information will be facilitated by the integration into the information service system of managing the innovative development of the latest tools that take into account the latest trends and achievements of modern digital technologies, in particular such as cloud technologies and computing (Cloud technologies and computing), big data (Big Data), blockchain (Blockchain), artificial intelligence (Artificial intelligence), etc. (Table 2).

Their use through the processing of large data sets, the transformation of unstructured and heterogeneous information into relevant information for the formation of financial and non-financial reporting, the transfer of information in real time to interested persons, the direct registration of transactions in the unified register, etc., in turn, will allow to optimize work and increase the effectiveness of the information service for managing the innovative development of a trade enterprise.

In addition to the mentioned innovative technologies, with the aim of forming a single information field of relevant data, it is also possible to implement technologies of proximity, contactless identification of information, such as card, biometric technologies, barcode technologies, radio frequency identification, voice data input, machine vision, in particular QR codes and devices for their reading" (Dibrova T.H., et al.).

**Table 2 – Digital innovations of the information service for managing the innovative development of the enterprise**

№	Digital technologies	Characteristic	Opportunities
1	Cloud technologies and computing (Cloud technologies and computing)	A set of interconnected technologies make up a single complex of data processing and provide for permanent storage of information on servers on the Internet with its caching on personal computers or gadgets	They form the prerequisites for safe and reliable storage of economic information, allow you to have constant unlimited guaranteed access to all financial data and become a tool for business competitiveness
2	Big data (Big Data)	A set of software and hardware methods, methods and means (computer programs) that implement one or more cognitive functions equivalent to the corresponding human cognitive functions	They ensure the efficiency of the formation of reporting indicators based on an unlimited wide set of grouping features and factor criteria, as well as high speed, increased accuracy and practically unlimited possibilities of analytical data processing, which allows you to identify hidden patterns and use them to increase efficiency
3	Blockchain (Blockchain)	Multi-functional and multi-level information technology, which is a distributed data registry for storing information about each transaction made in a closed peer-to-peer system of users	Allows localization of information data for storage in the information service system with the aim of providing secure access to it to authorized users, which contributes to the formation of an information field of relevant data for obtaining and further evaluation by stakeholders (management, auditors, counterparties, etc.)
4	Artificial Intelligence (Artificial intelligence)	An intelligent computer system that is endowed with speech recognition, learning and problem solving capabilities	It is focused on solving the tasks of strategic management and their corresponding accounting and analytical support. Allows, thanks to the application of econometric models, to build forecasts and scenarios of the development of events, to transform and generalize an array of unstructured data into useful information, to adjust management actions taking into account changing economic conditions

*Source: developed based on [8, 9, 10]*

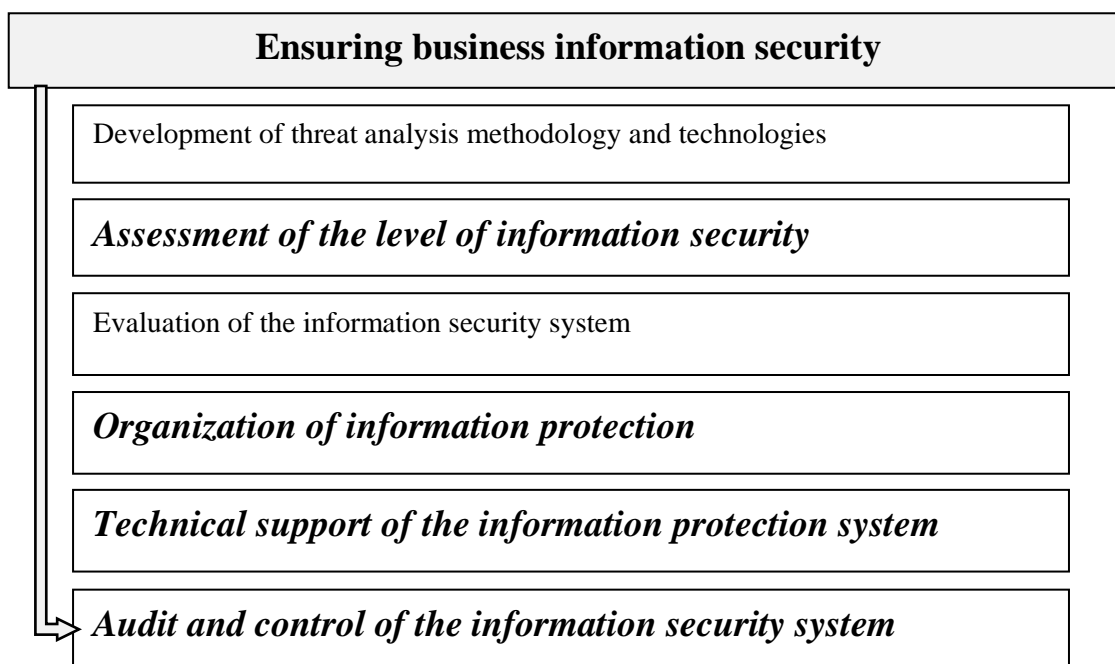


QR codes are a simple, convenient and interactive way to distribute and receive information. The advantages of QR codes include: the ability to store large amounts of coded digital and textual information in any language; quick access to coded information using scanning and recognition by modern digital devices; the printing size of the code can be quite small, but at the same time it is characterized by the possibility of reading in any direction (omnidirectional or 360° scanning); almost any surface is suitable for placement, which is also quite important; damage resistance, that is, even if part of the code is damaged (up to 30%), it can still be read. Regarding the disadvantages, the following can be highlighted: low level of awareness of QR-coding technologies (rather insignificant degree of audience coverage); technical problems (for example, incorrectly installed device on a mobile device, etc.).

Along with the subsystems of data generation and storage, the most important element of the information service system for managing the innovative development of the enterprise is the information protection subsystem, which is the area of responsibility of the relevant group and defines the limits of access to information. Usually, the limits of access are ensured by the protection of information in the mode of commercial secrecy - taking measures for its secret use. According to the general rules, commercial secrets are included in those summaries that are of interest to the business. The regime of commercial secrecy is determined by legislation (Kovalevska N., et al., 2022). The main aspects of information security are integrity, availability, confidentiality, and the principle of work of the information protection group is to establish a balance between ensuring economic benefit and maintaining economic security. Some commercial information should remain open. Basically, this is information of an advertising nature, related to manufactured products and services, trademarks, etc. Hiding such information can lead to the loss of markets, consumers, and most importantly, profits.

The creation of an information protection subsystem requires a systematic approach and the implementation of a number of legal, organizational, economic and technological measures, coordinated interaction of specialists in relevant fields of knowledge for the formation of effective data protection mechanisms. The technology

for solving system tasks of ensuring information security should include: development of the methodology and technologies of threat analysis, assessment of the level of information security and the system of its provision; organization and implementation of specific types of information protection activities; operation of technical means of information protection; audit and control of the operation of the information security system of the enterprise (Fig. 3).



**Fig. 1. Technology for ensuring information security of the information service system for managing the innovative development of the enterprise**

*Source: developed by the authors*

Modern data protection technologies are based on the application of the latest methods that prevent information leakage and loss, namely: obstruction, masking, regulation, management, coercion, inducement. All of them are aimed at building an effective information protection technology, in which costs due to negligence are excluded and various types of threats are successfully reflected (Kovalevska N., et al., 2021).

In order to maintain business, develop and be competitive, business entities must not only create an effective subsystem of information protection in the information

service system of managing the innovative development of the enterprise, but also ensure the digital efficiency and reliability of the latter. The value, digital efficiency, quality and reliability of the information service system for managing the innovative development of a trade enterprise are, a priori, related to the efficiency of managing business information, applications and IT infrastructure.

Create the optimal value of information and technologies, maintaining a balance between benefits and optimizing the levels of risk and use of resources, possible under the conditions of alignment of IT goals with the strategic goals of the enterprise, as well as the application of the latest developments in the field of corporate management. Specifically, those that can optimize the structure and provide the tools needed to ensure trust and value, manage risk, avoid potential embarrassment and maximize business opportunities.

To increase the efficiency and effectiveness of business information management, it is considered appropriate to use COBIT 5 practical methods in combination with BiSL. COBIT orients enterprises to strict management and management of processes and other factors affecting the demand, supply and use of information and technologies. In essence, this framework provides a detailed guide to ensure economic benefits, optimize risks and resources. BiSL provides a detailed guide to the content of processes related to the demand and use of information and technology. Regarding the implementation of activities, COBIT focuses on the leadership and management of activities, while BiSL focuses on the management and content of these activities. That is why COBIT and BiSL can be considered as complementary frameworks that enable the digital efficiency of the business management information service system.

So, in the conditions of the digital transformation of the economy, practically no business entity can exist without the services of the information service system for the management of innovative development. This system is, on the one hand, a combination of software, technical means, personnel and information technologies for the creation of information products, and on the other hand, a set of services and products provided to users, and requires constant updating, taking into account

changing external and internal factors and the latest innovations in the IT sphere. Digital efficiency and data security of the information service system of the management of innovative development are ensured by the use of COBIT 5 practical methods in combination with BiSL.

The above proves that digitization is not just a trend, but an integral tool for building an information society, which through the integration of digital technologies in all spheres of life ensures the transition of business from the real world to the virtual world, its efficiency and further sustainable development, taking into account changes in the business environment and interests of all interested parties. In response to the urgent challenges of the new reality, domestic business is forced to make quick decisions and successfully apply modern technologies and tools for building a unified information space, ensuring its reliability, stability and security. An objective assessment of the surrounding reality and an in-depth assessment of the effectiveness of business processes are possible only with the timely receipt of information and the expansion of the range of available relevant data of the information service system for managing the innovative development of the enterprise. The implementation of the scientific basis and theoretical and methodological provisions of the formation of the information service system for managing the innovative development of the enterprise (object, subject, subject, principles, purpose, tasks, functions, components, support systems) are implemented through the applied nature of the developed mechanism and provide a comprehensive solution problems of information support for making management decisions regarding the functioning and development of a trade enterprise (Kashchena N. et al., 2022). Increasing the efficiency of the latter is ensured by improving the methodological provisions of accounting, analysis and controlling of economic activity and the potential of its development from digital innovations. The synthesis of innovations in business process management, digital and IT technologies brings management services to a fundamentally new organizational and technological level and contributes to increasing the effectiveness of business activities as a whole.

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**INNOVATIVE STRATEGIES AND PRACTICES OF DIGITAL  
MANAGEMENT SYSTEMS FOR BUSINESS**

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The peculiarities of the formation of the gross national product and the shift in the sectors of the country's economy require a rethinking of the historically formed prerequisites of industry segmentation. One of the identified areas is the understanding of the agrarian sphere as a sphere of agro-industrial production. This is connected, first of all, with the facts that, at present, the subjects of the agribusiness sphere are already more in line with the main characteristics inherent in industry, in particular, the renewability of the means of production. So, even without taking into account the processing enterprises in the agrarian sphere, it is necessary to single out agricultural enterprises that have formed on their base the opportunities and capacities for introducing, at a minimum, primary processing and, even, in some cases, in-depth processing of agricultural raw materials for a more effective output both domestic and



international markets. Thus, the involvement in agricultural production of technical and technological support for own processing of agricultural raw materials defines this sector as agro-industrial production, which should be fully attributed to the modern industry of the country.

At the same time, the obtained shifts call for the need to reengineer modern management models of agro-industrial enterprises, especially in the field of management.

It should be noted that the conceptual-categorical apparatus of studies of the theoretical content of management is almost completely revealed and formed. However, not a single agro-industrial enterprise, not taking into account holding-type associations, does not sufficiently apply the tools of strategic management of competitiveness in its practice and does not actually use formalized management structures in its organizational and management practice. At the same time, the vast majority of managers of domestic enterprises do not at all understand the essence, features and importance of integrating elements and tools of activity management into enterprise management systems, and, therefore, do not consider it necessary to use the opportunities to increase the level of competitiveness of their enterprises in the commercial sphere, focusing the main attention on creating competitive advantages at the production stage of the cycle of creation and sale of products [1-3].

This limitation of measures to manage the competitiveness of agricultural enterprises and their products leads to the predominant use of tools for reducing production costs when creating sustainable competitive advantages of a price nature. The latter negatively affects the level of income received by commodity-producing enterprises, respectively, the level of economic efficiency, investment attractiveness, deprives subjects of the agrarian sphere of financial resources for stabilization of development. This is the essence of the scientific problem of the development of strategic management in the field of management in agro-industrial enterprises in the context of ensuring their competitive development on the basis of modern theories.

In our opinion, precisely because of the adaptation of the main tools of the management complex from a theoretical basis to practical actions, the agro-industrial

sphere may not only be able to increase the level of competitiveness of enterprises, but also generally improve the results of their production and economic activities for the long term. Therefore, the study of the essence and features of the introduction of agro-industrial management in the activity of agro-industrial enterprises should be based precisely on the formation of the content of the defined toolkit. Moreover, taking into account the results obtained in this area, it should be noted that the majority of management research is an adaptation of the modern general theory of management to the conditions of agro-industrial production, which is not always effective [4-5].

Therefore, the concept of introducing agro-industrial management, in our opinion, should be based on the understanding of management as a type of system for managing the production and sales activities of agribusiness entities, which is based on the use of basic management tools (product, price, communication and sales policies) as a single of the complex. The result of the formation of this system is the determination of the business entity's activities in accordance with the constant changes in the market environment; market behavior tactics in order to maintain the necessary market share and other effective indicators of production and commercial activity; strategies for ensuring the competitive development of subjects in the production sphere of the agrarian market. In addition, the meaningful content of the defined management toolkit needs to be updated not due to the expansion of its theoretical essence with further adaptation to the conditions of agricultural production, but taking into account, first of all, the possibilities of practical application in the activities of agricultural commodity producers, which constitutes the basic level of reengineering of the management of activities in the field of agro-industrial production.

Among the existing management models for obtaining competitive advantages of business entities, special attention is currently paid to B2C and B2B. The peculiarities of the application of the B2B (Business to business) system in the general sense is the organization of closed-type sales, the purpose of which is the formation of large product batches for a small number of consumers, while the B2C (Business to customer) system is, on the contrary, the attraction of a significant number of consumers with the smallest volume of the product batch. The specified models have

their advantages and disadvantages, and from a scientific point of view they can be adapted for any field of production. It should be noted that there are examples of their use in the agricultural sector as well [7-10].

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It was determined that the formation and reengineering of the management of B2B strategies in agro-industrial production has its own specifics, so the following areas can be distinguished. Thus, the first group includes agro-industrial enterprises engaged in the sale of products only to other agribusiness subjects. These are mostly products of the agro-raw material segment. The second group includes agro-industrial enterprises that operate in the agro-food and industrial markets. Their product policy is formed from products of primary processing for sales opportunities to end consumers - as enterprises engaged in deeper processing and the population. The third group is formed by agribusiness entities that sell their products only on the consumer market (which is also a separate segment of the agri-food market). They include personal (peasant) and farms.

It is proposed to apply only a modified (simplified) management model of B2B competitive advantage formation for the conditions of operation of agro-industrial production, in general, and for agribusiness subjects, in particular. Why use models for the first group of agro-industrial enterprises, which are the object of this study. The peculiarity of the agrarian market (not the agri-food segment, namely the raw material segment) makes it possible to carry out purchase and sale processes only between product manufacturers and other subjects of the business sphere (intermediary organizations, exporters and processing enterprises), in which the goods are agricultural raw materials that are not suitable for final consumption without additional processing.

The formation and re-engineering of strategy management should take place according to the scenario of using the defined tools of activity management through the involvement of 4R. That is, this strategy will include the principles of combining product, price, communication and sales policies of an agricultural enterprise, which, in turn, should be determined not through the adaptation of all existing theoretical provisions, but formed separately for the conditions and features of agro-industrial production.

The main characteristics of the implementation of commodity policy for agro-industrial management include the following:

- the assortment of goods in an agro-industrial enterprise is formed simultaneously taking into account the production capabilities (capacity) of the economic entity and the results of an analytical study of the situation of selected segments of the object market;

- the formation of the product batch should take place in accordance with the features of using the B2B management strategy of the first defined group of agro-industrial enterprises, i.e. the size of the product batch should correspond to the requests, first of all, of exporters;

- the use of the most effective management approach – offering goods with reinforcement (showing personal attention to buyers, forming homogeneous product

batches according to quality and other sets of consumer properties, providing improved conditions for transportation and delivery of product batches) [11-13].

At the same time, the involvement of such theoretical provisions of marketing theory as understanding the stages of the formation of new goods, determining the market attributes of goods, evaluating the life cycle of goods, forecasting based on the latter and other such tools, is not possible for use in the agricultural sector (the raw material segment of the agricultural market) due to a number of objective factors.

The formation of the price policy of agro-industrial management in the conditions of activity of agro-industrial enterprises will have the following form, taking into account the peculiarities of the industry:

- pricing is free (market), i.e. prices are formed in selected segments of the object market under the influence of the economic situation, regardless of state bodies, especially when entering international markets;

- the price policy of the business entity must correspond to the type of market, in particular, the market of agro-industrial products is in most cases close to oligopsony or monopsony;

- the main approach to price formation for goods of the raw segment of the selected object market should be the "costs + necessary profit" method;

- the most successful price strategies of agro-industrial enterprises when implementing management are separate strategies of differentiated prices, which are formed taking into account the specifics of export.

Thus, the existing situation regarding the formation of the price policy of agro-industrial enterprises allows the most successful use of precisely differentiated prices, the purpose of which is to increase sales volumes for exporters, thereby reducing volumes for intermediary organizations. In particular, the following should become basic:

- a strategy of discount prices, which will allow to attract more buyers through temporary measures of seasonal price fluctuations for regular customers and price reduction depending on the increase in product lots;

- the strategy of flexible and elastic prices, which provides for price changes depending on the capabilities of buyers, which will contribute to mutually beneficial and long-term cooperation with consumers of these products, who are also in the conditions of constant financial conditions of their activities;

- a strategy of mass prices, the effect of which can be obtained through the formation of the largest product batches for one buyer [14-15].

At the same time, it should be noted that the use of better-known price management strategies (high price strategies, low price strategies) is ineffective for agro-industrial enterprises. This is due to the following features. Thus, the strategy of high prices involves the sale of goods initially at high prices with a gradual decrease, which is more characteristic of new goods. In agro-industrial production, the products offered for the market are not such. It is also necessary to take into account the moment of seasonal price fluctuations, which, for example, in the field of crop production, is proven by many years of experience of setting the lowest prices during the harvest period, that is, at the beginning of the management year, and the highest - in March-May. The strategy of low prices is based on the initial formation of the lowest prices with their gradual increase. However, in the conditions of agro-industrial production, the first sales should provide an influx of financial resources to ensure further simple or extended reproduction. Therefore, strategic management at enterprises using these pricing methods is unacceptable.

Therefore, the concept of introducing agro-industrial management, in our opinion, should be based on the understanding of management as a type of system for managing the production and sales activities of agribusiness entities, which is based on the use of basic management tools (product, price, communication and sales policies) as a single of the complex. The result of the formation of this system is the determination of the business entity's activities in accordance with the constant changes in the market environment; market behavior tactics in order to maintain the necessary market share and other effective indicators of production and commercial activity; strategies for ensuring the competitive development of subjects in the production sphere of the agrarian market. In addition, the meaningful content of the defined

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The communication policy for the conditions of functioning of agricultural commodity producers is very conditional, which is caused by the special nature of the product and the special consumers of such a product. In general, only participation in specialized exhibitions and fairs can be attributed to the main and practically effective measures to promote goods to the market; advertising activity on specialized Internet sites; personal selling, i.e. independent search for potential customers and establishing relationships with them [15].

The distribution of goods and sales is the main policy for ensuring the competitive development of agro-industrial enterprises, which is proven by the principle of management - you should produce what you can sell! Therefore, it is the effective capabilities of sales policy that are the key to success.

The main tasks of the sales policy are to combine the product, price and communication policies of the enterprise into a single system for the formation of an effective product distribution system. This will allow, first of all, to manage the sales channels of the agro-industrial enterprise with the main goal of forming the product batches required in terms of volume for sale under the direct management scheme to the most important consumers of primary processing products - exporters, as well as increasing the volume of sales of their products through the channels of zero level (that is, excluding intermediary organizations) in general. And, secondly, it will make it possible to form a system of distribution of products in the time plane, which is caused by peculiarities and, in particular, seasonality in the field of agro-industrial production. The latter will make it possible to maintain permanent and planned financial support for the production activity of business entities, which is a basic component of their existence and functioning on the selected object market.



The effectiveness of the functioning of the internal raw material segment of the agricultural market is considered in the study through the prism of the competitiveness of its main participants - commodity producers. The analysis of the existing theoretical works on the essence of competitiveness revealed the lack of unity of views on this category. Therefore, it became expedient to justify the definition that best corresponds to the context of the performed research. Thus, the competitiveness of agro-industrial enterprises should be understood as the ability to fully mobilize the economic potential of the enterprise, as a subject of economic relations, with the simultaneous creation of product, price, marketing and logistics competitive advantages, which allows the enterprise's offers to be more attractive to consumers, suppliers and investors in comparison with the main competitors, the consequence of which is the preservation or increase of the market share, improvement of economic efficiency and value of business. At the same time, the level of competitiveness of the enterprise can be informatively and relevantly evaluated and considered only in dynamics, because an uncompetitive enterprise or product under certain conditions of the external environment can become competitive when these conditions change and vice versa.

Thus, in the context of the implementation of the paradigm of sustainable development of subjects of economic relations in the management of the main activities of enterprises in the field of agro-industrial production, it is advisable to talk not so much about the dynamics of levels of competitiveness and efficiency, but about determining the direction of organizational, production-technological and commercial changes aimed at long-term maintaining and increasing the specified levels. This determines the expediency of introducing the definition of "competitive development". The competitive development of enterprises should be understood as the type of development of an entity that, while maintaining a stable level of economic efficiency and maintaining or improving market positions, is able to form a certain potential for increasing the competitiveness of the enterprise and its products through the use of strategies aimed at creating competitive advantages [7-11].

In our opinion, strategic management is the main possible tool for ensuring the appropriate level of efficiency, and the competitive development of enterprises

depends on the successful application of the strategy generation and implementation mechanism. The strategy should not only be singled out as an integrated model of actions or a prospective detailed project, but should be used as a tool for long-term specification of the direction of the enterprise's development, which applies to all spheres and means of its production and commercial activity, systems of internal and external relations, as well as opportunities for strengthening competitive positions of the enterprise on the selected object market. At the same time, one of the main directions of ensuring the competitive development of enterprises is the formation and practical use in real activity of agro-industrial management, which satisfies the provision of effectiveness in the area of commodity, price, communication and sales policies of business entities, thereby combining the specified areas of production and commercial activity agribusiness subjects.

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# **CHAPTER 6. LEGAL REGULATION OF INNOVATIVE DEVELOPMENT OF BUSINESS STRUCTURES**

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## **LEGAL REGULATION OF THE VIRTUAL ASSETS MARKET AND LEGAL STATUS OF VIRTUAL ASSETS MARKET PARTICIPANTS IN UKRAINE**

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### **1. Formation and development of the legal status of digital assets in Ukraine**

Virtual assets offer a significant expansion of the spectrum of financial services, and will have significant potential in terms of social and economic change. Of course, business structures, as the most innovative, client-oriented and competitive, were the first to respond to modern challenges.

But in order for the market of virtual assets to be able to work in Ukraine, it is necessary to decide on the legal status of the market of such assets. Legal relations arising in connection with the circulation of this type of intangible assets may go beyond the Internet, and therefore require special legal regulation.

Ukraine has a strong potential to take a leading place in the global digital economy. In particular, this will be facilitated by the launch of the legal market of virtual assets. The entry into force of this draft law will allow Ukrainian blockchain companies to legalize their own business processes and officially work with the banking system. In addition, citizens who receive income from operations with virtual

assets will also have this opportunity, which will contribute to the elimination of legal risks for the work of international crypto companies and the attraction of foreign investments in a new progressive industry [1; 183].

The introduction of regulation of the virtual assets market in Ukraine is an extremely urgent issue, given their wide perception among the population. Increased monitoring of activities related to virtual assets is necessary and the implementation of surveillance of this market can help to solve urgent issues. In 2022, the Law of Ukraine "On Virtual Assets" [2] (hereinafter - Law 2074) was adopted, which will enter into force from the date of entry into force of the Law of Ukraine on Amendments to the Tax Code of Ukraine on the Features of Taxation of Transactions with Virtual Assets [3], which has not yet been adopted by the Verkhovna Rada of Ukraine.

In fact, the market of virtual assets has existed in Ukraine for several years, but only now we have come to the conclusion that the legalization of this market is necessary, and accordingly, the introduction of legal norms that will regulate this market into national legislation. This is precisely the purpose of the introduction of the Law "On Virtual Assets" [2] in Ukraine.

However, the first attempt to determine the legal position and legislative regulation of the circulation of virtual assets can be considered the Explanation of the NBU "Regarding the legality of the use of the "virtual currency/cryptocurrency" Bitcoin" in Ukraine. In this explanation, the NBU noted that it considers the "virtual currency/cryptocurrency" Bitcoin as a monetary surrogate that does not have real value and cannot be used by individuals and legal entities on the territory of Ukraine as a means of payment, as it contradicts the norms of Ukrainian legislation [4 ]. The same position was expressed by the National Bank of Ukraine in the Letter dated 08.12.2014 under No. 29-208/72889, where it also defined Bitcoin as a monetary surrogate that does not have real value [5]. Currently, NBU letter No. 29-208/72889 has become invalid based on National Bank of Ukraine Letter No. 40-0006/16290 dated March 22, 2018. So, on the basis of the above-mentioned documents, we can conclude that in the period from 2014 to 2018, Bitcoin, and therefore other cryptocurrencies, was officially recognized as a monetary surrogate in Ukraine.

The legal definition of a monetary surrogate is contained in the Law of Ukraine "On the National Bank of Ukraine": a monetary surrogate is any document in the form of currency signs that differ from the monetary unit of Ukraine, issued for circulation by a non-National Bank of Ukraine and produced for the purpose of making payments in business transactions , except currency values [6, Article 1]. Thus, the definition of a monetary surrogate is given mainly through a list of exclusions.

That is, for the period of 2014-2018 within the legal field of Ukraine, the legal nature and legal form inherent in cryptocurrency were as follows: cryptocurrency as a kind of monetary surrogate, by its legal nature, is not a currency value (it is not a national or foreign currency or bank metal ), issued (introduced into circulation) not by the central bank of the state, produced for the purpose of making payments/settlements, but at the same time prohibited (officially not allowed) for use during or for making payments/settlements. On the other hand, its external manifestation can be its existence in the form of a document in the form of monetary signs (banknotes, coins, in other forms). And if we apply this last feature to cryptocurrency, we must note that it is not just a document, but rather an electronic/digital document in the form of cryptographic symbols. In this way, cryptocurrency is given a legal form, using the existing legal terminology ("document" "in the form of (certain) signs") to denote it, synthesizing it (terminology) with the technical features of the phenomenon itself - "cryptocurrency".

Therefore, cryptocurrency was not recognized as a means of payment in Ukraine at that time.

A new stage was the receipt by the Verkhovna Rada of Ukraine of the "Draft Law on Cryptocurrency Circulation in Ukraine" No. 7183 [7]. This bill proposed to define cryptocurrency as "program code (a set of symbols, numbers and letters), which is an object of ownership, which can act as a means of mining, information about which is entered and stored in the blockchain system as accounting units of the current blockchain system in in the form of data (program code)".

The next step was the receipt by the Verkhovna Rada of Ukraine of the "Draft Law on Stimulating the Market of Cryptocurrencies and Their Derivatives in Ukraine" No. 7183-1 dated October 10, 2017. In this draft law, it was proposed to define



cryptocurrency as follows: "cryptocurrency is a decentralized digital measure of value that can be expressed in digital form and functions as a means of exchange, storage of value or a unit of accounting, which is based on mathematical calculations, is their result and has cryptographic protection of accounting . For the purposes of legal regulation, cryptocurrency is considered a financial asset" [8].

But the conceptual apparatus was not sufficiently developed in the above draft laws, there were many other gaps and contradictions in the field of regulation of digital assets.

And in September 2021, the Draft Law of Ukraine "On Virtual Assets" was adopted in the second reading, and on February 17, 2022, the Law of Ukraine "On Virtual Assets" was adopted. Unlike previous draft laws, the term "cryptocurrency" is no longer used at all, instead, a new concept - "virtual asset" - has been proposed. In the text of the draft law adopted in the first reading, a virtual asset was proposed to be understood as "a set of data in electronic form that has a value and exists in the system of circulation of virtual assets." Before the second reading, the concept of a virtual asset was changed, it was proposed to mean "an intangible asset that is the object of civil rights, has a value and is expressed by a set of data in electronic form."

In addition to the above-mentioned laws in the field of regulation of virtual assets, it is also necessary to take into account the separate provisions of the following regulatory legal acts:

The Law of Ukraine on Prevention and Counteraction of Legalization (Laundering) of Proceeds of Crime, Financing of Terrorism, and Financing of Proliferation of Weapons of Mass Destruction [9];

Law of Ukraine on Banks and Banking Activity [10];

Law of Ukraine on financial services and state regulation of financial services markets [11];

Law of Ukraine on Currency and Currency Transactions [12];

Law of Ukraine on Capital Markets and Organized Commodity Markets [13];

Civil Code of Ukraine [14];

Law of Ukraine on Financial Services and Financial Companies [15];

Regulations of the National Bank of Ukraine on operations with currency values [16].

## **2. Basic concepts of digital assets.**

Of course, the development of new technologies, products and services related to them have the potential to stimulate innovation in the financial sphere, the development of digital technologies, and this in turn led to the emergence of a new concept - "digital (virtual) asset". So, when clarifying the concept of a digital asset, we will adhere to certain substantive and semantic features presented by four components: economic; legal; informative; valuable

The economic component is represented in the financial sphere by the presence of a unique identifier. The legal component is represented in the legal sphere as derived from law. The information component is represented by an information resource that rotates in a distributed registry. The valuable component is represented in the field of tangible and intangible goods by the component "Value" [17].

In the legal field of Ukraine today, there was no unified approach to understanding the content of the definition of this concept. And so far, a virtual asset is equated with the concept of "virtual currency", but a virtual asset is a much broader concept due to its embedded essence, it is an information resource derived from the right to value and such that rotates in a distributed ledger in the form of a unique identifier that allows talk about a new object of civil legal relations - the right to use information derived from the right to value. Of course, most people associate the word "assets" either with the balance sheet or with investing and receiving income from owning assets. This definition was not fully disclosed in the national legislation.

In accordance with the Law of Ukraine "On Prevention and Counteraction of Legalization (Laundering) of Criminal Proceeds, Financing of Terrorism and Financing of Proliferation of Weapons of Mass Destruction", assets are funds, including electronic money, other property, property and non-property rights [9, Art. 1].

Another definition of "asset" is specified in the Law of Ukraine "On Accounting and Financial Reporting in Ukraine". According to this Law, assets are resources controlled by the enterprise as a result of past events, the use of which is expected to lead to economic benefits in the future [18, Article 1]. That is, here we already see such an important criterion as the potential future receipt of economic benefits. Thus, we point out that from the point of view of the Law on Accounting, an asset is not only what can be owned, but also what is expected to provide economic benefit in the future.

Civil Code of Ukraine in Art. 177 also defines that objects of civil rights are things, including money and securities, other property, property rights, results of work, services, results of intellectual and creative activity, information, as well as other tangible and intangible goods [14] . And the same Code stipulates that objects of civil rights can be freely alienated or transferred from one person to another in the order of legal succession or inheritance or in another way, if they are not removed from civil circulation, or are not restricted in circulation, or are not non-disposable. from a natural or legal person [14, Article 178].

The legal definition of the term "virtual asset" is contained in Art. 1 of the Law of Ukraine "On Virtual Assets" is an intangible good that is the object of civil rights, has value and is expressed by a set of data in electronic form. The existence and liquidity of a virtual asset is ensured by the system of ensuring the turnover of virtual assets. A virtual asset can testify to property rights, in particular, rights of claim to other objects of civil rights [4].

Also, the Civil Code of Ukraine in Art. 178 defines that objects of civil rights are negotiable, that is, those that can be freely alienated or transferred from one person to another in the order of legal succession

or inheritance or otherwise, if they are not removed from the civil turnover, or are not limited in turnover, or are not inseparable from natural or legal person.

According to the Law on Virtual Assets, the turnover of virtual assets is all legal relations related to virtual assets that arise between participants in the virtual assets market, as well as between them and the state.

Therefore, it can be concluded that by the Law "On Virtual Assets" together with the Civil Code of Ukraine, virtual assets are currently directly classified as objects of civil rights in the form of intangible assets and endowed with turnover capacity.

A virtual asset as an object of civil relations arises from the moment of its creation. In accordance with Art. 5 of the Law "On Virtual Assets", the moment of creation of a virtual asset is the moment from which the first owner gets the opportunity to own, use and dispose of a virtual asset in the system of ensuring the turnover of the corresponding virtual asset, if it is not possible to reliably establish another moment of creation of the virtual asset, based on technical features systems for ensuring the turnover of virtual assets.

The turnover of a virtual asset starts from the moment of its creation and is carried out until the moment of termination of the turnover of the virtual asset.

### **3. Types of digital assets.**

Usually, given the uncertainty and complexity of legal regulation of the field of digital assets, global legal practice and state regulation comes down to establishing a single classification of such assets.

First of all, it is necessary to understand what exactly the concept of "virtual assets" means in the global context. When it used to refer only to the description of cryptocurrencies, now virtual assets can be called assets that meet the following parameters: have a digital expression of value; freely traded on the market; has a clear circulation and identification system.

According to Art. 4 of the Law "On Virtual Assets", a simplified classification is established in Ukraine: "Virtual assets are an intangible asset, the specifics of which circulation are determined by the Civil Code of Ukraine and this Law. Virtual assets can be unsecured or secured" [2, Article 4].

Moreover, the Law of Ukraine "On Payment Services" [19] establishes the concept of digital money of the National Bank of Ukraine, as an electronic form of monetary unit of Ukraine, the issuer of which is the National Bank of Ukraine.

Therefore, the legislator in Ukraine proposes to classify virtual assets into two types: secured and unsecured, distinguishing a separate subtype in secured assets - the digital currency of Ukraine. In addition, financial virtual assets are defined, which can be secured by currency values or a security or a derivative financial instrument.

So, in general, we can distinguish three types of virtual assets, these are:

- unsecured – virtual assets that do not evidence any property or non-property rights (for example, Bitcoin);
- secured – virtual assets evidencing property rights, in particular claims on other objects of civil rights (for example, individual stablecoins);
- financial – virtual assets secured by securities or hryvnia (for example, security tokens).

The Advice on Virtual Assets and Initial Coin Offerings developed by the European Securities and Markets Authority [20] clarifies which provisions of current EU legislation can be applied to the virtual asset market and proposes a classification of virtual assets consisting of three types: payment , investment and service assets. According to the type of virtual assets, the provisions of EU legislation are also determined.

Payments - just like Bitcoin, have high liquidity, low transaction costs, the ability to be used for fast payments over the Internet and for making micro payments. They are subject to Directive No. 2009/110/EC dated September 16, 2009 [21], which establishes the rules for the use of electronic money and establishes provisions on state supervision of their circulation, and Directive No. 2015/2366/EC dated November 25, 2015 [22], which regulates the provision of payment services and promotes the protection of the rights of their consumers in the EU.

In addition, the Directive dated 30.05.2018 No. 2018/843 [23], known as the Fifth Anti-Money Laundering Directive (5AMLD), distinguishes between virtual currencies and electronic money and states that virtual currencies , unlike electronic money, can be used as a means of payment, at the same time they can also have other uses: as a means of exchange, investment, preservation of value.

Investment - which are covered by the norms established by the Directive dated 15.05.2014 No. 2014/65/EU [24], are such virtual assets that can be qualified as negotiable securities or other financial instruments.

And official ones - which are not covered by the norms of EU legislation - are those created in order to ensure the possibility of their use to purchase or gain access to a certain product or service provided by their issuer. The obligation to accept official virtual assets arises only from their issuer, and therefore they cannot be recognized as electronic money.

The classification of virtual assets is offered both by scientists and international organizations in the form of advice and recommendations. Only certain countries determine the legal status of virtual assets or certain types of them.

Each country adheres to its own logical principles of state regulation, which consist in different degrees of settlement of existing social relations, therefore the legislation of different countries tries to implement internal regulation taking into account international legal institutions of legal regulation, such as:

- protection of personal data (in particular, the Regulation of the European Parliament and the Council of the EU "On the protection of natural persons in connection with the processing of personal data and on the free movement of such data" for EU countries) [25];

- identification and verification of business entities (recommendations of the FATF, "White Paper. Blockchain in simplified trade" of the Commission for the simplification of trade and electronic business of the UN European Economic Commission);

- prevention of legalization of funds obtained through criminal means (FATF recommendations, norms of the 4th Directive (EU) 2015/849 "On preventing the use of the financial system for money laundering and terrorist financing" and Regulation (EU) 2015/847 "On information accompanying money transfers") [26];

- prevention of tax evasion (Multilateral Convention on the Implementation of Measures Related to Tax Agreements with the Purpose of Countering Tax Base Erosion and Tax Evasion, dated November 24, 2016) [27].

For example, French legislation, in accordance with Directive 2015/2366 of the European Parliament and of the Council of November 25, 2015 "On payment services in the internal market" (PSD2) [28] and Directive (EU) 2009/110/EC of September 16, 2009 "On initiation, implementation and prudential supervision of the activities of institutions working with electronic money" [29] introduces the following interpretation of the types of digital assets and transactions with them.

Distinguish:

1) tokens, that is, intangible digital assets, including rights that can be issued, registered, stored and transferred electronically, if they do not qualify as financial instruments;

2) any digital representation of value that is not issued or guaranteed by a central bank or government body, is not necessarily tied to a legally established currency and does not have the legal status of currency or money, but is accepted by individuals or legal entities as a means of exchange, which may be transmitted, stored and sold electronically.

UK legislation defines three types of cryptoassets, including:

1) exchange tokens that are not issued and not supported by the central bank, but are intended for use as a means of exchange;

2) securitized tokens that have the characteristics of securities, such as shares, shares, etc.;

3) service (auxiliary) tokens, which give their holders access to certain features (services, etc.), but do not grant rights similar to those obtained by holders of securitized tokens.

Meanwhile, at the level of the European Parliament, definitions are already being used, which combined the division of virtual assets adopted in Great Britain and France and established differentiation into two large groups:

- sovereign (central bank digital currencies – CBDC);
- private (which are divided into cryptocurrencies, tokens and hybrid assets that combine some features and properties of tokens and currencies at the same time).

The specified classification is already stable and is used by the European Central Bank and the European Commission for crypto-assets.

Whether it is necessary to introduce Ukraine's own classification of virtual assets, which is not implemented in the categories defined by European legislation, especially in the aspect of the development of the actually new EU Directive (2019/1937) [30] on the regulation of crypto-assets, is quite doubtful.

Determining virtual assets only based on the fact that they are secured by non-virtual assets is dangerous from the point of view of establishing an unclear legal regime of regulation, inconsistency of the types of crypto-assets in Ukraine with EU crypto-assets, which can lead to legal conflicts and, in fact, the non-recognition of Ukrainian legal regulation of virtual assets by key financial institutions the world

When developing a mechanism for legal regulation of blockchain technologies, it is necessary to take into account the use of an extended classification of virtual assets, using the international experience of countries where there are already relevant regulatory acts and there is experience in law enforcement.

The only adequate and logical way is the direct implementation of the legal regulation of the main trade partners of Ukraine with the aim of unifying the legal regulation, the order of protection of the rights of the parties to transactions, uniform institutional approaches during the resolution of disputes, the fulfillment of requirements for identification, prevention of theft of assets and laundering of funds obtained through criminal means. protection of personal data.

#### **4. Legal status of virtual assets.**

As already mentioned above, until the Law "On Virtual Assets" enters into force, such assets are not subject to any regulatory regime, including, they cannot be considered securities.

In connection with the adoption of Law 2074 [2] in Ukraine, the legal regime of virtual assets will change accordingly. If until recently in Ukraine the legal status of virtual assets remained somewhat uncertain, then from the moment of entry into force



of the Law on Virtual Assets - virtual (or digital) assets will already have their defined legal status.

It is important to understand that Law 2074 aims to establish rules for service providers related to the circulation of virtual assets and liability for violations of the established rules, and, as stated, is based on the current standards for the regulation of transactions with virtual assets of the International Anti-Money Laundering Group (FATF). The law does not regulate the issue of taxation of operations related to virtual assets.

The scope of application of the Law is limited to a defined circle of legal relations, in particular, cases when:

- the parties defined the law of Ukraine as applicable to the deed, the subject of which is a virtual asset, as a whole or to a separate part of it;
- both parties to the transaction, the subject of which is a virtual asset, are residents of Ukraine;
- a person who carries out transactions with virtual assets in his own interests (purchaser of a virtual asset) is a resident of Ukraine;
- in the case of the supply of services related to the turnover of virtual assets, the subjects of legal relations have a registered location or a permanent representative office on the territory of Ukraine.

Having analyzed the concept of a virtual asset proposed by Law 2074 - an intangible good that is the object of civil rights, has a value and is expressed by a set of data in electronic form - it is possible to distinguish the following features:

- intangible good;
- is the object of civil rights;
- has value;
- a virtual asset is expressed (exists) in electronic form in the form of a collection of data;
- existence is ensured by the system of ensuring the turnover of virtual assets. In other words, the "life" of a virtual asset is ensured by the appropriate software complex.

But, even despite this, when analyzing Law No. 2074-IX, questions and uncertainties still arise regarding the very understanding of the essence of a virtual asset.

One of the most pressing questions that has arisen since the adoption of Law No. 2074 is whether a virtual asset is the same as a cryptocurrency or a broader concept of a virtual asset, and how a virtual asset is related to electronic money.

Regarding the question of the relationship with electronic money, the Law on Virtual Assets gives us an unequivocal answer in Part 3 of Art. 2. It is determined there that this Law does not apply to legal relations related to the issuance, circulation, storage and repayment of electronic money, as well as to legal relations arising during the emission, circulation, redemption of securities and the fulfillment of obligations under them, conclusion and execution of derivative contracts, replacement of parties to derivative contracts and execution of transactions regarding financial instruments on the capital markets, operation of software or software-hardware complexes of electronic data exchange, which ensure the implementation of the specified legal relations regarding financial instruments, as well as relations arising during carrying out professional activities on capital markets and organized commodity markets.

Regarding the identity of the cryptocurrency virtual asset. Currently, the national legislation does not contain the exact definition of cryptocurrency, some lawyers and financiers believe that it is actually a subspecies of electronic money, and therefore in this sense the Law "On Virtual Assets" does not apply to cryptocurrencies...

If we analyze the definition of a virtual asset and its characteristics (not material, has value, exists only in digital form and within a certain electronic system), cryptocurrency fits this definition. Not only it meets the same features, because, for example, digital tokens, game skins or NFT (non-fungible token) also meet the definition of a virtual asset.

And in this way, we can conclude regarding the identity of virtual asset and cryptocurrency that the latter, although it has certain features of a virtual asset, is not the same concept.

Even more, cryptocurrency is a means of payment, which is essentially its most important feature. At the same time, a virtual asset cannot be used to pay for goods or services and is not a means of payment on the territory of Ukraine (Part 7 of Article 4 of the Law "On Virtual Assets"[14]). But, at the same time, virtual assets can be exchanged for other virtual assets or hryvnias, with the exception of the cases stipulated by the NBU, where exchange for currency values, foreign currency, other currency values is also possible.

So, there is a certain problem both in understanding and in defining what a digital asset is, what is its peculiarity and difference or identity with cryptocurrencies. Accordingly, we need either a clear definition of the concept of cryptocurrency, or, for example, a more detailed explanation of the relevant state body regarding the concept of a virtual asset, its varieties, etc.

But in general, the analysis of the definition enshrined in the Law indicates the direction of the legislator not to limit its understanding exclusively to cryptocurrency, although it can be assumed that it was cryptocurrency that was the main focus of the legislative work and Law 2074. Disclosure of the meaning of the concept of a virtual asset in the context of Law 2074, as a concept of an intangible good, expressed by the totality of data in electronic form, as we can see, it allows to attribute to virtual assets not only cryptocurrencies, but also any NFT token, i.e. unique, non-interchangeable cryptographic tokens, as well as any arrays of data stored and reproduced in electronic form that have value. But even after such a definition, questions remain: for example, whether it is possible to consider accounts in social networks as a virtual asset, and the tangible and intangible goods generated within them, reputational, advertising and related goods, expressed in particular in the number of subscribers, influential - what such accounts do to subscribers, etc. We assume that certain aspects in this regard will be clarified by law enforcement practice, which will lead to the improvement and clarification of the details of Law 2074.

Today, among the regulators of the world's leading countries, including the countries of the European Union, there is no single approach to determining the legal status of cryptocurrencies and regulating transactions with them. The concept of

cryptocurrency varies from identification with the concepts of "goods", "means of payment", "unit of account" to the concepts of "intangible asset", "investment asset", "financial asset", "separate type of securities", etc. In this case, it becomes necessary to analyze each of the proposed concepts.

Digital goods are any goods that are sold, delivered and transferred in digital form. Many of the most common examples of digital goods are media files, including music files, video files containing movies or television programming, branded multimedia files, and other similar products.

An electronic payment instrument is a payment instrument implemented on any medium that contains in electronic form the data necessary to initiate a payment transaction and/or perform other transactions defined by the contract with the issuer [19].

A unit of account (notional or artificial unit) is a unit of special drawing rights defined by the International Monetary Fund. In accordance with the definition in Article 9 of the Code of Merchant Shipping dated 23.05.1995, the specified amounts are transferred to the national currency of Ukraine at the official rate of this currency to the unit of the "special borrowing right" published by the National Bank of Ukraine on the day of the creation of the restrictive fund, and if the restrictive the fund is not created - on the day of payment.

Intangible assets are rights to the results of intellectual activity, which usually do not have a physical form, for example, copyrights, licenses, patents, or the excess of the market price of the enterprise over its book value (goodwill). In financial accounting and reporting, the value of such rights is included in the division of assets.

According to the Regulation (standard) of accounting [31], an intangible asset is a non-monetary asset that does not have a material form and can be identified. An intangible asset purchased or received is recognized if it is probable that the entity will receive future economic benefits associated with its use, and its value can be reliably determined.

According to the Tax Code [32], intangible assets are the ownership right to the results of intellectual activity, including industrial property, as well as other similar

rights recognized as the object of ownership (intellectual property), the right to use property and property rights of the taxpayer in the established according to the legislation, including the rights to use natural resources, property and property rights acquired in the procedure established by the legislation.

According to the International Accounting Standard [33], an asset is identifiable if it: a) can be separated, that is, it can be separated or separated from the entity and sold, transferred, licensed, leased or exchanged individually or together with by a contract, identifiable asset or liability, whether or not the entity intends to do so, or b) arises from contractual or other legal rights, whether or not they can be transferred or severable from business entity or from other rights and obligations.

In addition, the Law "On Virtual Assets" unequivocally establishes that virtual assets will not be a means of payment on the territory of Ukraine. They cannot be exchanged for goods or services. Therefore, it will be impossible to settle with the help of virtual assets in Ukraine, except to exchange them for other goods, money and currency values through barter, as a result of which, in addition, the activity of crypto exchanges is legalized.

Currently, digital assets in Ukraine are approximately in this legal field. So, let's summarize:

Virtual assets are not a means of payment on the territory of Ukraine and cannot be the subject of exchange for property (goods), work (services) (Clause 7, Article 4 of the Law "On Virtual Assets").

Virtual assets are intangible assets, the specifics of their circulation are determined by the Civil Code of Ukraine and Law 2074; virtual assets can be unsecured or secured, and separately allocated financial assets (clause 1, article 4 of Law 2074);

Unsecured virtual assets do not prove property rights. (clause 2 of article 4 of the Law of 2074);

Secured virtual assets certify property rights, in particular the rights of claim to other objects of civil rights (item 3, article 4 of Law 2074).

The provision of a virtual asset is understood as the certification of property rights, in particular the rights of claim to other objects of civil rights. The security of virtual assets is not security for the performance of an obligation.

A certificate of property rights means confirmation of the right of the owner of the secured virtual asset to claim the object of security (clause 4 of article 4 of the Law of 2074). A certificate of property rights means confirmation of the right of the owner of the secured virtual asset to claim the security object.

The used concept of "certificate" of property rights by a virtual asset may not always correspond to the legal nature of the virtual asset, from which further withdrawal of property or property rights is possible, but in a different form than specified by the Law. Based on a number of other provisions of the Law, it can be argued that collateralization of a virtual asset is understood as its attachment to "real" or fiat values expressed in a non-digital form, in particular according to Part 6 of Art. 4 of Law 2074, financial virtual assets are: a secured virtual asset issued by a resident of Ukraine and secured by currency values; a secured virtual asset issued by a resident of Ukraine, secured by a security or a derivative financial instrument. Accordingly, unsecured virtual assets do not have such reinforcement, and their value is exclusively embodied in a digital, digital form [34].

The object of securing a virtual asset is another object of civil rights, the right of claim to which such a virtual asset certifies. The object of securing a virtual asset is determined by the deed according to which such a virtual asset was created. Property rights, in particular claim rights, to the virtual asset security object are transferred to the acquirer of such virtual asset [35].

## **5. Ownership of virtual assets.**

The need to establish the legal status of virtual assets as an object of civil rights is directly related to the realization of a fundamental human right - the right to property, the protection of which is guaranteed, in particular, by Article 17 of the Universal Declaration of Human Rights [36], Article 1 of Protocol No. 1 to the Convention on the Protection of human rights and fundamental freedoms (hereinafter referred to as

the "Convention") [37]. One of the elements of the content of this right is the ability to dispose of one's property.

The concept of "property" within the meaning of the Convention "has an autonomous meaning that is independent of the official classification in national legislation and is not limited to the right of ownership of physical goods" [37, c. 7]. Property, among other things, also includes company shares and other financial instruments, intellectual property rights, future income [37, p. 11-12].

According to the Civil Code of Ukraine, the right of ownership of a virtual asset is the right of a person to a thing (property), which he exercises in accordance with the law at his own will, regardless of the will of other persons [14, Article 316]. As for any other property, the content of the right of ownership of a virtual asset includes the rights of possession, use and disposal [14, Article 317], if this does not contradict the Law.

The Law "On Digital Assets" defines that virtual assets are intangible goods, and therefore, are objects of civil rights and are subject to protection in accordance with the law.

Thus, virtual assets may be the subject of civil proceedings, as well as the subject of criminal proceedings, if, for example, theft or fraud is committed against the virtual asset.

The right of ownership is acquired on grounds not prohibited by law, in particular from deeds. The right of ownership is considered legally acquired, unless otherwise directly follows from the law or the illegality of the acquisition of the right of ownership or the unreasonableness of the assets in the ownership have not been established by the court (Article 328 of the Civil Code of Ukraine).

The content of the right to own a virtual asset includes the right to own a virtual asset, the right to use a virtual asset and the right to dispose of a virtual asset at one's discretion, if this does not contradict the law, in particular by transferring the right to own a virtual asset (part 5 of article 6 of Law 2074).

Ownership, use and disposal of a virtual asset is recorded in the system for ensuring the turnover of virtual assets (paragraph 6 of article 6 of the Law of 2074). Acquisition conditions, transfer conditions and the scope of rights to virtual assets can

be expressed in the form of algorithms and functions of the system for ensuring the turnover of virtual assets, within which the turnover of virtual assets is carried out (Clause 2, Article 6 of Law 2074).

Given the legal nature of a virtual asset, which is expressed as a set of data in electronic form, such an asset arises from the moment of its creation, use and management of virtual assets is carried out using a virtual asset wallet, and access to such a wallet is carried out using a kind of virtual asset key, which includes, in particular, a code and a password.

The provisions of Article 6 of the Law regarding ownership of a virtual asset are interesting.

In accordance with part 1, the following grounds for acquiring ownership of a virtual asset are established:

- at the time of creation of such an asset;
- execution and execution of a transaction regarding a virtual asset;
- on the basis of the norms of the law;
- on the basis of a court decision.

The moment of creation of a virtual asset is the moment from which the first owner gets the opportunity to own, use and dispose of a virtual asset in the system of ensuring the turnover of the corresponding virtual asset, if it is not possible to reliably establish another moment of creation of the virtual asset, based on the technical features of the system of ensuring the turnover of virtual assets [2 , Article 5]. It is from the moment of creation that the turnover of a virtual asset begins and is carried out.

Mining of any cryptocurrency can be cited as an example of creating a virtual asset. From the moment when an individual or legal entity using its own computing power (for example, mining farms) issued a certain amount of cryptocurrency (as a virtual asset) for its own benefit, ownership of such a virtual asset is considered created.

Ownership of a virtual asset is evidenced by possession of the key of such virtual asset. And it follows from this that the owner of the virtual key is the owner of such a virtual asset.



This interpretation is confirmed by the conclusion of the Higher Anti-Corruption Court of Ukraine in Case No. 991/3721/22. In its Resolution, the Court concludes that ownership of a virtual asset is acquired by the fact of creating a virtual asset, committing and executing a transaction related to a virtual asset, evidenced by possession of the key to such a virtual asset. Therefore, the owner of the virtual asset key (wallet access code and password) is the owner of such virtual asset [38].

Exceptions to this rule are also defined in the Law "On Virtual Assets". The owner of the key of a virtual asset will not be the owner of such an asset if:

1) the key of the virtual asset or the virtual asset is kept by a third party in accordance with the terms of the transaction between the custodian and the owner of this virtual asset;

2) the virtual asset is transferred for safekeeping to any person in accordance with the law or a court decision that has entered into force;

3) the key to the virtual asset was acquired illegally by a person.

Technically, ownership of a virtual asset is carried out using a key and a wallet of a virtual asset, which is a software or software-hardware complex that provides its user with information about virtual assets owned by him and the ability to dispose of them in the system for ensuring the turnover of virtual assets using a key virtual asset.

The law establishes that the disposition of a secured virtual asset will be considered the disposition of the property right to the object of securing this virtual asset. At the same time, it should be borne in mind that during the execution of the transaction regarding the disposition of the secured virtual asset, the Law requires compliance with the established requirements regarding the form or essential conditions of the transaction regarding the disposition of the object of securing the virtual asset.

It is also worth reminding that one of the key restrictions provided for by the Law is the ban on using virtual assets as a means of payment on the territory of Ukraine and exchanging them for property (goods), works (services). Thus, if the transaction related to property (goods), works (services) falls under the scope of regulation of the Law, it will be impossible to carry out calculations using cryptocurrencies.

Of course, providers of services related to virtual assets have the right to provide these services to their respective consumers, clients. Clients are those persons who acquire the corresponding rights to such assets. They have the right to acquire ownership, alienate, exchange virtual assets, dispose of them in any way. Also, the Law "On Virtual Assets" specifies the right of digital assets market participants to independently determine and set the value of virtual assets, based on which transactions with virtual assets are carried out [2, Article 9].

## **6. Peculiarities of turnover and transactions with virtual assets**

Turnover of virtual assets - all legal relations related to virtual assets that arise between participants of the virtual assets market, as well as between them and the state (item 7, item 1, article 1 of Law 2074).

The turnover of secured virtual assets is subject to all restrictions applicable to the turnover of objects of civil rights with which such virtual assets are secured (Clause 1, Article 8 of Law 2074).

At the same time, if the secured virtual asset is secured by an object of civil rights that is under private or public encumbrance, or is secured by an object of civil rights that has been withdrawn from civil circulation, alienation of such virtual asset is not allowed, and any committed the transaction regarding the alienation of such a virtual asset is null and void (item 2 of article 8 of the Law of 2074).

The turnover of a virtual asset begins from the moment of its creation and is carried out until the moment of termination of the turnover of the virtual asset (clause 2 of article 5 of the Law of 2074). At the same time, the turnover on the territory of Ukraine of secured virtual assets secured by currency values is carried out in accordance with the procedure established by the National Bank of Ukraine (item 3 of article 5 of Law 2074).

As for the turnover of secured virtual assets that are not secured by currency values, their turnover in Ukraine is carried out in accordance with the procedure established by the National Securities and Stock Market Commission.

In addition, the person who is entrusted with the obligation for the secured virtual asset, in the event that the objects of civil rights with which it was secured are lost by him or have fallen out of civil circulation for one reason or another, and the possibility of securing a replacement of such a virtual asset is not provided for by the deed on the creation of a corresponding secured virtual asset or by the deed on alienation of such a virtual asset, shall be obliged to ensure the termination of the turnover of such a virtual asset (clause 5, article 5 of Law 2074).

Law 2074 does not apply to legal relations related to the issuance, circulation, storage and redemption of electronic money, as well as to legal relations arising during the emission, circulation, redemption of securities and fulfillment of obligations under them, conclusion and execution of derivative contracts , replacement of parties to derivative contracts and execution of transactions regarding financial instruments on the capital markets, operation of software or software-hardware complexes of electronic data exchange, which ensure the implementation of the specified legal relations regarding financial instruments, as well as relations arising during the conduct of professional activities on the capital markets and organized commodity markets (paragraph 3 of article 2 of the Law of 2074).

Disposition of a secured virtual asset is a disposition of the property right to the object of securing this virtual asset (Clause 1, Article 7 of Law 2074). According to Art. 1107 of the Civil Code of Ukraine, disposal of property rights is carried out on the basis of the following contracts: 1) license to use the object of intellectual property rights; 2) license agreement; 3) an agreement on the creation to order and use of an object of intellectual property rights; 4) agreement on the transfer of exclusive intellectual property rights; 5) another agreement regarding the disposition of property rights of intellectual property. In the event that the law establishes requirements regarding the form or essential conditions of the transaction on the disposition of the object of securing a virtual asset, such requirements are subject to fulfillment also during the execution of the transaction on the disposition of such a virtual asset (Clause 7, Article 6 of Law 2074).

If the secured virtual asset is secured by an object of civil rights that is under private or public encumbrance, or is secured by an object of civil rights that has been removed from civil circulation, the alienation of such virtual asset is not allowed, and any act of alienation of such a virtual asset is worthless (clause 2 of article 8 of the Law of 2074).

## **7. The market of virtual assets in Ukraine and its participants**

Today, the market of virtual assets is in the process of its formation.

The virtual assets market is a set of participants in the virtual assets market and legal relations between them regarding the turnover of virtual assets (item 10 part 1 article 1 of Law 2074).

As noted by O.I. Kulik, for the market of virtual assets as an object of legal regulation, it is necessary to define its essence as a legal category. At the same time, it should be noted that the purpose of legal regulation is to regulate social relations, and the relations regarding the circulation of virtual assets are economic. In view of this, it is necessary to characterize the economic essence of this market [39].

In general, many approaches to defining the concept of "market" have been developed in scientific theory. For example, some economists in the field of marketing consider the market to be one of the economic categories of the commodity economy, which is the sphere of commodity exchange. This approach was also reflected in the explanatory dictionary, where the market is defined as the sphere of commodity exchange [40, p. 536].

At the same time, some of the scientists, including K.V. Maslyaeva, researching the definition of the economic and legal category "market", note that the market is the sphere of economic relations that arise between the subjects of market relations regarding the manufacture and sale of products, the performance of works and the provision of services by agreeing on the price and are regulated by the state [ 41, p. 7].

In view of all this, it would be more appropriate to apply the following definition for the virtual assets market: the virtual assets market as an object of legal regulation is the sphere of social relations that arise between market participants in the process of

creating and exchanging virtual assets, including intermediaries services and services for the transfer of virtual assets, as well as implementation of state regulation and self-regulation of the virtual assets market.

Participants in the virtual assets market are providers of services related to the turnover of virtual assets, as well as any persons who carry out operations with virtual assets in their own interests (clause 12, part 1, article 1 of Law 2074).

Providers of services related to the turnover of virtual assets are exclusively business entities - legal entities that conduct one or more of the following types of activities in the interests of third parties:

- storage or administration of virtual assets or virtual asset keys;
- exchange of virtual assets;
- transfer of virtual assets;
- provision of intermediary services related to virtual assets (item 8 part 1 article 1 of Law 2074).

The link and the same types of activities are contained in Clause 51 Part 1 of the Law of Ukraine "On Prevention and Counteraction of Legalization (Laundering) of Criminal Proceeds, Financing of Terrorism and Financing of the Proliferation of Weapons of Mass Destruction", where it is stated that the service provider, related to the circulation of virtual assets, is any natural or legal entity that conducts one or more of such activities and/or operations for or on behalf of another natural and/or legal entity.

And based on this definition, service providers related to virtual assets can include currency institutions and crypto exchanges that exchange cryptocurrency for fiat currency.

As we can see, the Law does not specify other participants in the virtual assets market than providers of services related to the turnover of virtual assets. But, as an example by analogy, we can cite the Law "On Capital Markets and Organized Commodity Markets", where stock market participants are defined as: issuers, including foreign ones, or persons who have issued non-issued securities, persons who provide security, investors in financial instruments that have acquired ownership rights

to securities, administrators, professional participants of capital markets, persons who conduct activities related to capital markets and organized commodity markets, associations of professional participants of capital markets [13, part 2 of article 4 .].

According to the opinion of some scientists, cryptocurrency market participants should include: 1) users of cryptocurrency 2) issuers of cryptocurrency, in particular those engaged in forging and ICO (Initial Coin Offering) and miners; 3) performers of ensuring the functioning of cryptocurrencies, which include exchanges, online and offline exchangers, issuers and miners of cryptocurrencies; 4) regulators, that is, interested state bodies, in particular the National Bank of Ukraine, the Ministry of Finance, the State Fiscal Service, the National Commission for Regulation of Financial Services Markets, the National Securities and Stock Market Commission, the State Financial Monitoring Service, the Ministry of Economic Development and trade [42, c. 1003].

These approaches have a common position regarding the classification of issuers (including miners) as market participants. At the same time, the Law of Ukraine "On Capital Markets and Organized Commodity Markets" includes self-regulatory organizations as participants, and scientists include state regulators as participants. Therefore, for the purposes of specifying the infrastructure elements of the virtual assets market, it seems necessary to analyze issuers, as well as regulators: both state bodies and self-regulated organizations [43].

The Law "On Capital Markets and Organized Commodity Markets" in Art. 4 explains these concepts as follows: the issuer is a legal entity, a territorial community in the form of a representative body of local self-government, the state in the form of state authorities authorized by it, an international financial organization, which on its behalf places emission securities and undertakes obligations for such securities before their owners.

At the same time, Law 2074 itself does not provide us with a definition of the issuer.

The next type of virtual assets market participants are self-regulatory organizations of professional capital market participants. Such organizations are

associations of professional capital market participants that meet the requirements established by the National Securities and Stock Market Commission.

Another type of participants are professional capital market participants. These are legal entities operating in the organizational and legal form of a joint-stock company, a limited liability company or a company with additional liability, which conduct professional activities on the capital markets, the types of which are defined by law. The Central Securities Depository has the status of a professional capital market participant.

Regarding the restrictions on persons who cannot be a professional participant in the capital markets, such a participant cannot be a legal entity that meets at least one of the following criteria:

1) the legal entity is created in accordance with the legislation of the state carrying out armed aggression against Ukraine in the sense given in Article 1 of the Law of Ukraine "On the Defense of Ukraine";

2) sanctions have been applied to the legal entity in accordance with the Law of Ukraine "On Sanctions";

3) the legal entity is included in the list of persons connected with the conduct of terrorist activities or in respect of whom international sanctions have been applied;

4) the legal entity is under the control of the persons specified in clauses 1-3 of this part, or has such persons among the owners of significant participation;

5) the legal entity does not meet the requirements established by law for professional capital market participants.

In fact, part 3 of Article 9 of Law 2074 contains the same prohibitions on the activities of service providers related to virtual assets. In particular, it is determined that: a provider of services related to the turnover of virtual assets cannot be a legal entity:

1) which is registered in accordance with the legislation of a state recognized by the Verkhovna Rada of Ukraine as an occupying state or an aggressor state;

2) which is located on the territory of a state recognized by the Verkhovna Rada of Ukraine as an occupying state or an aggressor state;

3) managers, chief accountant, owners of significant participation and ultimate beneficial owners of which are citizens of a state recognized by the Verkhovna Rada of Ukraine as an occupying state or an aggressor state;

4) who is a person who is directly or indirectly controlled within the meaning of Article 1 of the Law of Ukraine "On Protection of Economic Competition" by residents of a foreign state recognized by the Verkhovna Rada of Ukraine as an occupying state or an aggressor state, or acts in their interests;

5) the ultimate beneficial owners of which are residents of a foreign state recognized by the Verkhovna Rada of Ukraine as an occupying state or an aggressor state;

6) participants (shareholders) of which are the ultimate beneficial owners of a resident of a foreign state recognized by the Verkhovna Rada of Ukraine as an occupying state or an aggressor state;

7) who owns directly or indirectly (through another natural or legal entity) any share of a resident of a foreign state, a state recognized by the Verkhovna Rada of Ukraine as an occupying state or an aggressor state;

8) has among its participants (founders, shareholders) legal entities registered in states (jurisdictions) that do not implement or improperly implement the recommendations of international, intergovernmental organizations involved in the fight against legalization (laundering) of criminally obtained income or financing terrorism or financing the proliferation of weapons of mass destruction.

In part 5, 6 of Art. 9 of Law 2074 clearly defines legal entities that can provide services related to the turnover of virtual assets, in particular:

- managers, chief accountant, owners of significant participation and ultimate beneficial owners of which have an impeccable business reputation;

- which has formed authorized capital in the amount established by this Law and can confirm the legality of receiving funds that were directed to the formation of authorized capital of a legal entity;

- which meets other requirements established by this Law.



the service provider can be a foreign legal entity that is a participant in the virtual assets market, under the law of a foreign state, conducts activities as a service provider in the manner and under the conditions determined by the National Commission for Securities and the Stock Market, taking into account the requirements and restrictions determined by this Law.

In addition, in part 7 of Art. 9 of Law 2074 specifies the limitation of the circle of persons who have the right to provide services related to the turnover of secured virtual assets - currency values. Only financial institutions can provide such services.

The legal definition of financial institutions is contained in the Law of Ukraine "On Financial Services and Financial Campaigns", which was adopted on February 14, 2021, and which will enter into force on January 1, 2024 [15]. According to the said Law: a financial institution is a legal entity, the purpose of which is to provide financial services, which, in accordance with the law, provides one or more financial services on the basis of an appropriate license issued by the Regulator. Providers of accompanying services who do not also provide financial services at the same time, as well as other persons who received a license to provide financial services without acquiring the status of a financial institution, are not financial institutions.

Acquiring the status of a financial institution takes place on the basis of the Resolution of the National Bank of Ukraine "On approval of the Regulation on licensing and registration of financial service providers and the conditions for their activities in the provision of financial services" dated 12.24.2021 No. 153 [44]. The provisions in section I establish a comprehensive list of requirements for conducting financial services activities.

In Part 1 of Art. 9 of the Law of Ukraine "On Currency and Currency Valuables" defines obligations for providers of services related to the turnover of virtual assets, which are non-banking financial institutions, provide financial services related to the turnover of secured virtual assets, certifying the rights to currency of value to carry out such operations on the basis of a license to carry out currency operations.

## **8. Storage, exchange and transfer services in the market of virtual assets**

The national legislation discloses the circulation of virtual assets in Art. 10-12 of Law 2074. In particular, the list of services that can be provided by participants in the virtual assets market is defined there.

The Civil Code of Ukraine considers services as an independent object of civil law, which is a strong argument that confirms the right of a contract for the provision of services to exist [45].

The legislator uses the concept of "service" in a whole series of both legislative and subordinate regulatory legal acts. At the same time, despite the use of the concept of "service" in many current normative acts, none of them, including the Civil Code of Ukraine, provide its single definition. Only the understanding of service as an action that brings benefits is sustainable. Distinguishing them from "works" is essential for the correct understanding of "services" as an object of civil rights.

According to the Law of Ukraine "On Financial Services and Financial Companies" - a financial service - an operation or several operations related to the same legal purpose, with financial means, carried out in the interests of persons other than the provider of such a financial service, as well as services, directly defined by special laws as financial services [15, Article 1].

As for the market of virtual assets, the legislator gives the following list of such services: storage, exchange and transfer, separating intermediary services into a separate article.

The implementation of the specified types of activities requires prior obtaining of a permit, the authority to issue which is entrusted to the National Securities and Stock Market Commission. To obtain a permit, the applicant must meet a number of strict criteria and pay a fee for its issuance. The National Commission for Securities and the Stock Market is also authorized to establish the Procedure for issuing, refusing to issue, reissuing, canceling the permit for the provision of services related to the turnover of virtual assets.

Also, in accordance with Law 2074, a number of requirements are set for such persons who plan to conduct the activity of a provider of services related to the turnover

of virtual assets in order to obtain a permit to provide services related to the turnover of virtual assets:

1) The application for the issuance of a permit to provide services related to the turnover of virtual assets must necessarily contain information about the applicant, such as: the full name of the legal entity, the code of the legal entity in the Unified State Register of Legal Entities, Individuals - Entrepreneurs and Public formations, location, postal address, numbers of means of communication, e-mail address, which is the official communication channel;

2) The application must specify the activities of the service provider related to the turnover of virtual assets, which the applicant intends to carry out;

3) A description of the ownership structure of such a legal entity must be attached to the application (a documented system of relationships between individuals and legal entities, trusts, other similar legal entities, which makes it possible to establish all ultimate beneficial owners (BBOs), including control relationships between them, or the absence of ultimate beneficial owners according to Clause 58, Part 1, Article 1 of the Law "On Prevention and Countermeasures to Legalization (Laundering) of Criminal Proceeds, Financing of Terrorism, and Financing of Proliferation of Weapons of Mass Destruction" [9].

The ultimate beneficial owner for legal entities is any natural person who exerts a decisive influence on the activities of the legal entity (including through the chain of control/ownership) [9, clause 30, part 1, article 1]. Direct ownership by a natural person of a share of at least 25 percent of the authorized (compounded) capital or voting rights of a legal entity is a sign of direct decisive influence on the activity.

Signs of exercising indirect decisive influence on the activity are at least ownership by a natural person of a share of at least 25 percent of the authorized (composite) capital or voting rights of a legal entity through related natural or legal persons, trusts or other similar legal entities, or exercising decisive influence through exercising the right to control, own, use or dispose of all assets or their share, the right to receive income from the activities of a legal entity, trust or other similar legal entity, the right to have a decisive influence on the formation of the composition, the voting

results of management bodies, as well as the execution of transactions that give the opportunity determine the basic conditions of the economic activity of a legal entity, or the activity of a trust or other similar legal entity, make binding decisions that have a decisive impact on the activity of a legal entity, trust or other similar legal entity, regardless of formal ownership.

At the same time, the final beneficial owner cannot be a person who has a formal right to 25 or more percent of the authorized capital or voting rights in a legal entity, but is a commercial agent, nominal owner or nominal holder, or only an intermediary in relation to such a right [9, p. 30 part 1 of article 1].

4) The application must be accompanied by documents confirming the sources of origin of the funds used for the formation of the authorized capital and the actual contribution of funds for its formation;

The acts on the basis of which money and property were received must not in any way violate the law or contradict it. Such agreements must not have signs of fictitiousness or pretense. All relevant taxes and fees provided for by current legislation must be paid from such income.

5) The documents submitted with the application must contain information on:

- business reputation of the ultimate beneficial owners;
- owners of a significant participation of the applicant (identification data of such persons, their business reputation, percentage of authorized capital or voting rights held by each such participant (shareholder) in the applicant);

According to Clause 4 of Article 1 of Law 2074, significant participation is direct or indirect, independent or joint ownership of 10 or more percent of the authorized (composite) capital or voting rights of purchased shares (shares) of a legal entity, or independent of formal ownership the possibility of significant influence on the management or activity of a legal entity.

Similar definitions of the concept of "substantial participation" are contained in other normative legal acts. In particular, in the Law of Ukraine "On Banks and Banking Activities". Substantial participation - direct and/or indirect ownership by one person independently or jointly with other persons of 10 or more percent of the authorized

capital and/or voting rights of shares, shares of a legal entity, or the possibility of significant influence on the management or activities of a legal entity independent of formal ownership. A person is recognized as the owner of an indirect substantial participation, regardless of whether such a person exercises control over the direct owner of participation in a legal entity or controls any other person in the chain of ownership of corporate rights of such a legal entity [10, Article 2].

In the Law of Ukraine "On Prevention and Combating the Legalization (Laundering) of Criminal Proceeds, the Financing of Terrorism and the Financing of the Proliferation of Weapons of Mass Destruction", direct or indirect ownership by one person alone or jointly with other persons of a share of 10 percent or more of the statutory capital or voting rights in a legal entity or independent of formal ownership, the possibility of significant influence on the management or activity of a legal entity [9, clause 29 of article 1].

- identification data, business reputation and professional experience of the applicant's managers, business reputation of the applicant;

- identification data, professional experience and impeccable business reputation of the founders of the applicant, the chairman and members of the collegial executive body (a person exercising the powers of a sole executive body), the chairman and members of the supervisory board (if any) of such a legal entity;

6) Along with the application, the applicant's internal documents regulating the conduct of the relevant type of activity of the provider of services related to the turnover of virtual assets must be submitted.

7) Also, together with the application and documents, a copy of the payment document confirming the payment of the fee for issuing a permit for the provision of services related to the turnover of virtual assets is submitted.

Submission of the relevant application for obtaining, reissuing, or canceling a permit for the provision of services related to the turnover of virtual assets and relevant documents, as well as obtaining a permit, can be done both in paper and electronic form through the Unified State Web -portal.

In the event that the documents that were submitted for the issuance of a permit for the provision of services related to the turnover of virtual assets contain incomplete and/or mutually exclusive and/or inaccurate information and/or do not meet the requirements of the law; or a person who intends to conduct the activities of a provider of services related to the turnover of virtual assets does not meet the requirements of Law 2074 - the National Securities and Stock Market Commission has the right to refuse to issue a permit for the provision of services related to the turnover of virtual assets . Such a refusal must necessarily be motivated, specifying the specific reason and basis for the refusal. The fee for issuing a permit for the provision of services related to the turnover of virtual assets, in case of refusal, is subject to return to the applicant upon his application.

The decision to issue or refuse to issue a permit is made within six months from the date of receipt of the application and the documents attached to it, stipulated by the license conditions. If there are no foreign legal entities in the ownership structure of the applicant's legal entity, such a period is three months [46, clause 3, section III].

In case of refusal to issue a permit, the applicant may submit a new application for the issuance of a permit and relevant documents to the National Commission for Securities and the Stock Market after eliminating the reasons that became the basis for the refusal to issue a license. If, on the other hand, the refusal to issue a permit was granted on the basis of the discovery of unreliable data in the documents submitted by the applicant for the issuance of a permit, the applicant may submit a new application for the issuance of a license no earlier than one year from the date of the decision on the refusal to issue a license [46, p. 8.9 of Chapter III].

In the event of a change in any information and any information submitted for state registration, providers of services related to the turnover of virtual assets are obliged to notify the National Securities and Stock Market Commission of such changes within 10 working days from occurrence of changes in the procedure established by the National Securities and Stock Market Commission.

If the provider of services related to the turnover of virtual assets is a bank that has the right to provide services related to the turnover of secured virtual assets -

currency values - then such a provider has the right to provide such services on the basis of a banking license and permission to provide services, related to the turnover of virtual assets. For providers of services related to the turnover of secured virtual assets - currency values, which is not a banking financial institution, such a provider has the right to provide services related to the turnover of such virtual assets on the condition of obtaining a license of the National Bank of Ukraine to carry out currency operations and permission to provide services related to the turnover of virtual assets [2, item 16, article 19].

Business entities are allowed to conduct more than one type of activity of a provider of services related to the turnover of virtual assets, subject to obtaining a permit for the provision of each relevant type of services related to the turnover of virtual assets (paragraph 3 of Article 18 of Law 2074).

The services of storage or administration of virtual assets or keys of virtual assets are the provision of safekeeping of virtual assets or keys of virtual assets with the possibility of independently moving such virtual assets in the interests and on behalf of third parties. The provider of services for the storage or administration of virtual assets or keys to virtual assets moves such virtual assets only on the condition that such movement is carried out in accordance with the instructions of the owner of the virtual asset and is expressly provided for in the relevant contract with the owner of the virtual asset regarding its storage or administration (Part 1 of Article .10 of Law 2074).

In fact, services for the storage or administration of virtual assets or keys to virtual assets are: ensuring the preservation of virtual assets or keys to virtual assets with the ability to independently move such virtual assets in the interests and on behalf of third parties.

The legislator also establishes the minimum amount of authorized capital for legal entities engaged in the provision of services for the storage or administration of virtual assets.

For residents of Ukraine - providers of services for the storage or administration of virtual assets or keys to virtual assets, the minimum amount of authorized capital must be at least 70 thousand tax-free minimum incomes of citizens, or 1,190,000 UAH.

For non-residents - providers of services for the storage or administration of virtual assets or keys to virtual assets, the minimum amount of the authorized capital must be at least 350 thousand tax-free minimum incomes of citizens. We note that the tax-free minimum income of citizens in accordance with the tax legislation of Ukraine is UAH 17, thus the minimum authorized capital for a legal entity that plans to engage in the provision of services for the storage or administration of virtual assets will be UAH 5,950,000.

The activities of service providers related to the turnover of virtual assets are carried out on the condition that they have previously obtained permission to provide services related to the turnover of virtual assets. The granting of permission for the provision of services related to the turnover of virtual assets is carried out on a paid basis (Part 1 of Article 19 of Law 2074).

Business entities are allowed to conduct more than one type of activity of a provider of services related to the turnover of virtual assets, subject to obtaining a permit for the provision of each relevant type of services related to the turnover of virtual assets (Part 3, Article 18 of Law 2074). That is, depending on the number of types of range allowed for such business entities - participants in the virtual assets market, for each of the permitted types of activity, such as storage or administration, exchange, transfer - it will be necessary to obtain a corresponding permit for each separate such activity .

The fee for issuing a permit to provide services related to the issuance of a permit to store or administer virtual assets or virtual asset keys to a resident legal entity will amount to 8,000 minimum citizen incomes, or UAH 136,000. The fee for obtaining the same permit for a non-resident legal entity will already amount to forty thousand tax-free minimum incomes of citizens, or UAH 680,000.

If the activity being carried out does not allow the custodian to independently carry out the transfer of such virtual assets in the interests and on behalf of third parties, such activity is not considered the storage or administration of virtual assets or virtual asset keys.



The provisions of the Civil Code of Ukraine on storage contracts, taking into account the specifics established by this Law, apply to contracts for the provision of services for the storage or administration of virtual assets or keys to virtual assets (paragraph 3 of Article 10 of Law 2074).

A storage contract is an agreement between two parties, according to which one party (the custodian) undertakes to keep the thing transferred to it by the other party (the bailor) and to return it to the latter intact. Such a contract is public if the storage of things is carried out by the subject of entrepreneurial activity in warehouses (in cells, premises) for public use.

The custody agreement, in which the custodian is a person carrying out storage on the basis of entrepreneurial activity (professional custodian), may establish the custodian's duty to keep the thing that will be transferred to the custodian in the future [14, 936].

Taking into account the fact that the providers of storage and administration services in accordance with Law 2074 must be legal entities, the requirements of Article 208 of the Civil Code of Ukraine will be applied to the storage contract, in particular, such a contract must be concluded in writing. In addition, in accordance with Part 1 of Article 937 of the Civil Code of Ukraine, if the acceptance of the item for storage was certified by a receipt, receipt or other document signed by the custodian, the written form of such an agreement is considered to have been complied with.

Virtual asset exchange services are activities related to the exchange of virtual assets for other virtual assets and currency values, which is carried out for third parties and/or on behalf of and in the interests of third parties (Part 1, Article 11 of Law 2074). In fact, such services are activities related to the exchange of virtual assets for other virtual assets, money and currency values on behalf of and in the interests of third parties.

Similarly to the requirements for the provision of storage and administration services, the legislator establishes the minimum amount of authorized capital for legal entities engaged in the provision of services for the exchange of virtual assets. For

residents of Ukraine - providers of services for the exchange of virtual assets, the minimum amount of authorized capital must be at least 35 thousand tax-free minimum incomes of citizens, or 595,000 UAH. For non-residents - providers of services for the exchange of virtual assets, the minimum amount of authorized capital must be at least 175 thousand tax-free minimum incomes of citizens, or UAH 2,975,000.

In the same way as for the provision of services for the storage and administration of virtual assets, for persons who plan to provide services for the exchange of virtual assets, an obligation to obtain the appropriate permit is established. The amount of the fee for issuing a permit for the provision of services related to the activity of exchanging virtual assets for residents is set at five thousand tax-free minimum incomes of citizens, i.e. UAH 85,000. Obtaining a similar permit for a non-resident legal entity that plans to carry out activities related to the exchange of virtual assets on the territory of Ukraine will already amount to twenty-five thousand tax-free minimum incomes of citizens - that is, UAH 425,000.

Also, Law 2074 sets restrictions for such virtual asset exchange service providers regarding the fact that they have the right to provide virtual asset exchange services exclusively for other virtual assets or for the national currency (hryvnia), and in cases determined by the National Bank of Ukraine - to other currency values. Currently, there are no separate provisions in national legislation regarding the exchange of virtual assets for national currency or other currency values.

Virtual asset transfer services in accordance with Law 2074 are the transfer of virtual assets in the interests of third parties from the wallet of virtual assets of third parties to the wallet of virtual assets of other persons.

The size of the authorized capital for residents of Ukraine to provide this type of services in the field of virtual assets in accordance with Law 2074 must be at least 35 thousand non-taxable minimum incomes of citizens, or 595,000 UAH. For non-residents, the minimum size of the authorized capital will already be at least 175,000 tax-free minimum incomes of citizens, i.e. 2,975,000 UAH.

The fee for obtaining a permit for carrying out activities related to the transfer of virtual assets will be: for residents - five thousand tax-free minimum incomes of

citizens; for non-residents - twenty-five thousand non-taxable minimum incomes of citizens (85,000 and 425,000 UAH, respectively).

In addition, Law 2074 states that providing a virtual asset transfer service is not considered to be any related activity related to the provision of the process or part of the transfer process, if the provider of such services cannot directly influence, make decisions and control the implementation of the transfer of virtual assets. Therefore, such related activities will not be regulated by the provisions of Part 2 of Art. 12 of the said Law.

Law 2074 defines participants who provide intermediary services related to virtual assets as a separate, fourth, type of participants in the digital asset market. The law refers to such intermediary services, in particular, the execution of transactions regarding virtual assets (including the implementation of a public offering of virtual assets) in the interests of third parties.

Mediation is considered the action of one person, aimed at reaching an agreement between two other parties to a legal relationship, regarding their entry into the same legal relationship. In other words, mediation is helping someone to enter into a legal relationship, to conclude an appropriate contract.

In the national legislation, activity in the field of mediation is regulated by a number of normative legal acts, in particular, the Economic Code of Ukraine. According to Part 3 of Article 263 of the Commercial Code of Ukraine, commercial mediation in the implementation of commercial activities is a commercial activity. And in accordance with Art. 295 of the Commercial Code of Ukraine, commercial mediation refers to types of economic activity, and is also considered agency activity.

The implementation of such commercial mediation consists in the provision of services by a commercial agent to economic entities when they carry out economic activities through mediation on behalf of, in the interests of, under the control and at the expense of the entity that he represents. A commercial agent for the purposes established by the Civil Code of Ukraine can be a business entity (citizen or legal entity) who, under the authority based on an agency contract, carries out commercial mediation. However, commercial agents cannot be considered business entities -

entrepreneurs who act in their own name, albeit in the interests of others. In addition, the Law determines that a commercial agent cannot enter into an agreement in relation to himself personally, but on behalf of the person he represents. Restrictions or bans on commercial mediation in certain business sectors may also be established.

The grounds for the emergence of such agency relations are defined in Article 296 of the Economic Code of Ukraine. Such grounds are the granting of powers by the business entity on the basis of the contract to the commercial agent to perform relevant actions; and approval by a business entity represented by a commercial agent of an agreement concluded in the interests of this entity by the agent without the authority to conclude it or in excess of the authority granted to him.

The conditions for concluding such an agency agreement are mandatory in writing; the form of confirmation of the powers (representation) of the commercial agent must be determined. Such a contract must define the scope, nature and procedure of the commercial agent's performance of mediation services, the rights and obligations of the parties, the terms and amount of remuneration to the commercial agent, the term of the contract, sanctions in case of breach by the parties of the terms of the contract, other necessary conditions determined by the parties, and there must also be a condition regarding the territory within which the commercial agent carries out activities determined by the agreement of the parties. If the territory of such an agent is not specified in the contract, it is considered that the agent operates within the territory of Ukraine.

Such a commercial agent will receive an agency fee for intermediary operations carried out by him in the interests of the entity he represents, in the amount stipulated by the contract.

The next type of mediation, which is defined in the Economic Code of Ukraine, is financial mediation. According to Article 333 of the Economic Code of Ukraine, the finances of business entities are recognized as an independent link of the national financial and credit system with an individual circulation of funds, which ensures the coverage of production costs (works, services) and the receipt of profit. Accordingly, financial intermediation for the purposes of the Law is considered to be an activity

related to the receipt and redistribution of financial funds, except for cases provided for by law. Banks and other financial and credit organizations are recognized as authorized persons who carry out such financial intermediation. Banks, moreover, are obliged to carry out such financial intermediation in the form of banking transactions.

In general, intermediation is considered to be an activity that reduces the owner's risks, and therefore should be economically attractive for owners in this activity.

For participants in the virtual assets market who provide intermediary services, as well as for those participants who provide other types of activities in the field of virtual assets, Law 2074 establishes requirements for the minimum size of the authorized capital: at least 35 thousand tax-free minimum incomes of citizens (595,000 UAH) for resident participants, and at least 175 thousand tax-free minimum incomes of citizens (2,975,000 UAH) for non-resident participants.

In the same way as for other professional participants in the virtual assets market, participants who provide intermediary services in the field of virtual assets circulation are required by national legislation to obtain an appropriate permit for the provision of such services. The amount of the fee for issuing a permit to provide intermediary services related to the turnover of virtual assets for residents is four thousand non-taxable minimum incomes of citizens (68,000 UAH), and the amount of fee for obtaining the same permit for a non-resident participant will amount to twenty thousand non-taxable minimums income of citizens (425,000 UAH).

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**RETROSPECTIVE OF LEGAL REGULATION  
OF IMPLEMENTATION OF GOALS AND PRINCIPLES  
OF SUSTAINABLE DEVELOPMENT**

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In modern world socio-economic theory and practice, the concept of sustainable development is considered as a strategy for solving the problems of preserving and reproducing the natural environment and ensuring a high standard of living of the planet's population. The origins of this concept go back to the studies of the Club of Rome, which have been carried out since the beginning of the 70s of the XX century. The result of these studies was a system of ideas and concepts, which was called "new humanism", on the basis of which the Concept of sustainable development arose [1, p. 350]. A number of theoreticians and supporters of sustainable development consider it the most promising ideology of the 21st century, which, with the deepening of scientific validity, is gradually supplanting all existing worldview ideologies as fragmentary, unable to ensure the balanced development of civilization.

Over the past several decades, various UN organizations have developed and promulgated a number of global development concepts aimed at overcoming crisis phenomena.

In the Declaration of the first UN conference on environmental problems (Stockholm, 1972), the connection between economic and social development and environmental problems was indicated. For the first time, the issue of the relationship between economic development and environmental degradation has been included in the international agenda. The Declaration of the UN Conference on Environmental Issues was adopted, which contained 26 principles and a 109-point action plan. In the

principles, for the first time, a list of laws on environmental protection activities at the state and intergovernmental levels was given. The conference in Stockholm marked the beginning of the development of environmental policy at the state level, as well as the environmental movement on a global scale.

In October 1982, at the next meeting of the UN General Assembly, the World Charter of Nature Defense was unanimously adopted, which proclaims a number of principles of nature conservation, according to which any human activity that affects nature must be managed and evaluated. The first of the principles of the Charter states: "Nature must be respected and its basic processes must not be disturbed."

In 1983, on the initiative of the Secretary General of the UN, the International Commission on Environment and Development (WCED) was created, headed by the Prime Minister of Norway H.H. Brundtland. The tasks of the ICRC include the development of basic principles, indicators of balanced development, as well as a global environmental and economic action program. In 1986, the commission prepared the report "Our common future", which was submitted to the 42nd session of the UN (1987). The report presented a new concept of balanced development as an alternative to development based on unlimited economic growth. For the first time, the concept of balanced development was precisely defined - as development in which current generations satisfy their needs, while not jeopardizing the ability to satisfy the needs of future generations [2, p. 626]. In 1990, the International Union for Nature, together with the United Nations Environment Program and the World Wildlife Fund, developed a strategy for a balanced life "Care for the Earth". In this strategy, sustainable development is considered "as an improvement in the quality of life within the potential capacity of ecosystems that provide life" [3, p. 10.].

In 1992, in Rio de Janeiro, at the UN conference on the environment and development, many important documents were adopted on the regulation of global development guidelines, including the "Agenda for the 21st century" [4], within the framework of which there was a new development concept was announced. In the "Agenda for the 21st century" (Agenda 21), which was considered as a program of

global cooperation, sustainable development is associated with the harmonious achievement of the following goals:

- high quality environment and healthy economy for all peoples of the world,
- meeting people's needs and maintaining sustainable development over a long period [5].

According to the "Agenda for the XXI century", each country was recommended to develop a national strategy for balanced development, taking into account the necessary environmental protection measures. The Rio Declaration on Environment and Development consists of 27 principles that aim to define a new, equitable, global partnership through the creation of other levels of cooperation between states, key sectors of society and citizens. Even today, this declaration remains a key document in the field of environmental protection and the implementation of balanced development. Agenda 21 recommends that each country develop a national strategy for balanced development, taking into account the necessary environmental protection measures.

The goals are universal for application in both developed and developing countries. Governments are expected to build on them national action plans, policies and initiatives that reflect the different realities and opportunities that are specific to these countries. Although the SDGs are primarily addressed to governments, they are designed to cover a wide range of organizations and outline, within a common strategy, priorities and aspirations to support efforts towards sustainable development [9].

Each country has its own way of ensuring sustainable development. In some, this path is just beginning, in others it has already begun, and still others have already embarked on the path of sustainable economic development (USA, Japan, countries of the European Union) [10]. There are many such countries that are not ready for sustainable development and do not accept it. They put one strategic goal in the first place - to survive. It is precisely such countries that provoke threats that spread to other states and their regions. Achieving sustainable development of regions is extremely difficult, because close proximity to other states creates a threat of ecological danger, and globalization, which has rapidly gained momentum, contributes to the formation

and exacerbation of economic and social dangers that ultimately affect regional development.

As mentioned earlier, at the 5th session of the UN Commission on Balanced Development, it was decided to oblige all countries to formulate and develop national strategies for balanced development by 2002. The national paradigm of sustainable development should focus on the formation of a system of concentrated, scientifically based and legalized ideas about the goals, priorities, content, methods and means of resource-efficient economic activity of the state.

On April 7-25, 1997, the V session of the UN Commission on Balanced Development (CDC) was held in New York, within the framework of which negotiations were held between the heads of governments regarding the documents adopted during the Planet Earth Summit (Rio +5"). The conclusions of the session were disappointing: "the global state of the environment continues to deteriorate ... and serious environmental problems are still deeply embedded in the socio-economic structure of countries in all regions" [5]. It was stated that all sectors of society should participate in the development and implementation of the balanced development strategy. The session committed all countries to formulate and develop by 2002 national strategies for balanced development that would reflect the contributions and responsibilities of all interested parties.

The Kyoto Protocol, signed on December 11, 1997 as an additional document to the UN Framework Convention on Climate Change, signed in 1992 at the international conference in Rio de Janeiro, is of great importance in ensuring sustainable development. The convention entered into force in 1994, the Kyoto Protocol itself came into force on February 16, 2005. To date, 191 countries have signed and ratified the protocol, including most industrialized countries, except for the United States, which has signed but not ratified the agreement. It was agreed that the participating countries are obliged to reduce the average annual volume of greenhouse gas emissions in the period 2008-2012 by an average of 5.2% (compared to 1990). A separate commitment to their reduction was made by Japan – by 6%, the USA – by 7% and the

EU – by 8% (the northern countries of the EU undertook to achieve the maximum reduction – by 28%).

Quite important from the point of view of stimulating sustainable development were the decisions made at the International Conference on Financing for Development. The conference was held in Monterrey (Mexico) on March 18-22, 2002. The heads of state and government of the countries of the world, noting the scarcity of resources, called for the achievement of internationally agreed development goals, including those contained in the Millennium Goals. For this, they suggested using the following tools: tax levers, investments in economic and social infrastructure, development of capital markets through banking systems, conducting a prudent budget and monetary policy. Also reduce the impact of inflation, promote high rates of economic growth, full employment, eradication of poverty, price stability [6].

The next UN summit on sustainable development, named "Rio +10", took place in 2002 in Johannesburg. At this meeting at the highest level, the results of the implementation of the principles of the concept over the past years were summed up. Another 10 years later, in June 2012, the next UN Conference on Sustainable Development "Rio +20" was held in Rio de Janeiro (Brazil), which was attended by 135 heads of state and government. The participants of the summit summed up 20 years of work, and also discussed the problems of the "green" economy, sustainable development and poverty eradication.

The last regulatory event for the implementation of the concept of balanced development was the Sustainable Development Summit within the LXX session of the UN General Assembly, which took place on September 25-27, 2015 in New York. The main topic for discussion was the Agenda "Period after 2015" and the document "Goals of Sustainable Development". The main elements for the Agenda were defined as dignity, people, prosperity, planet, justice and partnership. The new Agenda envisages eradicating poverty by 2030 and promoting economic prosperity, social development, and environmental protection everywhere. The goals of sustainable development approved at the Summit are complex, interrelated and indivisible goals of humanity and demonstrate a global character. The 17 Goals and 169 milestones aim to address



the main systemic obstacles to sustainable development, including inequality, unsustainable consumption and production, lack of adequate infrastructure and decent work.



**Fig. 1. Goals of sustainable development [8]**

The goals are universal for application in both developed and developing countries. Governments are expected to build on them national action plans, policies and initiatives that reflect the different realities and opportunities that are specific to these countries. Although the SDGs are primarily addressed to governments, they are designed to cover a wide range of organizations and outline, within a common strategy, priorities and aspirations to support efforts towards sustainable development [9].

The main stages and events of the formation, regulation and implementation of the concept of sustainable development at the international level are listed in table 1.

**Table 1 – Evolution of the creation and implementation of the concept of sustainable development**

<b>Year, place of event</b>	<b>Initiator</b>	<b>Event (document)</b>
June 1972, Stockholm	1st UN Conference on	The issue of the relationship between economic development and the deterioration of the environment is on the international agenda. The Declaration of the UN

<b>Year, place of event</b>	<b>Initiator</b>	<b>Event (document)</b>
m, Sweden	Environmenta l Issues	Conference on Environmental Issues (contains 26 principles and a 109-point action plan) was adopted. The principles contain a list of laws on environmental protection at the state and intergovernmental levels.
December 1972	UN	The United Nations Environmental Program (UNEP) was created, which remains today the world's leading institution on environmental issues. It is also represented in Ukraine.
1979, Bonn, Germany	Bonn Agreement	Rules for calculating emissions of harmful gases, a scheme for trading emission quotas between states have been established
October 1982	Session of the UN General Assembly	The World Charter of Nature Defense ("The World Charter of Nature Defense") was adopted, which proclaims a number of principles of nature conservation, according to which any human activity affecting nature must be managed and evaluated.
1983	UN General Assembly	Creation of the International Commission on Environment and Development (WCED) - development of basic principles, indicators of balanced development and a global environmental and economic action program.
1987	International Commission on the Environment (WCED)	Report "Our common future". A new concept of balanced development is presented as an alternative to development based on unlimited economic growth. The concept of sustainable development is defined

<b>Year, place of event</b>	<b>Initiator</b>	<b>Event (document)</b>
1990	The working group of the ICRC	Calculations have been made regarding the freezing of "harmful emissions" (greenhouse gases).
1992., Rio de Janeiro, Brazil	II UN Conference on Environment and Development - "Earth Summit"	Final documents: – Declaration of Rio de Janeiro on environment and development; – Agenda for the XXI century; – UN Framework Convention on Climate Change; – Convention on conservation of biological diversity; – Declaration on the direction of development, protection and use of forests.
1997, New York, USA	Special session of the UN General Assembly "Planet Earth"+5	Review and assessment of the implementation of the Agenda for the XXI century (within the session - the Rio+5 Forum and the 5th session of the UN Commission on Balanced Development).
March 13-19, 1997, Rio de Janeiro, Brazil	Forum "Rio+5"	The forum gave many non-governmental organizations the opportunity to discuss and decide how to turn the issue of the implementation of balanced development from the agenda into concrete actions.
April 7–25, 1997, New York, USA	V session of the UN Commission on Balanced	Evaluation of documents and resolutions adopted during the "Planet Earth" Summit ("Rio+5"). It was determined that all sectors of society should participate in the development and implementation of the balanced development strategy. The session obliged all countries

<b>Year, place of event</b>	<b>Initiator</b>	<b>Event (document)</b>
	Development (CDC)	to formulate and develop by 2002 national strategies for balanced development that would reflect the contributions and responsibilities of all interested parties.
December 11, 1997, Japan, Kyoto	UN	An additional document to the UN Framework Convention on Climate Change, signed in 1992 at the international conference in Rio de Janeiro. The convention entered into force in 1994. The Kyoto Protocol entered into force on February 16, 2005.
2002, South Africa, Johannesb urg	UN World Summit on Sustainable Development	<p>An assessment of the results of the fulfillment of obligations undertaken by the countries in 1992 and 1997 was carried out. Two documents were adopted as a result of the summit:</p> <ul style="list-style-type: none"> <li>– Johannesburg Declaration on Balanced Development;</li> <li>- Implementation plan of the Agenda for the 21st century with determination of activity priorities.</li> </ul> <p>The main priority is the social problems of balanced development: poverty alleviation, development of health care, sanitation, provision of clean drinking water, etc. New problems were put forward - trade, globalization and financing of balanced development. The declaration formulated the main tasks for achieving balanced development: overcoming poverty; change in consumption patterns; protection and rational use of the natural resource base.</p>
February 4, 2004	UN, Verkhovna	Ukraine ratified the Kyoto treaty

<b>Year, place of event</b>	<b>Initiator</b>	<b>Event (document)</b>
	Rada of Ukraine	
2012	UN	The Kyoto Protocol has been extended until 2020.
September 25-27, 2015, New York, USA	Summit on sustainable development within the LXX session of the UN General Assembly	The main topics for discussion are the "Post-2015" agenda and the "Sustainable Development Goals" document. Key elements for the Agenda: dignity, people, prosperity, planet, justice and partnership. 5 driving elements are identified: integration, universality, human rights, equality and development. The new Agenda envisages eradicating poverty by 2030 and promoting economic prosperity, social development, and environmental protection everywhere. Comprehensive, interconnected and indivisible, the 17 Sustainable Development Goals are the goals of humanity and demonstrate a universal character. The goals and 169 milestones aim to address the main systemic obstacles to sustainable development, including inequality, unsustainable consumption and production, lack of adequate infrastructure and decent work. Outcome documents: declaration, sustainable development goals and targets, means of implementation and global partnership for sustainable development, follow-up activities and implementation review.

Each country has its own way of ensuring sustainable development. In some, this path is just beginning, in others it has already begun, and still others have already

embarked on the path of sustainable economic development (USA, Japan, countries of the European Union) [10]. There are many such countries that are not ready for sustainable development and do not accept it. They put one strategic goal in the first place - to survive. It is precisely such countries that provoke threats that spread to other states and their regions. Achieving sustainable development of regions is extremely difficult, because close proximity to other states creates a threat of ecological danger, and globalization, which has rapidly gained momentum, contributes to the formation and exacerbation of economic and social dangers that ultimately affect regional development.

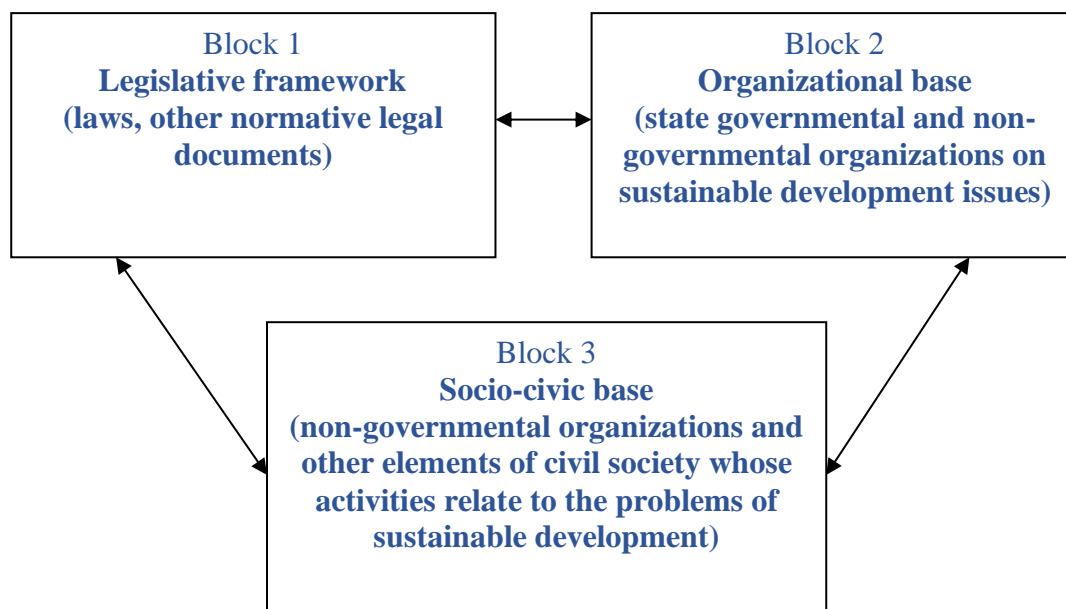
As mentioned earlier, at the 5th session of the UN Commission on Balanced Development, it was decided to oblige all countries to formulate and develop national strategies for balanced development by 2002. The national paradigm of sustainable development should focus on the formation of a system of concentrated, scientifically based and legalized ideas about the goals, priorities, content, methods and means of resource-efficient economic activity of the state. The main strategic principles of the formation of a national model of sustainable development should include:

- determination of goals, tasks, ways of development of society, satisfaction of its ecological needs;
- organization of society's activities to fulfill the adopted goals and programs;
- distribution of material and eco-cultural values;
- coordination of various interests of the state and social communities;
- development of standards and laws of behavior in society;
- ensuring internal and external security and stability of the political system;
- formation of social consciousness;
- control over compliance with laws, termination of actions that violate generally accepted environmental norms [11].

The concept of sustainable development should be developed on the principles of ensuring ecosystem integrity and integrated management, which are based on a dynamic process of effective use of resources, on the basis of the harmonization of social, economic and environmental interests [11].

The mechanism of state regulation of sustainable development is a single complex system of interconnected elements, which is formed on the basis of cause-and-effect dependencies of the purposeful organizing, coordinating and regulatory influence of the state on the system of sustainable development, through the use of methods of levers and instruments of influence, and includes: normative and legal, organizational-management, financial-economic and informational mechanism, and is implemented at different levels of management [12].

According to Sh. A. Omarov, the mechanism of state regulation and regulation of sustainable development of the country is based on the following basic blocks: legislative base; organizational base; social and civil base (Fig. 2).



**Fig. 2. Elements of the mechanism of state regulation of sustainable development of the country [13, c. 86]**

Ukraine takes an active part in international cooperation on the implementation of the concept of sustainable development, environmental protection, and countering global climate change. Our country is a member of the UN Human Rights Council, the Economic and Social Council, participates in the activities of the UN European Economic Commission aimed at strengthening regional cooperation in the field of

energy, transport, ecology, and also cooperates with the UN Forum on Forests and the Commission on Sustainable Development UN.

The paradigm of sustainable (balanced) development was implemented in Ukraine by implementing the provisions of the Agenda for the 21st Century and decisions of the World Summits on Sustainable (Balanced) Development into the national legal framework and by joining new and implementing existing international agreements on this issue [5, p. . 154]. Resolution of the CMU No. 1123 dated 08.10.93 established the National Commission for Sustainable Development of Ukraine under the CMU, which was abolished in 2003, and instead the National Commission for Sustainable Development under the President of Ukraine was created. The National Council for the Sustainable Development of Ukraine was established by Resolution No. 997 of the CMU dated September 16, 2009 [14]. As part of the transition to balanced socio-ecological and economic development in Ukraine, a number of legal acts were updated to implement the goals and principles of sustainable development. Individual legal acts and their brief description are given in Table 2.

**Table 2 - Normative and legal acts aimed at the implementation of goals and principles of sustainable development in Ukraine [15, p. 865]**

<b>№</b>	<b>The name of the law</b>	<b>Goal</b>
1	Law of Ukraine "On the Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the Period Until 2020", dated December 21, 2010 No. 2818-VI	Stabilization and improvement of the state of the natural environment of Ukraine by integrating environmental policy into the socio-economic development of Ukraine to guarantee an ecologically safe natural environment for the life and health of the population, implementation of an ecologically balanced system of nature use and preservation of natural ecosystems.
2	Law of Ukraine "On Environmental Audit", 2004, No. 45, Art. 500.	Defines the basic legal and organizational principles of environmental audit and is aimed at



№	The name of the law	Goal
		increasing the environmental validity and efficiency of business entities.
3	Law of Ukraine "On the Basics of National Security of Ukraine" Law of Ukraine, (VVR), 2003, No. 39, Art. 351 (with changes)	Defines the main principles of state policy aimed at protecting national interests and guaranteeing the safety of individuals, society and the state in Ukraine against external and internal threats in all spheres of life.
4.	Forest Code of Ukraine, 21.01.94, No. 3852-XII	Ensures protection, reproduction and sustainable use of forest resources taking into account ecological, economic and social and other interests of society.
5.	Code of Ukraine on Subsoil, 07/27/94, No. 132/94-VR	Regulates mining relations with the aim of ensuring the rational, complex use of subsoil to meet the needs for mineral raw materials and other needs of public production, protection of subsoil, guaranteeing the safety of people, property and the environment when using subsoil.
6.	Water Code of Ukraine, 06.06.95, No. 213/95-VR	Regulates rational water use
7.	Land Code of Ukraine, 25.10.2001, No. 2768-III	Regulates economic stimulation of rational use for land protection.
8.	Air Code of Ukraine dated May 19, 2011, No. 3393-VI	Regulates activities in the field of aviation and use of the airspace of Ukraine

№	The name of the law	Goal
9.	Resolution of the CMU of December 16, 2004, No. 1691 "On approval of sustainable development of the region of mining and primary processing of uranium raw materials for 2006-2030"	The purpose of the program is to provide a full-fledged living environment for the inhabitants of the region on the basis of social, economic and ecological balanced development through the rational use of resources (natural, labor, production, scientific and technical, intellectual, etc.), technological re-equipment and restructuring of enterprises, improvement social, industrial, transport, communication and information, engineering, ecological infrastructure, improvement of living conditions, recreation and health, preservation and enrichment of biological diversity and cultural heritage.
10.	The concept of sustainable development of settlements, seal Resolution of the Verkhovna Rada dated 24.12.99, No. 1359-XIV	It is the basis for the development of normative legal acts, programs and projects regarding regulation of planning and construction, stimulation of investment activity, improvement of tax policy, filling and rational use of local budgets to ensure socio-economic development of settlements.

A retrospective analysis of the legal regulation of the implementation of the conceptual provision of sustainable development of Ukraine proved its insufficient effectiveness, as well as the absence of an effective legislative conceptualization of the mechanism of state regulation of the country's sustainable development. Despite repeated attempts to create Sustainable Development Concept Projects, the legal regulation did not receive proper legislative implementation, and the documents adopted at the highest international level were not fully reflected in state policy,

national programs, and economic practice. Provisions for ensuring sustainable development were worked out in each of the draft Concepts of Sustainable Development, but for various reasons, they were not approved at the legislative level (Table 3).

**Table 3 - Projects of Concepts of sustainable development of Ukraine**

<b>Proposed official document</b>	<b>Initiators (developers)</b>	<b>Result</b>
1. Draft Law "On the Concept of Sustainable Development of Ukraine" dated April 25, 2001 No. 3234	Yu.I. Yekhanurov, Cabinet of Ministers of Ukraine	Not adopted by the Verkhovna Rada of Ukraine (no votes)
2. Draft Law "On the Concept of Sustainable Development of Ukraine" dated December 19, 2001 No. 3234-1	Yu.I. Yekhanurov, Cabinet of Ministers of Ukraine; Yu.I. Samoilenko, V.B. Khazan - people's deputies of Ukraine	Not adopted by the Verkhovna Rada of Ukraine (no votes)
3. Draft Resolution of the Verkhovna Rada of Ukraine "On the Concept of Ukraine's Transition to Sustainable Development" dated July 2, 2004 No. 5749	V.I. Landyk, S.V. Semenets, T.M. Yakheieva - People's Deputies of Ukraine	The issue was considered, the project was not supported
4. Draft Concept of Ukraine's Transition to Sustainable Development, 2006	Institute of Problems of Nature Use and Ecology of the National Academy of Sciences of Ukraine; Institute of Market Problems and Economic-Co-Ecological Research of NASU	Sent to the Verkhovna Rada of Ukraine, the Cabinet of Ministers of Ukraine. It did not reach the project stage

<b>Proposed official document</b>	<b>Initiators (developers)</b>	<b>Result</b>
5. Draft Concept of Ukraine's Transition to Sustainable Development, 2012	Institute of Geography of NASU; Institute of Market Problems and Economic and Environmental Research of NASU; Institute of Problems of Nature Use and Ecology of the National Academy of Sciences; Research Institute of Sustainable Development and Nature Management of the National Academy of Sciences; Ukrainian Society for Nature Protection; All-Ukrainian Environmental League and other institutions	Sent to the Cabinet of Ministers of Ukraine. It did not reach the project stage

An important event in the normative and legal regulation of the implementation of the principles of sustainable development was the Presidential Decree "On the Sustainable Development Strategy "Ukraine - 2020" dated January 12, 2015 [16]. The Sustainable Development Strategy of Ukraine for the period until 2020 defines the goals and indicators of their achievement, as well as the directions and priorities of the country's development. The goal of the reforms, despite the declared goal, is the achievement of European living standards and a worthy place for Ukraine in the world. "Strategy-2020" includes 62 reforms. Among them, 8 reforms and 2 programs are prioritized. The following are identified as priorities:

- reform of the national security and defense system;
- renewal of power and anti-corruption reform;
- reform of the judicial and law enforcement system;
- decentralization and reform of public administration;

- deregulation and development of entrepreneurship;
- health care system reform and tax reform.

Two programs have been identified as priorities - energy independence and popularization of Ukraine in the world and promotion of the state's interests in the global information space [15, p. 867].

According to the results of the study of the peculiarities of modern strategic planning of sustainable development in Ukraine in accordance with the "Sustainable Development Strategy "Ukraine-2020", coordination of global SDGs of sustainable development goals and the goals of the Strategy (on the vectors of development, security, responsibility and pride) and other regulatory, legislative and planning documents, it was found that only slightly more than 60% of the tasks of global sustainable development goals are reflected in state strategic documents and relevant reforms. [17]. As Professor Z.M. Buryk notes, "tactical solutions for their practical achievement are not proposed in the Strategy. Individual indicators are ambitious, but, from the point of view of existing economic realities, practically unattainable... Despite the particular acuteness of environmental, economic and social problems, the "Sustainable Development Strategy "Ukraine - 2020" has not received a rational extension - none of the declared items. Accordingly, this Strategy can be characterized as a political manifesto" [18, p. 40].

The Ministry of Economic Development and Trade of Ukraine initiated and during 2016 coordinated the inclusive process of discussion of the SDG by the following groups:

- fair social development;
- sustainable economic growth and employment;
- effective, accountable and inclusive governance and justice for all;
- ecological balance and development of sustainability.

In order to establish the strategic framework of the national development of Ukraine for the period until 2030, based on the principle of "leaving no one behind", an inclusive process of adaptation of the Central Development Strategy was launched. More than 800 leading specialists in the thematic areas of the Central Development

Strategy were involved in the open process of establishing the national goals of the Central Development Strategy, which was supposed to ensure the objectivity of the assessments. Proposals regarding the goals of Ukraine's sustainable development were submitted by representatives of ministries and agencies, government institutions, UN agencies in Ukraine, international organizations, the business community, the expert environment, public organizations (primarily those representing the interests of the most vulnerable population groups), and civil society. This work was supported by all agencies of the UN system in Ukraine (including the UN Development Program in Ukraine, which served as the secretariat), the Green Economy Program implemented by the German Society for International Cooperation (GIZ) on behalf of the Federal Ministry of Economic Development and Cooperation of Germany and jointly with the Institute of Demography and Social Research named after M.V. Birds of the National Academy of Sciences of Ukraine. The result of the inclusive process of adaptation of the SDS for Ukraine was a report that provides guidelines for the development of Ukraine until 2030 [19]. Each global goal was considered taking into account the specifics of national development. During 2016, a number of national and regional consultations were held in Ukraine, based on the results of which it can be concluded that the national SDGs will serve as a basis for the integration of efforts aimed at ensuring economic growth, social justice and rational use of nature in a single state-managed system – socially & ecologically & economic.

In the conditions of Ukraine's persistent desire for full membership in the international environment, in order to ensure macroeconomic stability, economic growth, environmental security of the state and social security of its citizens, the implementation of priority tasks, compliance with the key indicators of the "Sustainable Development Strategy "Ukraine-2020" and the implementation of goals are necessary sustainable development for 2016-2030 through the implementation of new programs and projects, qualitative transformations in the social, economic and ecological components of the balanced development of our state on the basis of perfect and effective legal regulations.

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**TRANSFER OF INNOVATIVE TECHNOLOGIES:  
THEORY, METHODOLOGY, WORLD EXPERIENCE  
AND PRACTICE OF UKRAINE**

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The modern concept of the development of economic systems is formed on the basis of digital transformation. Digital technologies have gradually become a necessary component of any management or production process. Understanding the importance of digital transformation leads to the emergence of development trends and increased competitiveness of companies through the search for new ideas and solutions. One of the directions of such a search is the creation of networks for the transfer of innovative technologies. The transfer of innovative technologies has a broad definition, is individually adapted to different industries, has its own characteristics and different mechanisms for implementation. The relevance of the development of innovative technology transfer systems is due to the importance of building a complex architecture of the company's management system and the simultaneous digital transformation of business.

Important components of research on the transfer of innovative technologies are the system of knowledge in the following areas:

- in the area of innovations and innovative products for business;
- when creating digital transformation models;
- through the involvement of information systems and technologies in management, finance, marketing;
- when modeling innovative development strategies of companies on the basis of separate organizational and economic mechanisms,

- when algorithmizing management processes and management decision-making processes;
- when developing economic-mathematical models and using data analytics when implementing strategies;
- when implementing and implementing newly created innovative projects;
- working out the legal basis and possibilities of attracting technology transfer networks for business in various industries, etc.

### **Innovation and creation of an innovative product.**

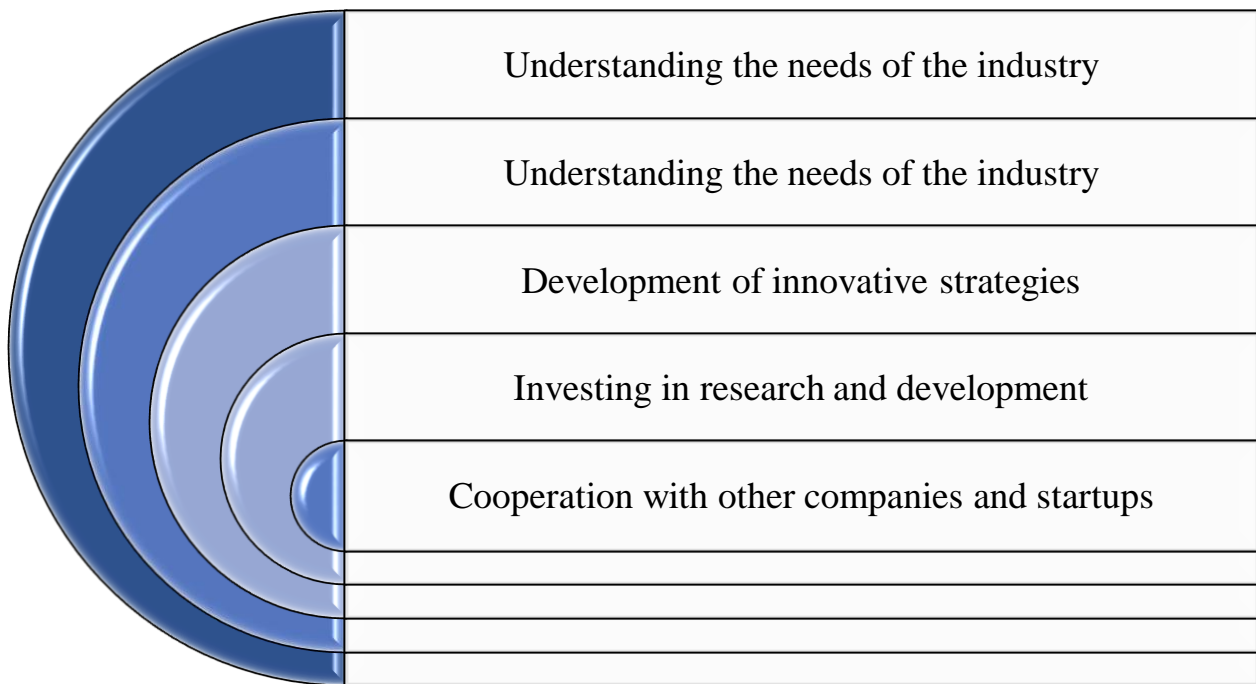
Creating an innovative product for the company is the primary task of increasing competitiveness. The realities of the market situation create prerequisites for the identification and continuous involvement of market success factors and key competencies. Very often, the understanding of innovations is not appropriate for the business itself, but the application of this category in business processes is necessary. There are a number of reasons for this, both objective and subjective. First, companies in real operating conditions are not sufficiently focused on the constant creation and attraction of innovative ideas for their development. Peculiarities of conducting business in Ukraine (for small and medium-sized businesses) focus on creating economic results, obtaining maximum profit, reducing possible costs, and at the same time operate according to sustainable strategies. It is not often that business creates conditions for attracting innovation due to the possibility of reporting economic losses. In this way, business processes are directed to the economic mechanism, and not to the innovative mechanism of development. Secondly, the creation of innovative products requires not only the involvement of additional financial resources, but also the involvement of time. Business is fast and in most cases in some industries the operating cycle lasts from 1 day to a week, month, year. Thus, the creation of innovative products will be aimed at attracting the time of many operational cycles, which again will provide possible losses of financial resources. Thirdly, the involvement of innovative technologies raises some doubts about the necessity of their creation and the

effectiveness of their use in further work. This is due to the fact that the innovative development of competitors takes place constantly [1-7]. Due to competition, it is very often difficult to create an innovative product before competitors. Under such conditions of competition on the market, business companies cannot waste time or additional financial resources to try to win the fight. In addition, existing practice shows that the number of successful innovative companies is very small. This is one of the subjective factors influencing the development of the innovative component of business, which cannot have clearly defined predicted results. Under such conditions, business companies simplify their activities to improve the operational production process and create the most possible economic conditions for improving their results through the involvement of standardized models and indicators. There are also other conditions of non-use of innovative development for companies in practice.

Many researchers, both from Ukraine and foreign scientists, pay considerable attention to the direction of innovative development for business entities. The theoretical foundations and content make it possible to assert that today there are various understandings and many results of research conducted in the field of innovation [4-11]. Let's consider separate definitions of the category "innovation" and features of understanding.

Creation of a system of innovative technologies for the company is an integral component of their competitive development. Today, innovative development involves a fairly wide range of innovative products that are used for business and its development.

Innovative development is a key factor for successful business in today's world. Innovations allow enterprises to effectively solve problems, ensure stable growth and competitiveness.



**Fig. 1. Directions of communication for the development of innovations in business processes\***

*\*Source: generated by the author*

Basic tips for the development of innovations in business processes. Understanding the needs of the industry. It is necessary to keep abreast of the latest trends and developments in the relevant industry in order to develop effective innovative products and services. Development of innovative strategies – businesses must focus on developing strategies that will facilitate the discovery and implementation of innovations. It is important to understand which innovations can bring the greatest benefit to the company and its customers. Creation of innovative culture - is important to create an environment where employees will be stimulated to innovative thinking. Such an environment should facilitate the creation of new ideas and products, as well as help to implement them. Investing in research and development. Companies must invest in research and development to create new innovations. Investing in research and development can provide a company with a competitive advantage and ensure its success in the market [6-14]. Cooperation with other companies and startups. Cooperation with other companies and startups can help open up new opportunities and find innovative solutions for business development.

## **Modern technologies of innovative business development.**

Modern technologies of innovative business development allow companies to create and implement new innovative products and services, ensure more efficient use of resources and increase profits. The main modern technologies of innovative business development today are considered to be the use of cloud technologies and the Internet of Things. Cloud technologies allow businesses to store and process large amounts of data, reduce infrastructure costs, and expand opportunities to develop new products and services. The Internet of Things allows enterprises to collect and analyze data about products and services, which allows to improve them and implement new solutions, new models of product policy, new company development strategies.

Management strategies of innovative development for business are based on the understanding that innovative development is an important component of the success of any business in the modern world. Management of innovative development strategies is a key element for ensuring sustainable business growth and maintaining competitive advantages in the market [6-18]. The following are the basic strategies that a business can use for innovative development.

1. Development of new products or services. This may include developing new technologies, improving product functionality or design, or creating new services that respond to market needs.

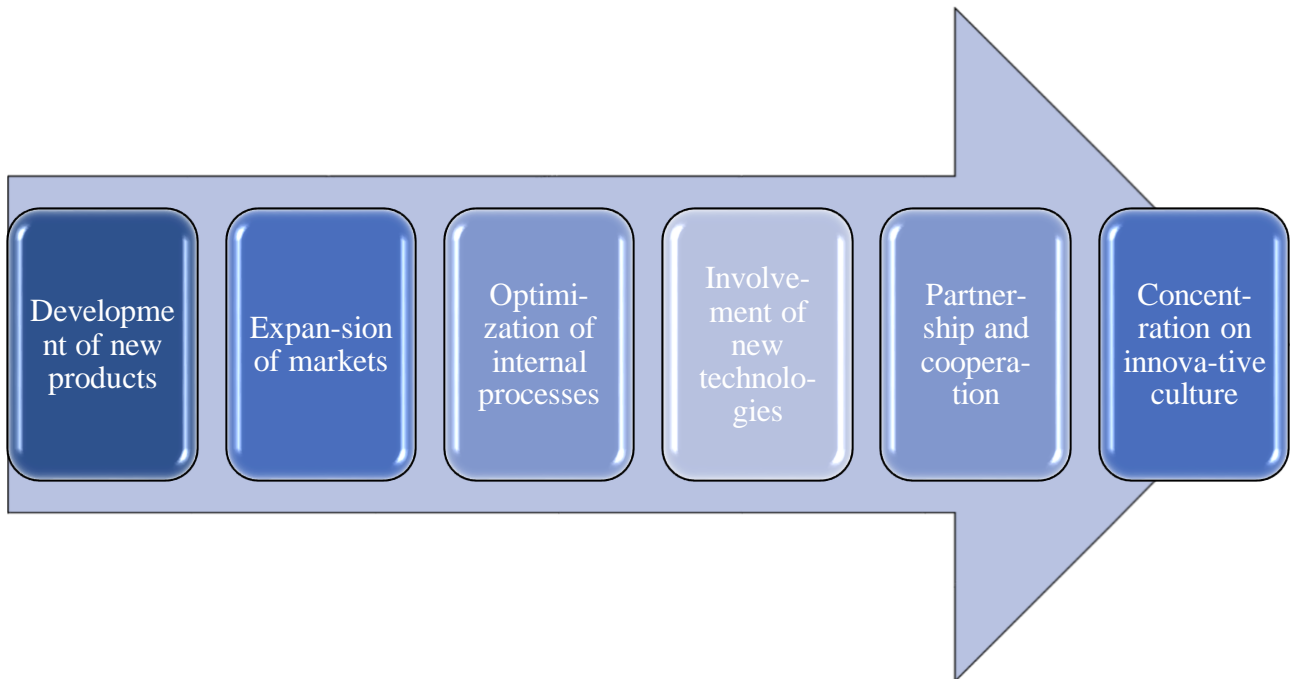
2. Expansion of markets or geography. A business can expand its reach into new markets or new geographic areas where there may be a strong demand for its products or services.

3. Optimization of internal processes. Improving internal processes will help reduce costs, increase productivity and efficiency, allowing businesses to compete more effectively in the marketplace.

4. Involvement of new technologies. A business can use new technologies to improve its products or services, increase production efficiency and reduce costs.

5. Partnership and cooperation. A business can form partnerships and collaborate with other companies to gain access to new technologies, markets or expertise.

6. Concentration on innovative culture. Companies can establish an innovation culture to encourage a creative approach to strategic management design.



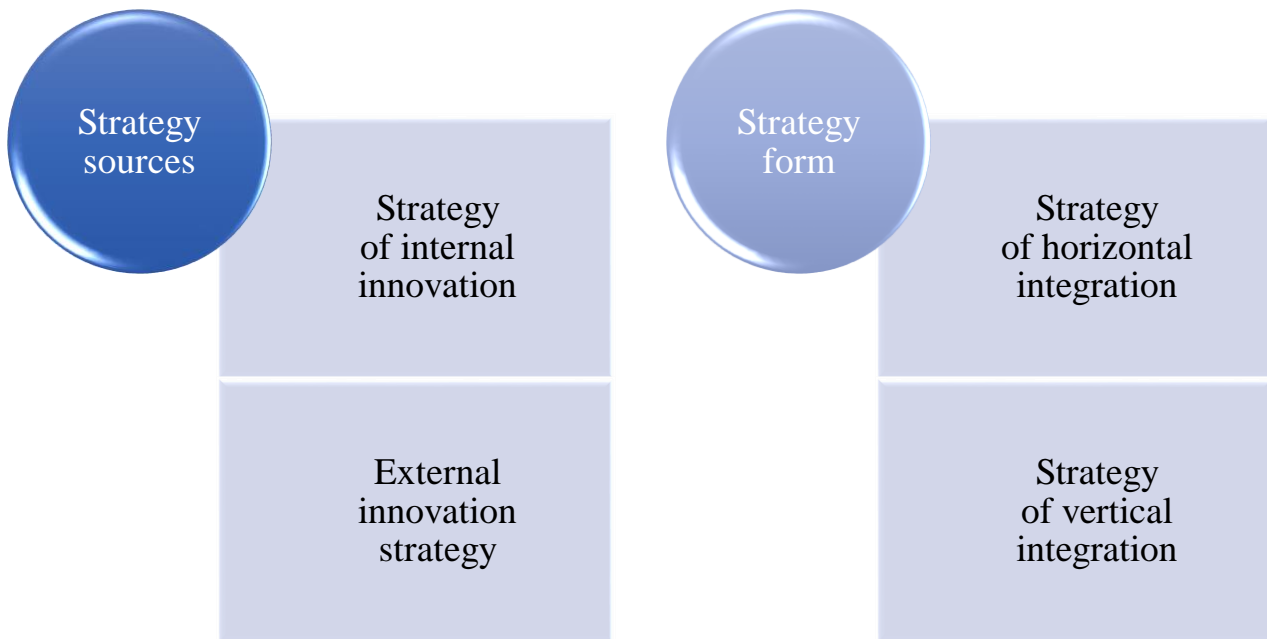
**Fig. 2. Basic strategies for innovative development of business processes\***

*\*Source: generated by the author*

Basic strategies are also a related platform for forming organizational strategies for innovative business development [19-23]. Innovative business development involves the application of various organizational strategies that can help enterprises become more competitive and successful in the market.

The strategy of internal innovation involves the creation of internal sources of innovation by creating a favorable atmosphere for creativity and innovation among the company's employees. This can be achieved through training, development and support of an innovative culture, the creation of special departments for the development of innovations, the use of technologies that enable joint work and collaboration of employees, and so on.





**Fig.3.Forms and sources of formation of innovative development strategies\***

*\*Source: generated by the author*

The external innovation strategy involves partnering with other enterprises, universities, research centers, etc. for the purpose of joint development and implementation of new ideas and technologies. This can be achieved through the creation of joint research centers, participation in conferences and exhibitions, involvement of innovation consultants, etc [21-15].

The strategy of horizontal integration involves acquiring competitors that have strong innovation capabilities in order to improve their innovation capabilities and competitiveness.

The strategy of vertical integration of innovations involves the inclusion of appropriate stages of creation and introduction of new products or services within the limits of one's own organization. This means that the company independently carries out the entire cycle of product creation and development, including research and development, production, marketing and sales.

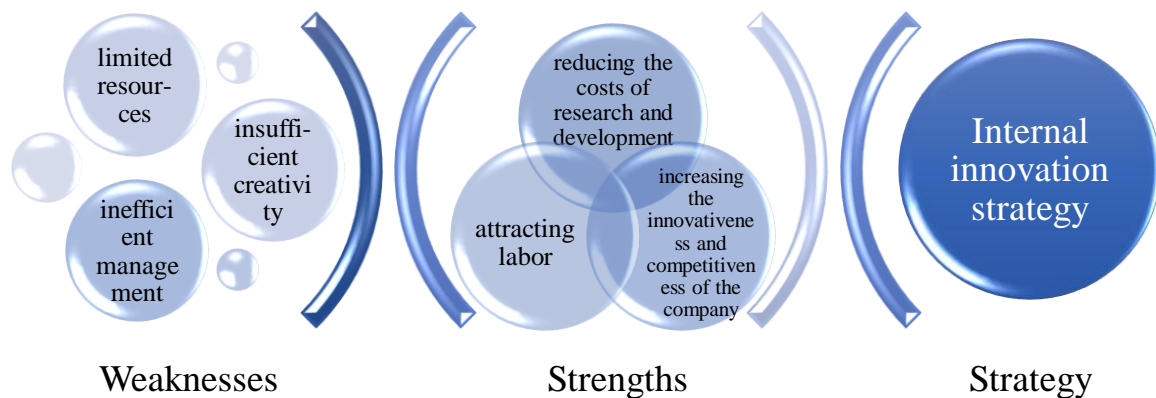
*Internal innovation strategy.*

Internal innovation strategy is an approach to the development of new ideas and approaches used within the company. The basic idea is that company employees can

make a significant contribution to the innovation process if they are given the opportunity to collaborate and contribute their ideas.

The main stages of the internal innovation strategy:

1. Creation of an internal innovation team – the company creates a special team that is responsible for the development and implementation of new ideas.
2. Involvement of the company's employees in the innovation process – employees are given the opportunity to contribute their ideas and participate in the development of new products.
3. Implementation of innovation management tools – the company implements special tools for managing the innovation process, which allow collecting ideas, analyzing them and implementing them.
4. Financing the innovation process – the company allocates enough resources to finance innovative projects and research.
5. Monitoring of the innovation process – the company monitors the implementation of innovation projects and analyzes their effectiveness [21-32].



**Fig. 4. Impact on internal innovation strategies\***

*\*Source: generated by the author*

The strategy of internal innovation can have many advantages, in particular: reducing the costs of research and development, increasing the innovativeness and competitiveness of the company, attracting labor. The strategy of internal innovation

has its advantages, but it can also have disadvantages, in particular, limited resources, insufficient creativity, inefficient management [26-32].

Often, the internal innovation process requires significant resources, such as human resources, time and money. If the company does not have enough resources to implement the innovation process, it can become an obstacle to its successful implementation. The internal innovation process may be limited by the experience and knowledge of the company's employees. This can lead to insufficient creativity and innovativeness of projects. Not all managers can be successful in managing innovative projects. If management does not know how to effectively manage the innovation process, it can lead to failure.

*Strategy of external innovation.*

The strategy of external innovation is an approach to creating innovations, which is based on the involvement of other companies or organizations in cooperation for the purpose of joint development of new products, technologies or services. This strategy allows the company to attract the knowledge, expertise and resources of external partners, which can significantly increase the efficiency and speed of innovation.

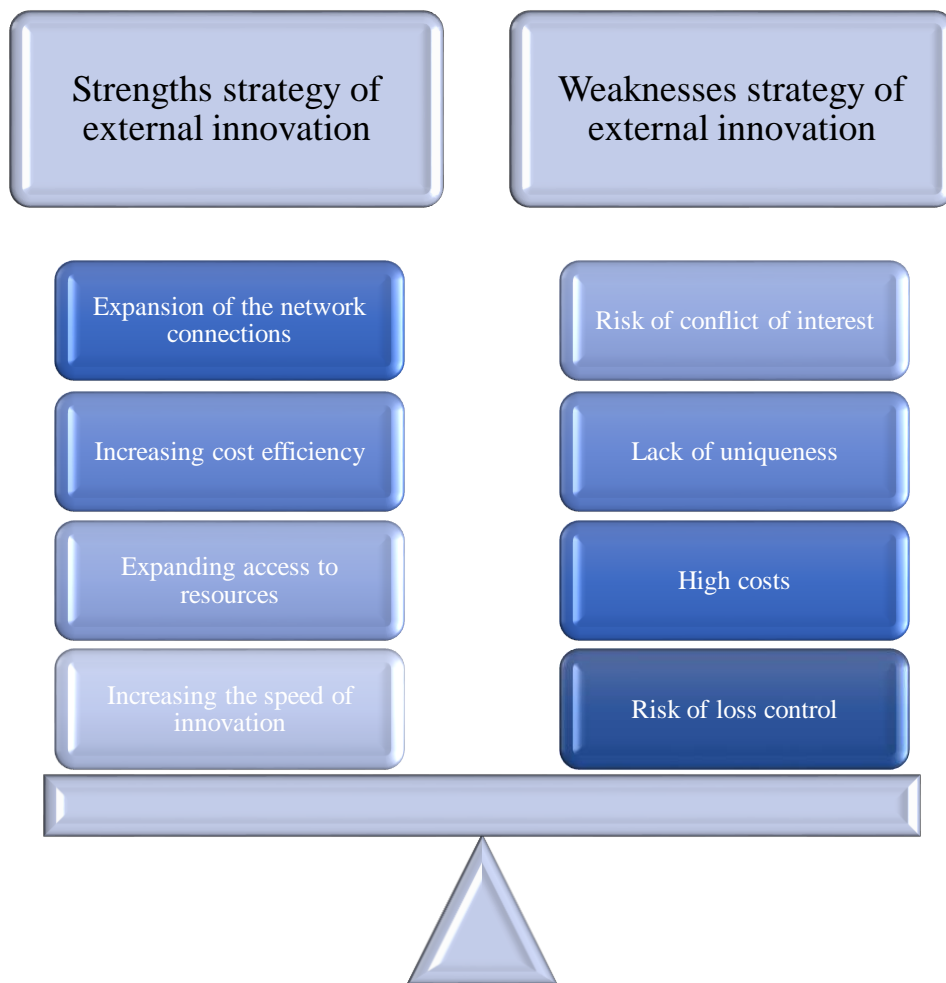
The main advantages of the strategy of external innovation:

1. Increasing the speed of innovation. Involvement of external partners allows the company to accelerate the process of developing new products or technologies by attracting new ideas, knowledge and experience.

2. Expanding access to resources. Companies can gain access to resources that they lack by bringing in external partners. This may include technical expertise, high-tech equipment, financing, etc.

3. Increasing cost efficiency. Cooperation with external partners allows the company to increase the efficiency of research and development costs, reduce investment risks and reduce the time required to launch a product on the market.

4. Expansion of the network of connections. Cooperation with external partners can help the company expand its network of connections, in particular, with representatives of other industries, markets and technologies.



**Fig. 5. Impact on strategy of external innovation\***

*\*Source: generated by the author*

However, there are some disadvantages when applying the strategy of external innovation. The strategy of external innovation may have some disadvantages, in particular:

1. Risk of loss of control, companies receive innovation from external sources, they may lose control over the innovation process. This can lead to a loss of competitive advantage and project management costs that companies cannot control.

2. High costs, attracting external sources may be more expensive than developing one's own innovation within the company. In addition, companies may be required to pay additional costs for the collection and analysis of information from external sources.

3. Lack of uniqueness, that is, external sources of innovation may be available to all players in the market, which means that they may not have a competitive advantage compared to other companies that also use these sources.

4. Risk of conflict of interest, if the company receives innovations from external sources, it may face a conflict of interest with the supplier or partner that provides these innovations.

5. The need to establish control mechanisms, companies must have control mechanisms that allow them to monitor the innovation process and ensure that innovation is consistent with their business strategies [23-35].

*Strategy of horizontal integration of innovations.*

Horizontal innovation integration is a strategy that involves cooperation between companies at different stages of production or in different industries to create new innovative products or services.



**Fig. 6. Impact on strategy of horizontal integration \***

*\*Source: generated by the author*

The main goal of such integration is to ensure more effective interaction between companies, which allows them to quickly develop and implement new innovative solutions on the market.

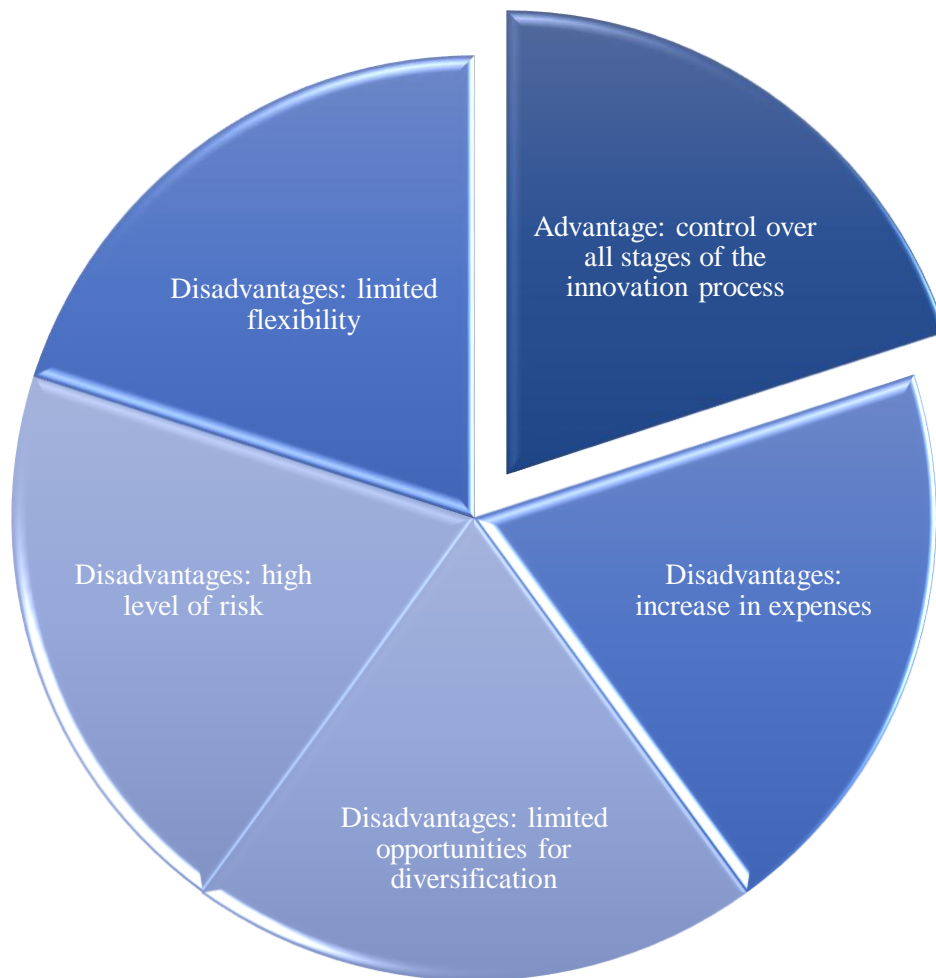
The main advantages of horizontal integration are: increased production efficiency (companies can share resources and knowledge, which ensures more efficient production and lower costs); expanding the range of products (companies can expand their range of products by jointly developing new products and services); increasing competitiveness (strengthening partnerships between companies can help them increase their competitiveness in the market); increasing innovation activity (cooperation between companies can contribute to more active creation and implementation of new innovative products and technologies). For the successful implementation of horizontal integration of innovations, it is necessary to conduct a detailed analysis of partners and their ability to cooperate, develop a clear action plan, define the roles and responsibilities of each company, and also prepare an appropriate investment portfolio [32-38].

Disadvantages of the strategy of horizontal integration of innovations. Horizontal integration of innovation is a strategy that consists in combining several companies into one in order to improve the efficiency of the production process and the development of new products. This strategy has drawbacks that can affect its success. Firstly, complexity of integration. Horizontal integration requires combining several companies with different cultures, processes and management systems, which can be very difficult. This may require significant costs to reorganize and integrate business processes, which may delay the innovation process. Secondly, the risk of reducing innovativeness: Horizontal integration can lead to a decrease in competition due to the influence of factors not of a market, but of a managerial nature, and due to the lack of use of innovative tools and innovative development of business processes, in general.

#### *Strategy of vertical integration of innovations.*

Vertical integration is the process of uniting enterprises belonging to different stages of the production process into a relatively single business organization.

Innovation plays an important role in such processes and can be carried out with the help of different strategies of vertical integration. The strategy of vertical integration of innovations involves the inclusion of appropriate stages of creation and introduction of new products or services within the limits of one's own organization. This means that the company independently carries out the entire cycle of product creation and development, including research and development, production, marketing and sales.



**Fig. 7. Impact on strategy of vertical integration of innovations\***

*\*Source: generated by the author*

The main advantage of this strategy is that it allows the company to maintain control over all stages of the innovation process, which can reduce the cost of external services and ensure greater efficiency and speed of product development. In addition,

vertical integration of innovation allows the company to ensure product quality. However, there are some disadvantages associated with using such strategies:

1. Increase in expenses. In most cases, vertical integration requires higher costs for the purchase of new enterprises and their integration into a single structure. This can cause a decrease in profits.

2. Limited opportunities for diversification. If a firm is vertically integrated, it may limit its diversification opportunities because it will be focused on a certain industry.

3. High level of risk. Vertical integration can require significant costs and time to successfully integrate different businesses. If the integration is not successful, it can lead to serious losses.

4. Limited flexibility. Vertical integration can limit the flexibility of the production process because it requires a single control over all stages of production. This can reduce the efficiency of production and innovative development.

The involvement of strategic management in the innovative development of companies aims to create a single effective mechanism of interaction between individual segments and components of the company. Use of the presented strategies is possible both individually and in an integrated system. In addition, each individual product line of the company can have its own innovative development strategy. Innovative development strategies for business create prerequisites for the formation of an effective architecture and architecture of business processes [21-29].

#### **Architecture of innovation process for business.**

The innovation process is the process of developing and implementing new ideas, products, services or processes that allows a company to expand its business and remain competitive in the market. The architecture of the innovation process for business can be considered from the following aspects.

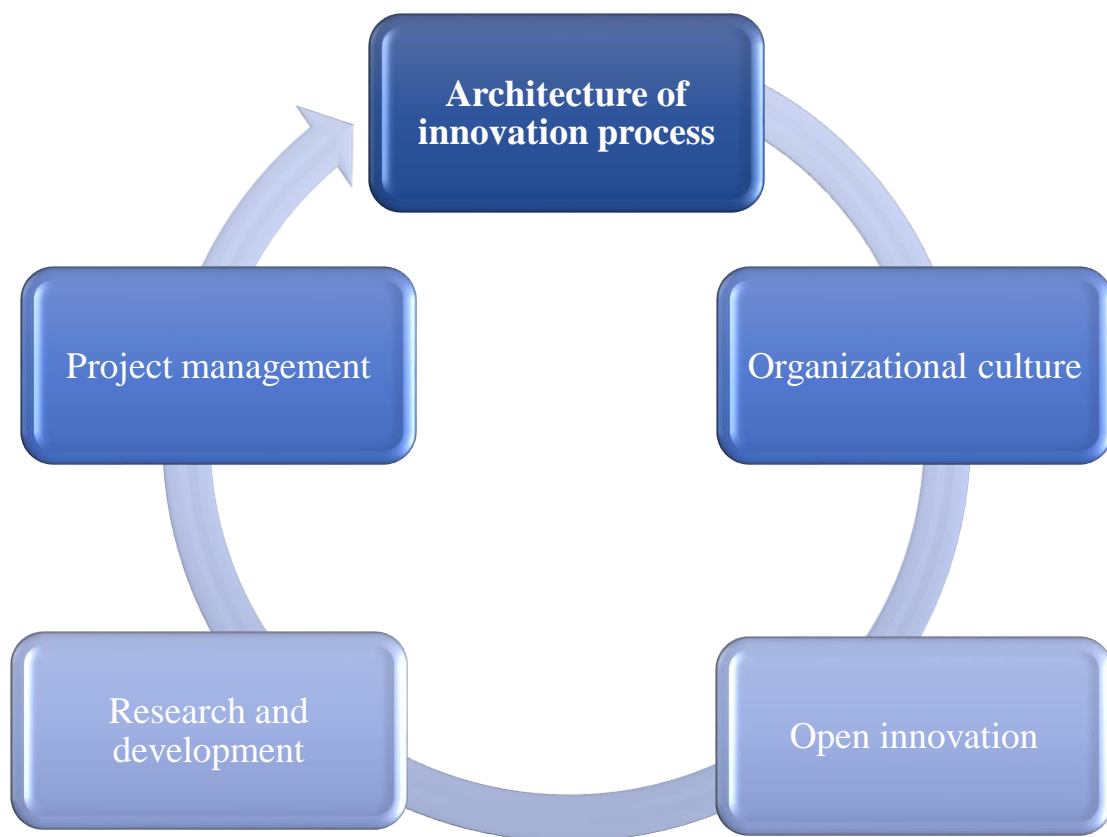
**Organizational culture.** The culture of the company should be aimed at creating and supporting innovation. Company management must establish values that support innovation, as well as establish a system of incentives for those who work on innovative projects.



Research and development. Companies should have a department dedicated to research and development of new products and services. This department must have the ability to quickly adapt to changes, implement innovative solutions and work on the development of products and services that will meet the needs of customers.

Open innovation. Open innovation is a process in which companies work with external organizations, including competitors, customers and partners, to develop new products and services. This approach can help a company quickly discover new technologies and innovative ideas [22-28].

Project management. For the successful implementation of innovative projects, it is necessary to have an effective project management system. This will allow you to control costs and create an effective portfolio of innovative strategic development for business.



**Fig. 8. Architecture of innovation process for business\***

*\*Source: generated by the author*

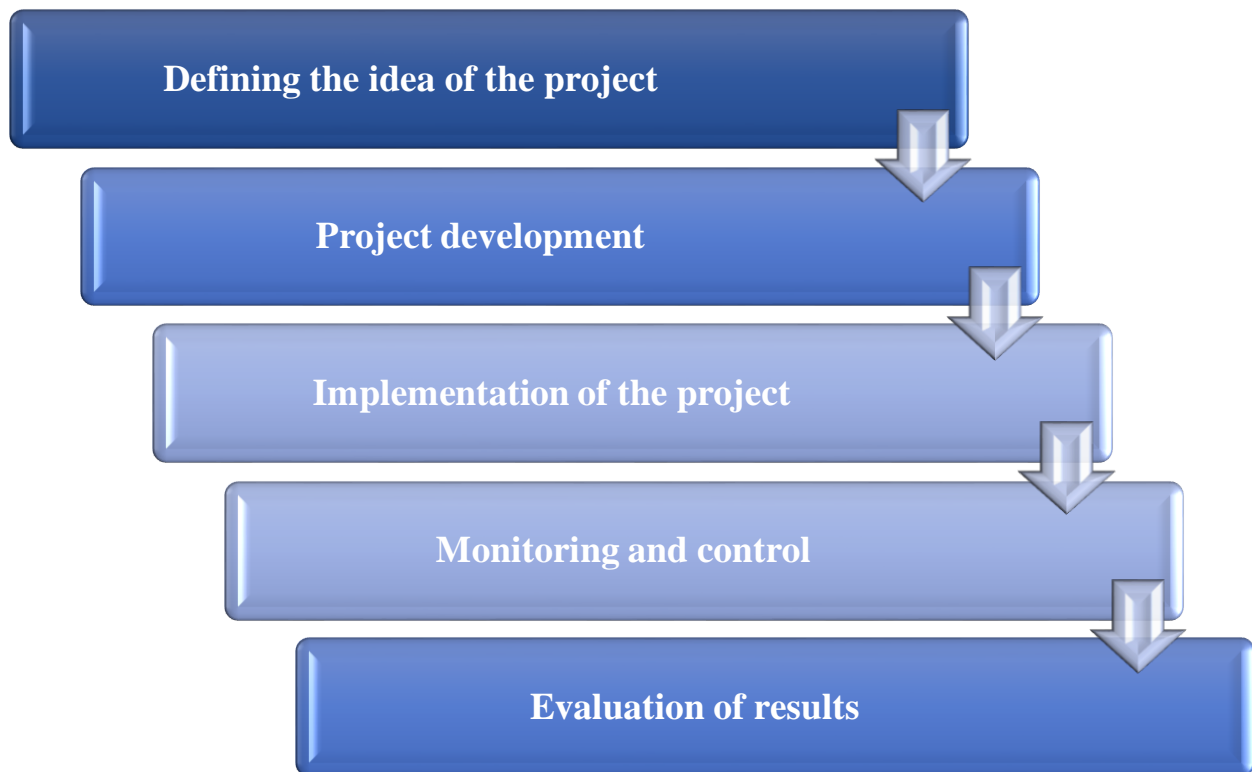
Open innovation is a strategy that allows a company to gain access to external knowledge, ideas and technologies in order to develop and maintain a competitive advantage. The basic idea is to interact with external parties such as customers, suppliers, academic researchers and other partners to develop new products, services and business models. Ideas how companies can apply open innovation can be as follows: involving external experts to solve complex problems and solve challenges; organization of internal and external competitions to stimulate ideas and develop new products and services; partnering with universities and research centers to gain access to the latest research and technology; involving customers in the process of developing products and services in order to receive a full range of feedback and recommendations; cooperation with other companies to share knowledge and experience, solve challenges and develop new innovations, etc. Open innovation can be a real asset to a business, especially in a complex and changing environment. For its successful implementation, it is necessary to have an open mind, be ready to cooperate and use new technologies [26-29].

Management of innovative projects for business is a process aimed at developing and implementing new innovative products, services or technologies. Such projects can be a key factor in business success, as innovation allows a company to be more competitive, more efficient and responsive to changing consumer needs. The construction of an effective model of innovative development through the prism of project management is formed according to basic algorithms.

Algorithmization of procedures for modeling the stages of management of innovative projects includes:

- defining the idea of the project, that is, establishing the purpose and potential benefits of the project, determining potential risks and benefits.
- project development, i.e. creating a detailed project plan, including attracting the necessary resources, assigning tasks and setting deadlines.
- implementation of the project, i.e. launch of the project and its implementation.
- monitoring and control, i.e. constant tracking of the project, evaluation of results and control over costs.

- evaluation of results, i.e. evaluation of project results and analysis of achieved indicators, tracking of goal achievement.



**Fig. 9. Algorithmization procedures for modeling innovative projects management\***

*\*Source: generated by the author*

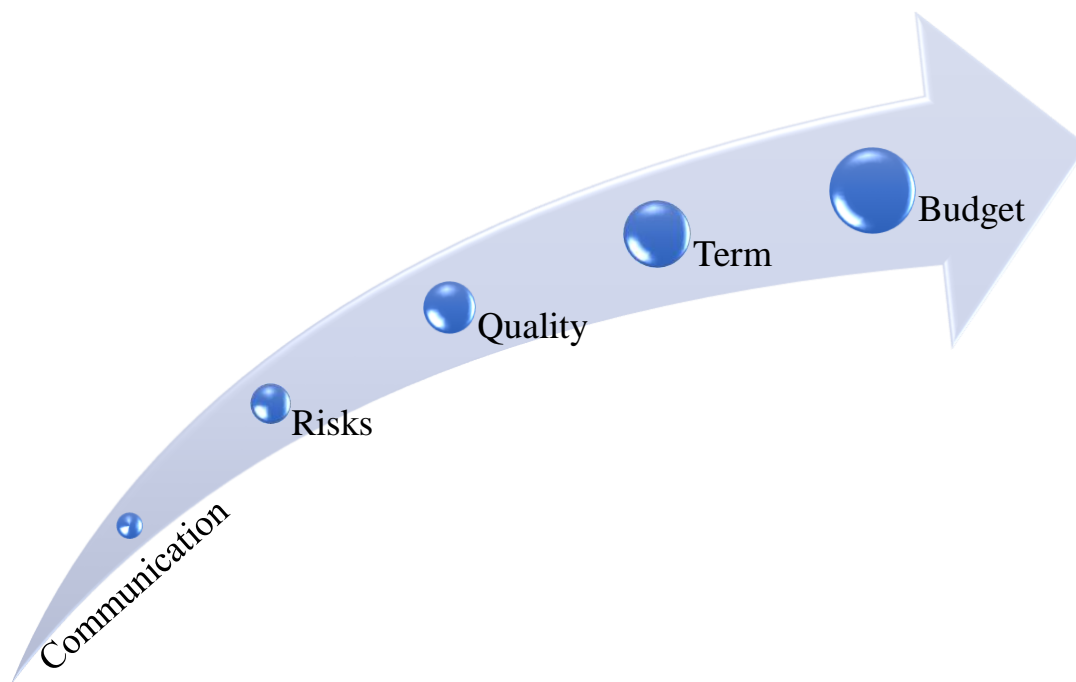
Financial project management, which is the process of planning, organization, control and coordination of financial resources spent on the implementation of a certain project, is of great importance in the project management system.

Financial projects can be diverse, they can be investment projects, projects for the development of a new product or service, construction, introduction of new technologies, business reorganization, etc. The main goal of financial project management is to ensure the successful completion of the project within the established budget and on time, with maximum efficiency and profitability. To do this, it is necessary to use various management tools and techniques, including budget planning, cost control, risk assessment and management, prioritization and decision-making,

interaction with stakeholders, and others. Financial project management is an important component of effective business management and is a key element in the successful implementation of the company's strategy [19-33].

Financial project management mechanisms can be different, depending on the specific project and its features. However, the main mechanisms used in the management of financial projects may include: budget planning, cost control, risk management, etc. Budget planning consists in drawing up a detailed plan of costs for the project and determining the resources necessary for its implementation. It is important to consider all possible costs and ensure sufficient resources to cover them. Cost control provides monitoring of project costs and identification of deviations from the plan. It is necessary to respond in a timely manner to changes and adjustments to the spending plan. Risk management is a mechanism for identifying and assessing project-related risks and developing a strategy for their management. It is necessary to identify possible risks in time and develop plans to reduce or eliminate them.

Financial project management involves setting priorities that will help ensure the successful completion of the project. The main priorities in managing financial projects are budget, term, quality, risks, and communication.



**Fig. 10. The priorities in managing financial projects\***

*\*Source: generated by the author*

**Budget.** One of the most important aspects of financial project management is ensuring the financial stability of the project. Budget management includes careful cost planning and cost control throughout the project. Project priorities are determined based on budget constraints and opportunities.

**Term.** Project timeline management is a critical success factor. Projects must be completed on time to avoid delays and additional costs. Prioritizing project timeline management includes identifying critical tasks and peak productivity to ensure project completion on time.

**Quality.** Quality management is another important aspect of financial project management. Determining the priorities of quality management consists in ensuring the compliance of the project with requirements and standards, as well as ensuring the quality of project execution.

**Risks.** Risk management consists in the identification, assessment and management of risks that may arise during the implementation of the project. Determining the priorities of risk management consists in ensuring the prevention of the most important risks and readiness to solve cases of unforeseen circumstances.

**Communication.** Communication management consists in establishing interaction and mutual understanding between partners and with potential counterparties in order to create close cooperation in various areas of business processes and areas of activity [29-32].

Project management for attracting innovative technologies for business involves the use of methods and strategies that allow effective introduction of new technologies into the company's business processes. Some of the key project management steps to leverage innovative technologies for business include the following vectors.

1. **Analysis of business needs.** Before starting the project, it is necessary to determine exactly what technologies are needed for the company's business, what problems they have to solve, and what requirements are placed on them. This will make it possible to choose the optimal technology option and build a rational project plan.

2. Selection of partners. For the successful implementation of innovative technologies, it is necessary to choose partners with the necessary competencies and experience. The choice of partners should be based on a thorough analysis of their reputation, experience and other criteria.

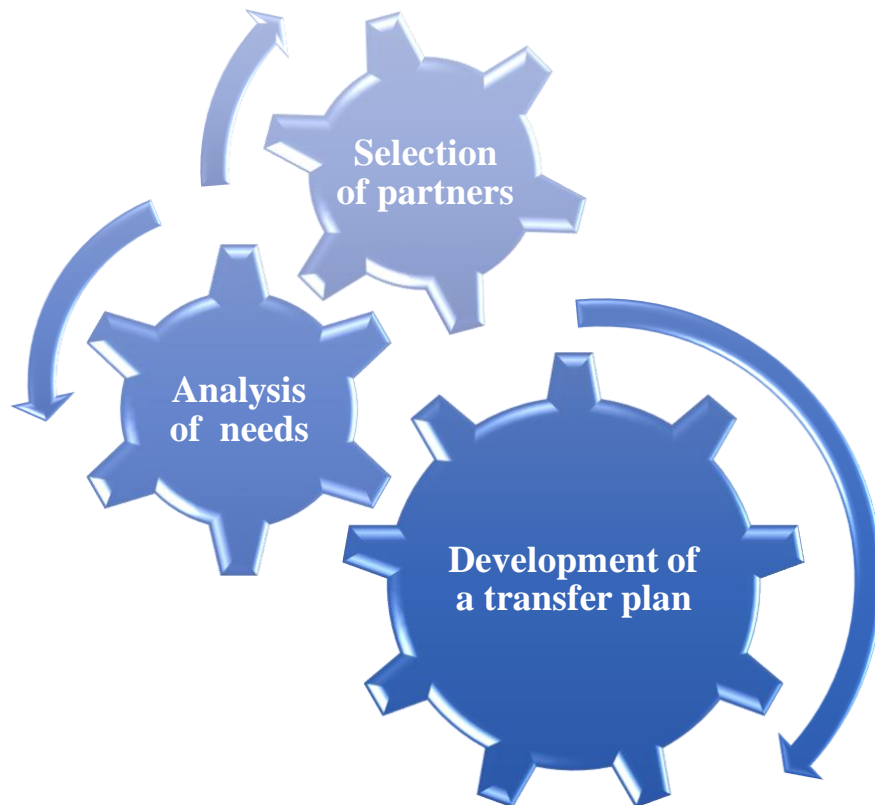
3. Development of a business plan. For effective implementation of innovative technologies, it is necessary to develop a detailed business plan that includes project goals, budget, schedule, risks and other parameters. The business plan must be transparent and understandable for all project participants.

4. Risk management. When introducing new technologies, unforeseen circumstances may arise, which may become a threat to the successful implementation of the project. Risk management should be built into the project to ensure controllability of business processes and leveling of possible or potential risks, especially for business processes in conditions of uncertainty [24-39].

The creation of modern projects and the involvement of technologies to ensure the innovative development of business requires the search for solutions in the area of the transfer of innovative technologies.

### **Transfer of innovative technologies.**

Technology transfer should be understood through the prism of the processes of transferring technologies and knowledge from one organization to another with the aim of using them to improve business processes and innovative development. Innovative business development involves the use of new technologies and ideas to improve the efficiency and competitiveness of the enterprise. The process of technology transfer can be carried out by both internal and external technology transfer. Internal technology transfer occurs within an organization when knowledge and technology are transferred between divisions or employees [19-26]. External technology transfer occurs through cooperation with partners, competitors or other organizations. The main steps for successful technology transfer and innovative business development form a basic procedural algorithm.



**Fig. 11. Procedural algorithm of technology transfer and innovative business development\***

*\*Source: generated by the author*

Let's consider in more detail the integrated components of the interaction between the transfer system components. Analysis of needs. It is necessary to determine exactly what technologies are needed for the company's business, what problems they have to solve, and what requirements apply to them. Selection of partners. For a successful technology transfer, it is necessary to choose partners with the necessary competences and experience. The choice of partners should be based on a thorough analysis of their reputation, experience and other criteria. Development of a transfer plan. The transfer plan should include a strategy for the use of technologies, a description of procedures and mechanisms, a toolkit and a composition of project management components [19-26].

Some types of transfer innovative technologies for business include: technology licensing, franchising, cooperation between companies, acquisition of technology, internal transfer of technology, creation of joint ventures.

#### Technology licensing

- Technology licensing is the transfer of rights to use technologies of one company to another company that is able to commercialize them

#### Franchising

- Franchising - the transfer of knowledge and production methods from the franchisor to the franchisee, which enables the latter to use the franchisor's successful business model

#### Cooperation

- Cooperation between companies - when two or more companies work together on a joint project, are able to interact and share knowledge and technologies to achieve common goals

#### Technology acquisition

- Technology acquisition - when a company acquires technology from another company or acquires the right to use this technology for its production

#### Internal transfer

- Internal transfer of technologies - transfer of knowledge and technologies between departments within the company to improve production processes and increase production efficiency

#### Creation of joint ventures

- Creation of joint ventures - when two or more companies create a joint venture for the purpose of developing and commercializing new technologies

**Fig. 12. Types of transfer innovative technologies for business\***

*\*Source: generated by the author*

Licensing of innovative technologies is the process of transferring the right to use technology from the owner to another company or person []. One of the main benefits of licensing innovative technologies is revenue growth, licensing can help



technology owners increase their profits as they receive revenue from transferring the rights to use the technology to other companies. Also increasing the popularity of technology, when technologies are licensed, they can become more popular and widespread. This can help technology owners attract more customers. De-risking licensing can help with technology development issues. When other companies take responsibility for using the technology, technology owners can reduce their costs of developing and managing the technology. Disadvantages of licensing innovative technologies include loss of control (when technology is licensed, technology owners may lose control over how their technology is used and developed) and a dynamic competitive environment (technology licensing may create competition for technology owners as other companies may start using the technology and compete with the owners of the technology in the market).

Franchising innovative technologies, one of the varieties of technology transfer, also can be profitable for business, but has its own opportunities and disadvantages. Access to new markets, marketing support, a ready business plan and technical support should be defined as the main opportunities of franchising innovative technologies. Franchising allows entrepreneurs to quickly expand their business due to access to new markets without large investments. With marketing support, the franchisor provides its franchisees with marketing support that helps increase sales and promote the brand. Franchisors usually provide a ready-made business plan, which allows the franchisee to quickly launch the business. The franchisor can provide technical support to the franchisee, which reduces the risk of errors and lowers staff training costs. Disadvantages include high start-up costs, franchisees usually have to pay a large amount to join the franchise and to use the franchisor's brand and other materials. Also obstacles are limited opportunities, franchisees must follow the rules and standards established by the franchisor, which limits their opportunities in conducting business. Dependence on the franchisor is a more negative side as well. Franchisees are completely dependent on the franchisor, who controls the brand, standards and regulations [16-29]. The lack of innovation through the prism of shortcomings should

be considered when franchisors focus on standards and to a lesser extent prefer to attract innovation as a not always successful investment.

Integration of companies in order to attract and use innovative technologies also has its own possibilities. The main opportunities for the integration of companies to attract and use innovative technologies:

- access to new technologies (integration of companies allows access to new technologies and innovations that can increase business efficiency and provide a competitive advantage);

- resource support (integration of companies can help provide resource support for business development).

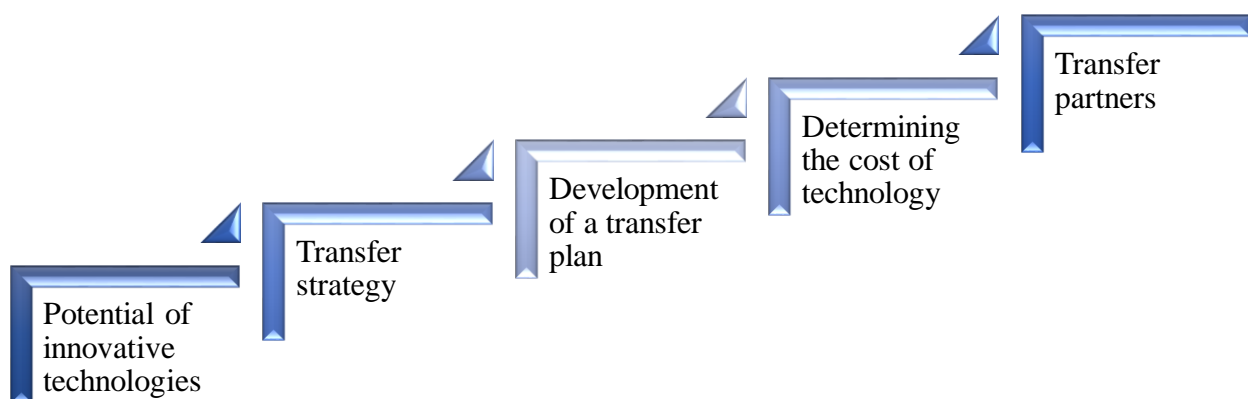
Internal transfer of innovative technologies is the process of transferring new knowledge, technologies and ideas within one company [16-26]. The increase in efficiency from internal transfer is provided on the condition that, when a company innovates within its own business. A company can reduce research and development costs because it already has access to internal resources and expertise. As the speed of adoption increases, innovations are transferred within the company, which can simplify the implementation process as there is no need to enter into new contracts or interact with new suppliers. Internal transfer of innovation can facilitate interaction between different departments of the company and increase the level of communication between them through increased cooperation and communication. Increased control and protection of intellectual property is applied on the condition that innovations are transferred within the company. This reduces the risk of losing control over the project and protecting intellectual property, as the company remains the owner of the intellectual property. Staff motivation when implementing the internal transfer of innovations can contribute to the development of new projects and increase the motivation of staff involved in this process. Therefore, the internal transfer of innovative technologies can be beneficial for companies that want to reduce risks in different areas of the company's activities.

The internal transfer of innovative technologies has its weaknesses, which can affect the efficiency of the innovation process. Such limitations are the number of

innovations, internal conflict, insufficient coordination. The internal transfer of innovative technologies is usually limited to the company's field of activity, which may limit the amount of innovation that can be introduced. Moving innovation between company divisions can lead to conflicts between employees who have different interests and views on innovation (internal conflict). Insufficient coordination of the internal transfer of innovative technologies can be a complex and sometimes inconvenient process that may require a lot of coordination and coordination between different departments.

**Management business solutions for the transfer of innovative technologies.**

Management of the transfer of innovative technologies is a complex process that requires organizational management to make a number of strategic decisions []. The step-by-step algorithm can be presented as follows (Fig. 13).



**Fig. 13. Algorithms for making business decisions for the transfer of innovative technologies\***

*\*Source: generated by the author*

The modern basis of important management business decisions for the effective transfer of innovative technologies are the following.

1. Evaluation of the potential of innovative technologies. Before deciding on the transfer of an innovative technology, it is necessary to assess its potential, which will

help the organization make an informed decision about whether it should invest in the transfer of this technology.

2. Choosing a transfer strategy. After assessing the potential of the technology, it is necessary to choose the optimal strategy for its transfer, which can be through licensing, franchising, joint development or other.

3. Development of a transfer plan. After choosing a transfer strategy, it is necessary to develop an action plan, which should include a clear formulation of goals, determination of resources, a marketing plan for technology, responsible for the implementation of the plan.

4. Determining the cost of technology. A company must determine the cost of the technology it wishes to transfer, and must also consider the costs of developing the technology, the potential profitability of using it, the competitive environment, and other factors.

5. Selection of a transfer partner. The company should choose a partner for technology transfer, special attention should be paid to the situation regarding competitive positions in the market and image.

### **Financial ideas and solutions for effective technology transfer.**

Effective technology transfer can be a big investment for a company, but requires appropriate financial tools and solutions. Such ideas and solutions that can help ensure effective technology transfer can be defined as: financing of technology development, financing of technology transfer, creation of a special fund and use of crowdfunding.

Financing technology development is a key factor affecting its potential. Companies can invest in their own research and development, or establish partnerships with academic and research institutions to jointly finance research and development. When financing technology transfer, companies can use various instruments to finance technology transfer, such as loans, investments, grants, license fees, etc. It is important to choose the optimal financing option depending on the technology transfer strategy and the cost of the technology itself. The creation of a special fund for technology

transfer can be an effective solution for attracting financing. Such a fund can be created at the expense of investments from organizations, private investors or government sources. The use of crowdfunding can be an effective tool for attracting financing for the development and transfer of technology.

The transfer of financial technologies means the transfer of knowledge, skills and technologies in the field of finance from one country or region to another in order to improve the financial sector and increase the efficiency of its work [30-38]. This process can be carried out through direct investment, technology licensing, partnership, cooperation and exchange of experience between financial institutions. Such a transfer can lead to a reduction in the cost of services, an increase in competitiveness, an improvement in the quality of customer service and a wider access to financial services for the population. Also, an important aspect of the transfer of financial technologies is the improvement of financial literacy of the population and the development of infrastructure, which makes it possible to increase the availability of financial services for a wide range of people [30-38]. However, it is important to ensure that this process is open, transparent and conducted on mutually beneficial terms for all parties to ensure the sustainable development of the financial sector as a whole. During technology transfer, companies may be forced to share confidential information with their partners, which may lead to its leakage. This can lead to great losses for the company, including loss of competitive advantage. A negative consequence should be understood as a high cost. Technology transfer can be a very expensive process, especially if it involves research and development of new technologies, which can be an unnecessary expense if companies cannot get enough benefits from using the technology. There are opportunities to obtain risks of technology failure. Sometimes technologies that have been used successfully in one company may not be suitable for another company, resulting in unexpected problems with the use of the technology and loss of investment. Negative features also include potential problems with patent law. Patent law issues may arise during technology transfer. If the companies cannot agree on the rights to

use the technology, it can lead to lawsuits and legal fees. Weaknesses arise in the absence of control over technology. After the transfer of technology, the company may lose control over it [30-36]. This may result in companies not being able to determine how the technology is being used or not being able to make changes to the technology in the future.

The advantages of the transfer of financial technologies can be the reduction of development costs, improvement of product quality, reduction of risks, expansion of markets, development of innovations, increase of business efficiency. When companies share their technologies, they can avoid unnecessary development costs, thereby ensuring faster commercialization of new products and services. If companies combine their technologies, they can improve the quality of their products and services. This can help increase customer satisfaction and increase customer loyalty. If companies use technologies that have been successfully implemented in other companies, then they can reduce the risks associated with the introduction of new technologies, which will help reduce production costs and increase the probability of success of new products and services. The transfer of financial technologies can help companies expand their business by opening access to new markets, which also includes additional opportunities for business growth and development. Through the prism of innovation development, the transfer of financial technologies will help companies increase their innovativeness. When companies gain access to new technologies, they can improve their market position.

Financial technology can help reduce the time it takes to process financial transactions and make processes easier for customers. This can help increase business efficiency.

However, at the same time, there will be a risk of losing confidential information. During technology transfer, companies may be forced to share confidential information with their partners, which may lead to its leakage. This can lead to great losses for the company, including loss of competitive advantage. A negative consequence should be

understood as a high cost. Technology transfer can be a very expensive process, especially if it involves research and development of new technologies, which can be an unnecessary expense if companies cannot get enough benefits from using the technology. There are opportunities to obtain risks of technology failure. Sometimes technologies that have been used successfully in one company may not be suitable for another company, resulting in unexpected problems with the use of the technology and loss of investment. Negative features also include potential problems with patent law. Patent law issues may arise during technology transfer. If the companies cannot agree on the rights to use the technology, it can lead to lawsuits and legal fees. Weaknesses arise in the absence of control over technology. After the transfer of technology, the company may lose control over it [30-36]. This may result in companies not being able to determine how the technology is being used or not being able to make changes to the technology in the future.

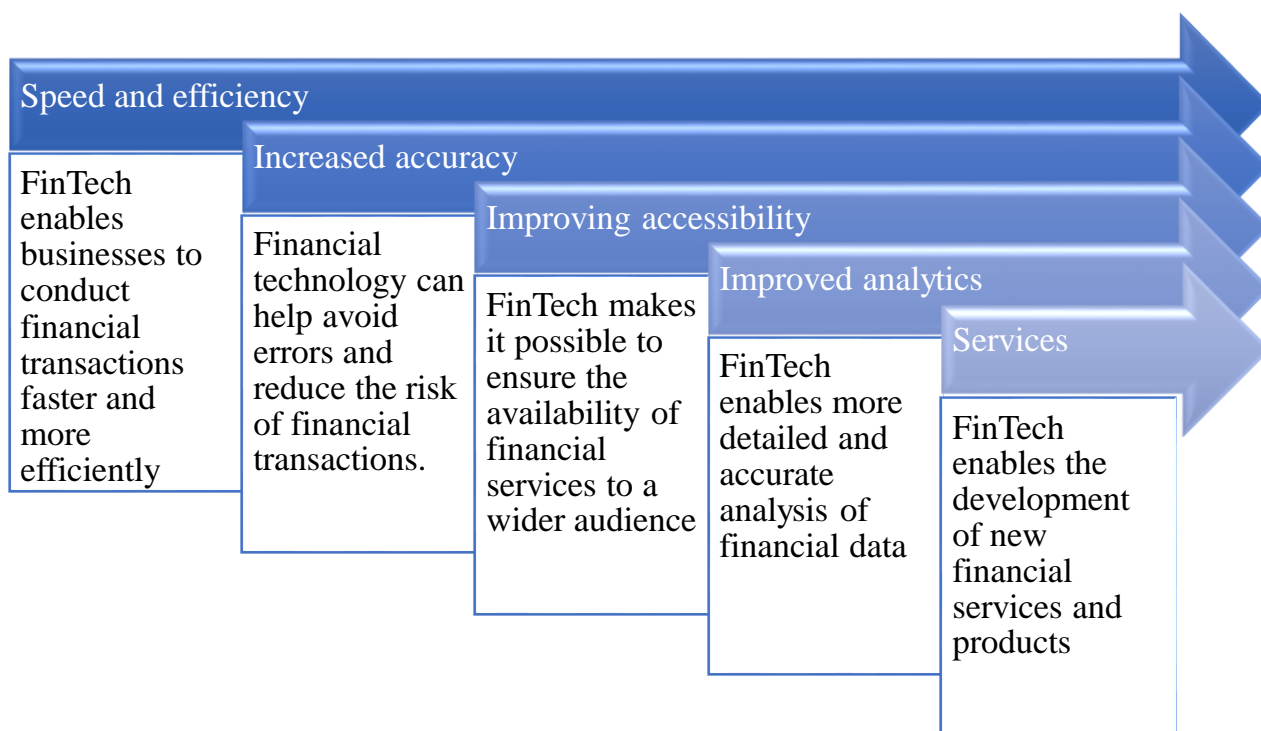
Some of the financial technologies that can be used for transfers include:

1. Blockchain (technology that allows creating safe, reliable and fast financial transactions, and also provides protection against fraud and data loss);
2. Cloud technologies (a solution that ensures data storage in the cloud, which enables companies to access data at any time and from any place);
3. Application Programming Interface (an interface that allows companies to interact with each other using open standards and protocols);
4. Machine Learning and Artificial Intelligence (technologies allow companies to create programs that can analyze and predict certain trends in the financial sector);
5. Mobile Payments (technologies allow using mobile phones for contactless payments and money transfers);
6. Robo-advising (technologies are used to provide investment advice using algorithms and machine learning);
7. Big Data (technologies of collecting and analyzing large volumes of data that allow companies to make decisions based on accurate and up-to-date data).

## Digital transformation through the prism of cloud financial technologies for business transfers.

Cloud financial technologies (cloud financial technologies) is a solution that ensures the preservation of financial data and information in the cloud, which is located on the servers of external providers [30-38]. These technologies enable businesses to store, process and transmit financial information over the Internet, instead of traditional local storage on computers or servers. The main advantage of cloud financial transfer technologies for business is the reduction of data storage and processing costs, as there is no need to invest in cloud data.

Cloud financial technologies, also known as FinTech, have become popular among businesses for transferring funds over the Internet. FinTech is a field that combines technology and financial services. Financial technology can help businesses improve their financial operations and provide more efficient financial management [30-38]. The main characteristics are presented.



**Fig. 14. Characteristics of FinTech for improving business performance\***

*\*Source: generated by the author*



Features of FinTech for business include the following. FinTech enables businesses to conduct financial transactions faster and more efficiently – the use of electronic payment systems allows for non-cash transactions in real time. Financial technology can help avoid errors and reduce the risk of financial transactions. For example, the use of automated accounting systems allows to reduce the risk of errors in accounting. FinTech makes it possible to ensure the availability of financial services to a wider audience, including small and medium-sized enterprises, like online lending can make financing available to small businesses. FinTech enables more detailed and accurate analysis of financial data – the use of analytical programs allows you to analyze data on sales and financial results of a business. Development of new services. FinTech enables the development of new financial services and products. For example, the use of blockchain technologies can help to use cryptocurrencies to carry out operations in the external environment of companies, as well as to develop internal potential.

The use of FinTech for business can have significant results, especially if the business uses financial technology skillfully. The main advantage of FinTech for business is cost reduction. Financial technologies allow businesses to reduce the costs of operations and processing of financial information. For example, the use of electronic payment systems can reduce the costs of processing cash transactions. Financial technologies thereby allow businesses to increase the efficiency of operations and ensure a more successful outcome.

FinTech, i.e. financial services technologies, can provide many other benefits for businesses.

Improvement of efficiency. Fintech platforms can help businesses reduce costs and improve process efficiency. For example, automated payment processing systems can significantly reduce the amount of time employees spend on manual data entry and information gathering.

Reduction of risks. Fintech tools can help reduce the risk of fraud and other criminal activity related to financial transactions. With tools such as biometric authentication, multi-factor authentication, blockchain and encryption technologies, fintech platforms can provide greater security for financial transactions.

Improving accessibility. Fintech platforms can help make financial services more accessible to people who live in remote locations or do not have access to traditional banking services. For example, mobile payment systems can provide the ability to pay for goods and services directly from a mobile phone.

Convenience. Fintech tools can provide a more convenient way for businesses to receive financial services, including the ability to make payments online and virtually. This can be especially convenient for businesses that operate in an online environment that requires a lot of electronic billing transactions.

Despite the many strengths that FinTech services can provide, there are also some weaknesses that can compromise their use for business. Threat to cyber security – Fintech tools can be completely dependent on technology and the Internet. This can cause the risk of cyber-attacks and data leaks, which can lead to the theft of financial information about customers, violation of their privacy, etc. Dependence on technology will cause a situation where a business using FinTech platforms may become dependent on technology, which may reduce its ability to function if technical problems arise. Not all clients may be interested in using FinTech services. For example, older people who are not sufficiently computer literate may be less interested in using these services. This is a market constraint. An insufficient regulatory framework for the Fintech industry is not always sufficiently regulated. This can lead to a lack of quality control over the activities of FinTech companies and increased risks for businesses that use their services [36-42].

FinTech strategies for businesses can vary depending on the type of business and its needs. Here are some general strategies that businesses can use to take advantage of FinTech innovations:

1. Use of digital platforms. A business can use FinTech innovations to create its own digital platform where customers can access products and services, which can help increase the convenience and accessibility of services for customers and reduce service costs.

2. Expansion of the financial portfolio. A business can expand its financial portfolio by using FinTech tools, such as investment platforms or online lending, which will help increase profitability and diversify the business portfolio.

3. Use of automation. Fintech tools can help businesses automate processes and reduce reliance on manual work.

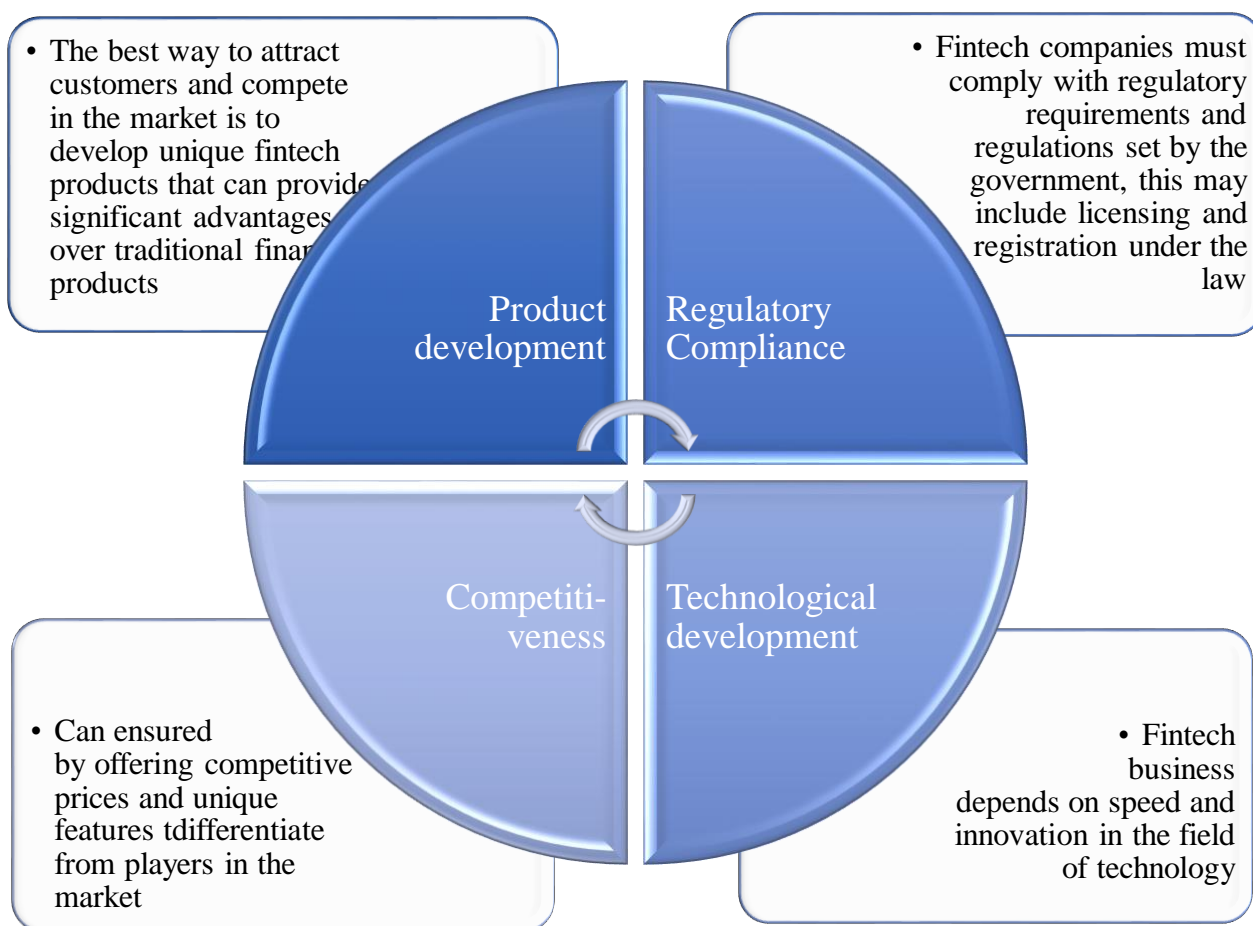
FinTech is a technological sector that combines finance and technology and provides financial services and solutions using innovative technologies. Managing a FinTech business can be a challenging task as it depends on many factors such as technology, laws and regulations, competition, etc. [30-42]. However, the following mechanisms can help manage a FinTech business more effectively:

1. The best way to attract customers and compete in the market is to develop unique fintech products that can provide significant advantages over traditional financial products. For example, it can be electronic money storage, free international transfers, startup funding, etc. (Product development)

2. Fintech companies must comply with regulatory requirements and regulations set by the government, this may include licensing and registration under the law (Regulatory Compliance).

3. Competitiveness can be ensured by offering competitive prices and unique features that differentiate you from other players in the market (Competitiveness).

4. Fintech business depends on speed and innovation in the field of technology (Technological development) (Fig. 15).



**Fig. 15. Mechanisms Fintech management for business development\***

*\*Source: generated by the author*

World experience proves that the use of the transfer of innovative technologies, regardless of a number of weaknesses, has a strong prerequisite for use in business management. One of the important strategic decisions is the creation of conditions for the involvement of the sphere of innovative technologies for the post-war recovery of Ukrainian business. Today, in various industries, individual components of innovative development are already being developed and widely implemented, but there are areas of business that almost do not use such opportunities.

The conducted research also allows us to draw conclusions that there is no homogeneity in the involvement of them or other components of innovative development. Some areas increasingly use the transfer of innovative information

technologies to ensure the reengineering of business processes in the direction of digital adaptation and transformation. Other business entities actively involve electronic financial technologies to transfer business online, taking into account the territorial conditions of operation. Some companies use the possibilities of the transfer of innovative technologies to expand production areas and directions due to technological features. The use of innovative development is also a successful solution for companies that had to use business relocation tools.

Modern financial technologies, unfortunately, are only at the beginning of their market attraction in Ukraine. Such a situation is influenced not only by legal support and state regulation, but also by the possibility of wide use of tools in the conditions of the Ukrainian economic and financial system. It should be noted that the current stage of the development of the financial system of Ukraine is quite developed and has all the necessary prerequisites for the involvement of innovative technologies in order to accelerate the integration processes into the world financial system using the latest technologies.

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