



*Dedicated to the 100th  
anniversary of the Dnipro  
State Agrarian and  
Economic University*

**SCIENTIFIC AND METHODOLOGICAL PRINCIPLES OF ACCOUNTING,  
FINANCIAL, INFORMATION AND LANGUAGE AND COMMUNICATION  
SUPPORT FOR SUSTAINABLE DEVELOPMENT OF AGRIBUSINESS  
ENTITIES AND RURAL TERRITORIES**

**COLLECTIVE MONOGRAPH**

**DNIPRO  
2022**

UDC 657  
BBK 65.052  
O 16

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*Recommended by the Academic Council of the Dnipro State Agrarian and Economic University (protocol № 6 from 31.03.2022).*

Scientific and methodological principles of accounting, financial, informational and language and communication support for sustainable development of agribusiness entities and rural territories: a collective monograph. / edited by H. Pavlova and L. Vasilieva. Dnipro: Printing house «Standard», 2022. - 420 p.

The monograph examines the scientific problems of building accounting and financial support for sustainable development of agribusiness entities and rural areas. Modern information systems and technologies in accounting, auditing and taxation are considered. The theoretical, organizational and methodological principles of language and professional training of a specialist in agriculture, as well as modern technologies of education in higher educational institutions are revealed.

The collective monograph was published within the framework of the State Budget research topics “Organizational and methodological principles of accounting, reporting and control in the system of economic stability of enterprises” (state registration number 0116U003135) and “Finance, banking system and insurance in integrated rural development” (state registration number 0119U001573), “Information technologies and mathematical methods for the development of the agricultural sector of the economy” (state registration number 0120U105338), “Language and professional training: linguistic, social, cognitive, communicative, cultural aspects” (state registration number 0116U005132).

The publication is aimed at professionals engaged in practical activities in the field of regional policy, academics, government officials and the general public.

**UDC 657**  
**BBK 65.052**

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## *Preface*

Modern economic development of agricultural entities is influenced by a variety of factors, covering a wide range of economic areas, including, inter alia, the organization of accounting, auditing and control in the system of economic sustainability of agricultural enterprises, their informatization, institutional support and strategy of financing the development of the agricultural sector of Ukraine, innovation and investment activities of enterprises.

The agricultural sector of the economy, as part of the national economy, cannot ensure the appropriate level of investment attractiveness of economic entities and rural areas, further innovation and competitiveness of national agricultural production in the world economic system without proper informational presentation of all competitive advantages, features and trends, risks and problems. The quality of information services of managers of different levels, and hence the effectiveness of the functioning of economic entities in general, depends on the coherence and organization of accounting and analytical, financial support.

The materials of the monograph are aimed at scientific research, generalization and development of recommendations on possible ways to solve the main problems of accounting, financial, information and language and communication support for sustainable development of agribusiness entities and rural areas.

Realizing that not all aspects of the research topic have been comprehensively reflected in the collective monograph, and some provisions and conclusions may be the subject of scientific discussion, we hope that the theoretical generalizations, conclusions and recommendations developed in this study will be used by scientists, teachers, graduate students and students of higher educational institutions of agrarian and administrative profiles, employees of public administration and local self-government bodies, entrepreneurs and other interested persons who are interested in this issue.

In this monograph, the authors summarize and supplement the results of many scientific studies and developments on the construction of accounting, financial, information and language and communication support for sustainable development of agribusiness entities and rural areas. The first section of the monograph “Mechanism for ensuring economic security of agribusiness entities and rural areas” is devoted to highlighting the main problems and areas of their solution to ensure economic security of agribusiness entities. Vasilieva Lesia – paragraph 1.1, Kravchenko Mykola – paragraph 1.2 worked on the preparation of this section. The second section, “Development of theory and practice of accounting and public reporting: challenges of the modern times”, highlights the scientific, theoretical, organizational and applied foundations of accounting in the activities of the entity. Pavlova Halyna worked on the preparation of this section of the monograph – paragraph 2.1. The third section of the monograph “Taxation of enterprises in modern economic conditions” highlights current issues regarding the taxation of agribusiness entities and rural areas. Minkovska Alona – paragraph 3.1, Atamas Oleksandr – paragraph 3.2 worked on this section. The fourth section of the monograph, “Financial policy

and mechanism of its implementation in the system of ensuring sustainable development of agribusiness entities and rural territories”, is devoted to highlighting the main problems and solutions to the financial policy of agribusiness entities. Khalatur Svitlana – paragraph 4.1, Brovko Larysa – paragraph 4.2, Dobrovolska Olena – paragraph 4.3, Pavlenko Oksana – paragraph 4.4, Tkachova Oksana – paragraph 4.5 worked on the preparation of this section. The fifth section “Modern information systems and technologies in accounting, auditing, taxation” discusses modern information systems and technologies in accounting, auditing, taxation. Dmytriieva Viktoriia – paragraph 5.1, Kozenkova Vladyslava – paragraph 5.2, Shcheka Vadim, Yashchuk Kateryna – paragraph 5.3, Nuzhna Svitlana – paragraph 5.4. The sixth section of the monograph “Modern learning technologies in higher educational institutions” covers current issues of modern learning technologies in higher education. Kramarenko Tetiana, Rezunova Olena – paragraph 6.1, Lukatska Yana – paragraph 6.2, Chornobai Vira, Zhemanova Olena – paragraph 6.3, Rezunova Valeriia – paragraph 6.4 worked on this section. The seventh section “Language and professional training of the specialist in agricultural sector” reveals the problems and ways to solve them regarding the linguistic and professional training of agricultural expert. Stasyuk Tetyana – paragraph 7.1, Pantileienko Ekaterina – paragraph 7.2, Stukalo Olena – paragraph 7.3 worked on the preparation of this section of the monograph.

We express our deep gratitude to the reviewers of the collective monograph:

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# ***SECTION 1. MECHANISM FOR ENSURING ECONOMIC SECURITY OF AGRIBUSINESS ENTITIES AND RURAL AREAS***

## **1.1. THEORETICAL FUNDAMENTALS OF THE MECHANISM OF FORMATION OF STRATEGY FOR ENSURING ECONOMIC SECURITY OF THE ENTERPRISE**

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**Summary.** The economic essence of the conceptual apparatus in relation to the categories "economic security of the enterprise" and "strategy for ensuring the economic security of the enterprise" has been specified. It has been noted that the economic security of the enterprise is characterized by many of its types and approaches to the definition in order to form a comprehensive definition of strategic economic security systematized classification features. The approach to the strategy development of enterprise economic safety maintenance on the basis of sustainable development has been formulated. The mechanism of strategy formation of the enterprise economic safety maintenance has been defined.

**Keywords:** economic security, threats, mechanism, enterprise, strategy, improvement

The priority task of ensuring the economic security of enterprises in the modern world is to create the conditions for dynamic growth, stable and efficient activities, the formation of the potential for sustainable development. Rational use of all enterprise resources, important for its activities, can be achieved by reducing the impact of negative factors on the enterprise economic security, which requires the development and implementation of special economic security policies.

Ensuring economic security is an important aspect of the successful operation and economic development of the enterprise and largely affects its efficiency. The policy of economic security is aimed at ensuring stable and dynamic development, constant balancing and harmonization of activities that are achieved using all types of resources and opportunities available to the company.

The formation and implementation of economic security policy is through the process of creating an internal system of economic security, focused on identifying bifurcation points in development. Insufficient attention to the issues of economic security policy in order to ensure the effective functioning of the enterprise is largely reflected in the results of activities, growth dynamics and sustainable development of the enterprise.

The scientific approach to the concept of "economic security" was formed in the twentieth century in connection with the state's attempts to regulate domestic and

foreign economic relations [17]. It should be noted that domestic researchers associate economic security with the protection of vital interests and the ability to meet the society needs.

Economic security is considered in connection with the threats, risks and dangers associated with trade relations. Western scholars understood economic security in connection with national interests, the presence of military and economic threats from outside. At the same time, the appeal to the issues of economic security in Ukraine was initiated by the difficulties of the transition to market relations, so the domestic economic factors are mainly analyzed. And in the West, foreign policy aspects of economic security are of interest.

Considering the world experience of defining the concept of economic security, it is impossible to identify a single approach to this concept. Common to any national position on this issue is the view that the economic security of any country is the basis for stable socio-economic development and prosperity of the nation.

In the historical context, the concept of "economic security" was preceded by the concept of "national economic security", which first appeared in the United States during the economic crisis in 1970, and then began to be used in Western scientific literature in the 80's of the twentieth century.

It should be noted that the concept of national security is characterized by its connection with the concept of "the rule of law", which means the presence of legal influence on key elements of national security: national interests and national priorities. Based on the content of these elements, specific tasks of national security are set and solved at all levels of government: the state, the subject, as well as society and the individual. This allows us to consider issues of national security not only at the state, regional, interregional, local levels, but also at the micro level - in relation to the enterprise activities.

The above allows us to conclude that this approach to the content of the category "national security" provides some clarity in the development of the main directions and objectives of national security, which are implemented at all levels of government and in all spheres of public activity. It is important that this concept is adequately perceived in relation to the sphere of economics, which served as the basis for the definition and independent development of the category of "economic security".

In the USSR, various state structures responsible for the economic security of enterprises were involved in ensuring the country's economic security and counteracting external and internal threats. Ukraine's entry into the global economic space, the creation of a country with an open market system necessitated the economic security of economic entities both with the help of the state and its own forces and the creation, thus, of a single system of economic security.

It should be noted that in Ukraine the approach to intensifying the consideration of the problem of economic security and its components began after obtaining the status of a sovereign state in 1991. It should be noted that one of the first regulations to address the need for economic security was the Concept of Economic Security (1996), according to which economic security is understood as

"the state of the economy, society and institutions of state power, which ensures the implementation and guaranteed protection of national economic interests, progressive socio-economic development of Ukraine, sufficient defense potential even in adverse internal and external processes" [15].

On August 11, 2021, the Decree of the President of Ukraine "On the Strategy of Economic Security of Ukraine until 2025" was signed, according to which "the strategy of economic security of Ukraine development of the national economy, integration of Ukraine into the European economic space, development of equal mutually beneficial economic cooperation with other states "[12].

The need for a dialectical understanding of the concept of "economic security" is due to the fact that security cannot be complete and is a unity of stability and variability. As social life becomes more complex, the mechanisms that were previously used as stabilizers of social life acquire a destructive quality, forcing the social system to develop. Like any system, the social system is characterized by a state of temporal and relative equilibrium, which is replaced by a state of imbalance. This forces us to supplement the dialectical approach to the understanding of economic security with a synergetic one. These approaches can be used to characterize the processes of the modern world.

According to Sudakova O.I. [14] socio-economic aspect of economic security is a group of interrelated factors that can create serious threats to economic security and related to the functioning of society and public consciousness. Economic security is related to the social sphere, as indicators of economic security depend on labor productivity, skills of workers, the level of health care development, income level, receptivity to innovation and so on. This suggests that ensuring economic security must be linked to creating opportunities for these indicators to grow. Developing this idea, we can say that economic security depends on human capital as a person's ability to work, to grow creatively, to maintain health, to acquire skills, to start a family and so on.

Under the influence of the globalization process, the following features are formed in the understanding of economic security: there is a global level of economic security, in this regard, the growing role of global economic and political institutions; the role of nation-states, their ability to influence or oppose global processes is reduced; sustainability in a global society is not a fundamental concept, the world is losing its signs of stability, so the understanding of stability is understood as a state of temporary equilibrium and as an opportunity to control fragments of reality; with the participation of the mass culture of economic centrism and the ideology of consumption spread to the entire population of the planet, so it is natural to perceive the spread of commodity-money relations, which are multiplied aspects of economic security; commercialization of risks turns security into a profitable measure, so there are new risks, growing demand in the market of economic security [19].

Global contradictions in social, economic and political terms continue to grow, and the practice of combating threats is shifting to another, narrower, more private plane. The analysis of these factors leads to the conclusion that the lack of a generalized vision of the threats of the modern world hinders comprehensive control

over the set of indicators necessary for the balanced existence of the biosocial system. This threatens to upset the balance of basic life support systems, deteriorating water quality, air, disruption of the reproductive mechanism. To prevent a catastrophe, it is necessary to restore a comprehensive and systematic vision of economic security. Accordingly, the question arises as to what will become the center around which the concentration of ideas about economic security is possible in the modern world.

Modern worldview is based on the ideas of uncertainty, ambiguity, fragmentation of the world [10]. Economic security loses its integral meaning, ceases to be an integral concept and falls apart into smaller and smaller fragments. Attempts to ensure economic security have a significant effect only in local areas. As the controlled sphere expands, the effectiveness of control decreases. Increasing localization is in the hands of those who benefit commercially from economic security.

Due to the commercialization of economic security, it is becoming increasingly elitist, and there are whole communities on the planet, which are not the object of economic security. A comprehensive understanding of economic security draws attention not only to economic factors, but the quality of the environment, the consequences of production activities, the development of civil society institutions, the ability to self-government, the availability of opportunities to meet human needs.

In this sense, economic security will include concern for creating conditions for a decent lifestyle, developing social programs, creating conditions to increase the educational potential of the population, combating the spread of dangerous diseases, ensuring access to quality health care, improving legal and social protection, conditions for ensuring economic security. Economic security is the provision of a set of conditions for human development.

In the context of global challenges and threats, the most important component of economic security as a system is the concept of preventing security threats to the country by implementing short-term, medium-term and long-term measures. Methodologically, such a system of comprehensive measures can be traced, in our opinion, in the forecasts formation of socio-economic development, budget, monetary, tax policies of the state. It is a serious tool for identifying risk and crisis situations in the economy and determining the scenario conditions for the next planning and forecast periods.

The analysis of the economic environment shows the high dynamics and diversity of market processes. The development of the economic space is influenced by many factors reflected in these concepts, so when developing options for economic security strategies can use the provisions contained in all three concepts, because in modern conditions they are not mutually exclusive, but confirm each other.

It should be noted that the transformation of conceptual approaches to economic security reflects the patterns of cyclical economic development and their features inherent in individual phases of cycles, and also requires the development of economic foundations for studying relevant aspects of economic security. In this regard, there is undeniable interest in the list of basic methodological approaches



given by Chernish O.V. and Tarasenko I.O. [5].

1. The security of economic systems, from the point of view of catastrophe theory, according to which an economic system close to complete depletion of its own resources, without the necessary resources and tools to prevent threats, may lose stability, up to destruction.

2. Security of economic systems within the risk theory, in which risk is considered the main category of security. Accordingly, the threats to the security of the economic system are prevented by identifying risks and neutralizing them.

3. Security of economic systems within the conflict theory includes methods of recognizing, regulating and resolving conflicts at minimal cost.

4. Security of economic systems in the framework of the theory of ordering and self-organization of systems contains provisions on the need to find and use internal resources to overcome the crisis and secure development.

5. Security of economic systems in the framework of the theory of tektology, according to the provisions of which the factors that ensure the balance of systems, cases of system imbalance, leading to negative or positive changes.

Based on the study and generalization of qualitative characteristics of different conceptual approaches, as well as current trends analysis in world and domestic economies Truhan O. L. defines economic security "as a state of socio-economic system of a steadily developing state, which allows guaranteed protection of national-state interests" [16].

Economic security can also be defined as a set of properties that reflect the "state of the production system that contributes to the goals of the entire economic system" [8]. Korniyenko T.O. defines economic security as "a combination of economic, political and legal conditions that ensures the long-term production of the maximum number of economic resources per capita in an efficient way" [9].

In our opinion, in the systematic consideration, any category of economics should be considered as complex (multilevel, multifunctional, etc.). This may well be attributed to the category of "economic security". In specific studies, however, this category is often simplified by way of abstraction to simplify the analysis. As a result, we have a number of interpretations of the same category, which differ in important points. In our opinion, such a situation can be avoided only by using the method of a systematic approach as a methodological basis for research.

Many other approaches to the interpretation of economic security can be cited, but even from a brief analysis it is clear that there is no unity of opinion about nature in the interpretation and judgment of this concept. Orlyk O.V. gives in his article a selection of different definitions of the term "economic security", which are found in the domestic literature, and you can see in this collection a wide range of opinions, many different interpretations [13].

These categories have the following interpretations:

- "object" is that which exists outside us and independently of our consciousness, the external world, material reality;

- "situation" (from the medieval Latin. Situation - position) - a combination of conditions and circumstances that create a certain situation, may arise or disappear,

change over time and can be assessed and express a fixed state of "object". We are not talking now about the fact that the "situation" is favorable or unfavorable, we are talking about changing the vector of the situation in the direction of danger or protection. The criterion for assessing the situation is usually introduced from outside (the object higher than the object) or set by the object itself, or determined by the goals and objectives, pattern / ideal, etc.;

Danger is a condition for a threat. Condition is the state of the object, the situation. Danger, like a threat, can be external, internal, hidden, potential, real, existing, imaginary, systemic, and so on. A threat is defined as a possible danger to someone and to someone. "Eliminate the threat" means protecting the object;

- the concept of "security" is interpreted as a state of reliable security, which implies the presence of a situation in which to protect (the presence of a threat);

- security is a state of protection of vital interests of the individual, society and the state from external and internal threats.

Security is a state opposite to the concept of danger, its absence.

The study of the concept of "economic security" many authors begin with a consideration of the term "security", which is interpreted as protection from the effects of any threats.

Of course, economic security activities, as well as economic policy in general, should use a program-targeted approach that focuses us on setting priorities and achieving them as a matter of priority. At the same time, the principles of complexity and systematic indicate to us that the implementation of measures to support sustainable development (economic security) of only key (in domestic practice they are often called "strategically important") sectors of the economy, leads to loss of integrity national economic security systems. That is, despite the need to set priorities, when implementing measures to ensure economic security, attention should be paid to all its structural components.

Given the presence in the economic literature of different approaches to the enterprise economic security formation, the variability of the basis for diagnosing the degree of their impact on the economy, the topical issue is setting priorities, forming conceptual foundations and methods of ensuring economic security of enterprises potential threats.

Research has shown that there are at least four approaches to the formation of the enterprise economic security concept: systemic, situational, functional and process.

Supporter of the system approach, Cherevko O.V. considers that economic security includes "the state of organizational, industrial and legal relations, material and intellectual resources, which ensures the stability of functioning, financial and commercial success, progressive scientific and technological development of the real sector" [4].

At the beginning of the XXI century, the situational approach to the management of economic security of the enterprise became widespread. Vasylchuk S.V. and Protsykevych N.V. believe that economic security is a state of the economy in which the company independently ensures sustainable socio-economic

development and maintains the required level of competitiveness [18]. Kovalchuk A.M. concretizes this approach component, arguing that the security of any socio-economic system is based on adaptability based on strategic management, political analysis and other rational activities related to the future, based on the study of past and present [10].

A supporter of the functional approach, in our opinion, is Truhan O.L, who considers the enterprise economic security as a broad concept that includes financial, intellectual, personnel, political and legal, environmental, information and law enforcement [16].

According to Vovk O. M. the enterprise economic security, in turn, is a component of the security system of entrepreneurial activity, along with man-made, environmental, informational, psychological, physical, scientific, technical and fire [19].

Functional and systemic approaches are very broad, so trying to cover all functional areas of activity and system units, the company faces a lack of specificity, even in the qualitative definition of its economic security. This is a high proportion of the subjectivity of those who manage the enterprise economic security. In addition, the detailed development and control over the economic security of the enterprise complicate the practical implementation of these two approaches.

According to the process approach, economic security permeates all levels of the enterprise organizational structure. The business processes that exist at the enterprise and their impact on the economic security of the enterprise have been studied. Each process is focused on achieving results that ensure economic security of economic activity.

However, it is not advisable to limit the process approach to economic security management, as resources remain equally important as a prerequisite for various processes, those who work between the "entry" and "exit" of the process, i.e., the actions taken, as well as contractors disrupt the process. In this regard, there are methodological prerequisites for the use of innovative (cyclical) approach in the formation of economic security of the enterprise.

This approach, according to Antonova O.V., is based on the application of the theory of economic cycles, which is based on the existence of long, medium and short waves of economic development [2]. At the same time, threats to economic security are formed at the junction of such waves and are realized in the form of the beginning of a new cycle of economic development, or loss of competitive advantage. In other words, we can talk about the existence of bifurcation points in the living space of the enterprise, which determine the invariance of its development during the life cycle. Therefore, it is necessary to transform this approach in order to apply it in the process of tracking the safe development of the enterprise along the life cycle curve, in addition, it is important to identify components that determine the economic security of the enterprise and develop methods for assessing them. So, in our opinion, formation of the enterprise economic security is possible by achieving permanent sustainable development based on the transformations of its life cycle.

Given the above, we can give the author's interpretation of the category

"enterprise economic security". This is the state of protection of its vital interests, both from internal and external threats, i.e. protection of the integrity of its structure, human and intellectual potential, information, property, technology, capital and profits, provided by a system of special legal, economic, organizational, informational -technical, social and other nature.

Currently, the issues of comprehensive, systematic assessment of the development of economic entities operating at different levels are becoming particularly relevant. The importance of scientific understanding of economic development, identifying practical ways to improve the processes taking place in the world economy, national economy, industries, corporate associations and individual enterprises, necessitates the formation of a system of strategic planning and sustainable development management.

Thus, the enterprise economic security is characterized by many of its types and approaches to determining the volume in order to form a comprehensive definition of economic security, it is necessary to systematize the approaches studied above. And therefore, we use the classification features proposed by Blank I.A. [3]:

- level of economic activity;
- functional type of economic activity;
- the nature of the threat to economic interests;
- a source of threats to economic interests;
- the nature of the mechanisms of protection of economic interests;
- orientation of mechanisms for protection of economic interests;
- time period;
- degree of management;
- the level of protection of economic interests;
- stability of parameters that protect economic interests;
- legitimacy of methods of protection of economic interests.

Let's consider in more detail some types of economic security of the enterprise according to the given classification on the basic signs.

1. The level of economic activity can be called the following types of economic security:

- economic security of the enterprise as a whole. This is the most aggregate type of economic security, which integrates all methods of protecting economic interests from various threats to the enterprise as a whole;

- economic security of individual structural units (centers of responsibility) of the enterprise. Such differentiation of economic security defines its type as an independent object of management in the system of organizational and economic construction of the enterprise;

- economic security of certain business operations of the enterprise. In the general system of enterprise economic security such its kind is considered as primary object of independent management.

2. According to the functional type of economic activity, economic security is divided into:

- economic security of current activities. It characterizes the system of methods

of protection of the enterprise interests from threats in the field of production and sale of products, works and (or) provision of services;

- economic security of investment activities. The system of this type of enterprise economic security is associated with the use of protection mechanisms against threats in the field of real and financial investment;

- economic security of the financial component of the activity. This type of enterprise economic security is associated with ensuring the protection of its interests from the threat of loss of controlling stakes, reducing their market value, increasing credit risks, irrational introduction of advanced financial technologies, etc.;

- economic security of enterprise other activities. These types of enterprise economic security can be formed to protect economic information, protect assets from abuse and theft, use of insurance products and more.

3. According to the nature of the threat to economic interests, the following types of enterprise economic security are identified:

- economic security, focused on neutralizing real threats. Such a system of economic security is built as a response to real threats to the enterprise economic interests and is characterized by the urgency of response measures;

- enterprise economic security, focused on preventing potential threats. This type of economic security is aimed at protecting the enterprise economic interests from identified possible threats in the future and is usually preventive in nature;

4. The source of threats to economic interests include the following types of enterprise economic security:

- enterprise economic security, focused on protecting the enterprise from external threats (external economic security). This type of economic security characterizes the system of protection of economic interests from adverse macroeconomic factors, destructive behavior of partners or competitors;

- enterprise economic security, focused on protecting the enterprise from internal threats (internal economic security).

The system of this type of economic security is built to protect the enterprise economic interests from threats generated by factors of the internal economic environment of its operation;

5. The following types of enterprise economic security differ in the nature of mechanisms of protection of economic interests:

- enterprise economic security, provided by internal protection mechanisms. Mechanisms of such protection are formed within the enterprise (for example, limiting the volume of high-risk economic transactions, the formation of special-purpose insurance funds, etc.);

- enterprise economic security, provided by external protection mechanisms. The system of such mechanisms may include external insurance of economic risks, measures to adapt to negative foreign economic factors.

6. According to the direction of mechanisms to protect economic interests, economic security is divided into two types:

- enterprise economic security, which limits the destructive influence of certain factors on the enterprise economic interests. The basis of the system of economic

security of this type of enterprise is a set of measures to avoid certain types of threats or reduce the likelihood of their implementation;

- enterprise economic security, which provides compensation for losses that pose a threat to the enterprise economic interests. The basis of this type of economic security system of the enterprise is a set of measures to minimize or compensate for the amount of economic damage during the implementation of identified threats.

7. According to the temporary period, there are also two types of enterprise economic security:

- economic security, which provides protection of the enterprise in the current period (tactical economic security). This type of economic security protects the enterprise economic interests from the threat of short-term action on certain economic transactions completed within one year;

- economic security, which provides protection of the enterprise in the strategic (long-term) period (strategic economic security). This type of economic security includes a set of measures to protect the enterprise economic interests from threats in the long run.

8. According to the level of parameters management that protect economic interests, economic security is divided into two types:

- economic security managed by the enterprise. This type of economic security is characterized by the ability to scan external and internal threats to economic interests and develop a set of measures to protect the enterprise from them;

- economic security that is not managed by the enterprise. This type of economic security is characterized by the inability to scan external and internal threats to economic interests and the inability of the enterprise to protect against them. Examples of uncontrolled economic security of enterprises are natural anomalies, infectious diseases, inflation, raids, and so on.

9. According to the level of protection of economic interests, the following types of economic security of the enterprise were identified:

- high economic security of the enterprise. This type of economic security characterizes the result of aggressive policy of its formation;

- moderate (normal) economic security of the enterprise. This level of economic security parameters, as a rule, reflects the results of a moderate policy of its formation;

- low (insufficient) economic security of the enterprise. This type of economic security characterizes the level of its parameters during the implementation of conservative formation policy;

- economic danger or lack of economic security is characteristic of the enterprise, when the looming threats and their number do not allow to develop measures to overcome it from this state. The enterprise in this case, as a rule, self-liquidates.

10. According to the stability of the parameters that ensure the protection of economic interests, economic security is divided into two types:

- stable economic security of the enterprise, characterized by a low level of fluctuations in the values of its main parameters;

- unstable economic security of the enterprise, characterized by a high level of fluctuations in the dynamics of the values of its main parameters.

11. According to the legitimacy of methods of protection of economic interests, the following types of economic security are distinguished [6]:

- economic security provided by legitimate methods. It is characterized by a system of methods of protection of economic interests of the enterprise, which fully comply with current legal norms in the country;

- economic security provided by illegitimate methods. It is characterized by a system of methods to protect the economic interests of the enterprise from threats that contradict current legal norms.

Thus, the enterprise economic security is a state of protection of a functioning enterprise (divisions, business operations), in which the mechanism of protection against real and potential external and internal threats, as a set of interdependent structural elements, ensuring its permanent sustainable development and long-term goals.

In contrast to economic security, strategic economic security, in our opinion, aims to ensure long-term permanent sustainable development of the enterprise contrary to the cyclical laws of its operation by implementing an effective mechanism to protect against real and potential threats as a set of interconnected structural elements.

Currently, the issues of comprehensive, systematic assessment of enterprise development, operating at different levels, are becoming particularly relevant. The importance of scientific understanding of economic development, identifying practical ways to improve the processes taking place in the world economy, national economy, industries, corporate associations and individual enterprises, necessitates the formation of a system of strategic planning and sustainable development management.

The result, which formalizes the process of functioning of the strategic management system, is the development of various strategies, each of which includes such an important component as ensuring the economic security of the object of management.

The strategy of ensuring the enterprise economic security is directly related to the strategy of its sustainable development. Within a strategic management system, the hierarchy of strategies may look like this. The main strategy is the strategy of enterprise development. Since the most important goal of the development strategy is to generate income from operations, maintaining a highly competitive status in the external environment throughout the life cycle, the main component of the strategy is the strategy of sustainable development of the enterprise [7].

The main function of the strategy of sustainable development is to preserve and maintain the essential properties of the enterprise. That is, the ability to create and maintain a systemic effect, while achieving a competitive oligopolistic level of income and profits, throughout the period of existence of the enterprise and in all phases of the cycle of the external market environment. This definition contains two key provisions: first, sustainable development is maintained throughout the existence

of the enterprise, and secondly, sustainable development of the enterprise is maintained not only during periods of economic activity of the environment, but also during periods of decline.

The close connection between the strategy of sustainable development and the strategy of economic security is due to the fact that the economic security strategy is implemented in several areas: identification and identification of types and sizes of threats, implementation of various measures to prevent and eliminate threats, and development of strategic action program and the organization in the structural units of the enterprise profitable activities that can maintain the competitive status of the enterprise in its market segments.

The main objectives of the enterprise economic security policy, in our opinion are: formation of a unified approach to understanding enterprise policy; creation of effective tools for combating fraud and corruption; development and implementation of consistent actions to prevent and deter violations, eliminate their causes and conditions; identification of real and potential threats of criminogenic nature for the enterprise stability and development; timely informing the company's management about the most important economic threats; creating a culture in the staff of the enterprise, based on the principles of legality, honesty, integrity and transparency in the performance of official duties.

Of course, ensuring economic security should be consistent and comparable with the development strategy, in particular, sustainable development, with a similar methodological and methodological basis.

The development of a strategy for ensuring the enterprise economic security on the basis of sustainable development includes several stages (blocks), which are carried out in parallel and sequentially:

Stage 1 (block). Creating a center of enterprise strategic management and economic security.

Stage 2 (block). Conducting a strategic analysis of the enterprise external environment and the potential.

Stage 3 (block). Development of goal setting procedure.

Stage 4 (block). Carrying out the stage of strategic choice of development directions that ensure the enterprise economic security.

Stage 5 (block). Development of functional strategies of structural units of the enterprise responsible for economic security.

Stage 6 (block). Development of product programs that ensure profitability and economic security.

Based on the algorithm of forming the strategy of I. Ansoff [1] it is possible to formulate the author's definition of the concept and content of the strategy of enterprise economic security - the strategy of enterprise economic security is a system of strategic planning and management, in which the company on the basis of comprehensive analysis of external and internal environment, adjusting its goals and objectives, determines the main directions of diversification and integration of production and economic activities. strategies and product programs, focusing on threat prevention and sustainable development of the enterprise throughout the



implementation of the strategy.

At the first stage, the center of enterprise strategic management and economic security has been created. This is the most important stage in the strategy formation, as the responsibility for its implementation rests with a single management center, which operates in a multilevel space system, including market environment, strategic planning processes, and coordination and linking goals and objectives spaces.

The basis of the market mechanism of commodity-money relations is the price, so the most important task of the center of strategic management is to develop a pricing policy that reflects the economic interests of both the enterprise as a whole and its individual structural units. The second task of the center is to create a realistic, but strategically designed management system to achieve common goals of the corporation, taking into account current and potential constraints, which does not threaten the enterprise sustainable development and economic security [11].

The third task of the center is to optimize the system of goals, objectives and actions of structural units, which is the fundamental basis for achieving corporate (systemic) over-effect of activities.

Stages from the second to the sixth are developed according to the conceptual approach offered by I. Ansoff at formation of the universal scheme of stages of enterprises development realization [1].

The second stage - the goal-setting stage includes the development of the mission and system of strategic goals of the enterprise. The company's mission has two main functions: first, it reflects the philosophy and characteristics of strategic sustainability, its strengths and attractiveness to all categories of staff. Secondly, the company's mission reflects the attractiveness of its activities to all stakeholders in the external environment.

The system of strategic goals as important components contains targets (in quantitative and qualitative terms) and organizational and economic indicators of sustainable development and levels of enterprise economic security.

The third stage contains a description of the procedure and results of strategic analysis of the enterprise external environment and the potential. At this stage, in terms of assessing the level of enterprise economic security, the most effective is the use of methods of SWOT-analysis and PESTLE - analysis. SWOT-analysis allows you to identify opportunities and threats to the company from the external environment, as well as the strengths and weaknesses of the internal environment.

Currently, there is an opinion that a promising area of strategic analysis is the synthesis of SWOT and PESTLE methods. The result of this synthesis is the ability to identify external threats to the corporation, clarify their types, quantify, scale of threats, degree and time of impact on corporate structure, scientific, technological and organizational potential.

The value of the stage of strategic analysis for the strategy of economic security is that its results identify real and potential opportunities for direct impact of external threats on the weaknesses of the corporation, which must be prevented by applying measures of economic security strategy [8].

At the fourth stage the strategic choice of directions of enterprise development

which will provide economic safety is carried out. Given that the basis of economic security of the enterprise is its sustainable development, the most promising strategic choice of areas of enterprise development will be the use of diversification and integration strategies. The strategy of diversification in related and unrelated industries allows the company to increase market share, expand the range of products and establish additional sales channels.

The fifth stage of developing a strategy for enterprise economic security is one of the most important and labor-intensive stage, in which all structural units that are part of the enterprise and specialize in performing certain functions, form their own functional strategies. In the process of developing a functional strategy, a mandatory requirement must be met, according to which none of the functional strategies of the structural unit should contradict the basic strategy of the whole enterprise, which is implemented in this period of time. Thus, the general management of the enterprise and the heads of structural units should work with the "general vector of goals" [1].

The Finance Department develops a functional strategy for economic security, closely related to marketing strategy, social and production strategy. It contains the characteristics of the "order portfolio", the structure and size of sales, determined on the basis of marketing research, levels of financial stability and solvency of the corporation, the actual and allowable amount of accounts payable and receivable, the level of own sources of working capital. The strategy contains a financial assessment of return on assets, capital intensity and profitability of production. The strategy includes financial diagnostics that accompanies the process of enterprise production and economic activities, revealing deviations of actual values, characteristics and indicators of planned characteristics and indicators contained in the strategy of sustainable development, development of measures to prevent and eliminate threats to economic security.

In modern conditions for the enterprise management becomes important staffing and social responsibility. Staff training opportunities help companies to develop effectively and achieve high results [11]. The proposed areas of economic security policy strategy increase the competitiveness and efficiency of enterprise development.

The structural subdivision of the enterprise dealing with personnel develops a functional strategy of social development. The personnel component is the basis of the company's potential. The cohesion of staff, their interest in achieving effective results of the enterprise depends on the presence of pronounced motives for work [2].

The strategy of social development should be based on a scientifically sound methodological approach to determining the leading motive of labor activity of enterprise personnel. In this regard, the most appropriate is the methodological approach, which proposes to classify the leading motives for work in three types: the desire for monetary reward; adapting the goals of the enterprise to their goals; identification of their goals with the goals of the enterprise [8]. The effective operation of the enterprise can be achieved if all categories of staff identify their motivations and goals of work with the goals of the enterprise. In this case, on the one hand, the remuneration for the work of different categories of staff is directly

dependent on increasing the synergy defect, and on the other - the company's staff is directly interested in ensuring sustainable development and economic security as a prerequisite for synergies.

Private indicators that characterize the level of implementation of the social development strategy are indicators of working day losses and the level of wages by category of staff. Comparison of the values of these indicators, with similar average values of the production sector, allows to identify the level of enterprise economic and social security. Characteristics of the structure of human resources determines the possibilities of enterprise sustainable development in the strategic perspective.

The production strategy and the research strategy (R&D) are closely related to the strategy of ensuring economic security. Orienting the company in the direction of sustainable development, these strategies regulate the nature of production dynamics taking into account cyclical changes in demand / technology, levels of capacity utilization and rhythm of the production process, equipment structure. The strategy contains an assessment of the required level of product competitiveness and justification of the relationship between competitiveness and the pace of renewal of fixed assets, the required amount of R&D.

The functional strategy of the security service of the enterprise manages the two main areas of its activities, reflecting the functional purpose of the service. According to the first direction, the security service implements the function of constant control and direct elimination of external and internal threats of the enterprise. The security strategy in accordance with the first direction solves the following tasks:

- provides protection of trade secrets and confidential information;
- provides security and protection of buildings;
- provides physical security of personnel;
- maintains technical and fire safety;
- provides economic security [5].

According to the second direction, the functional purpose of the security service, reflected in the strategy in the form of a subsystem of procedures, monitoring and response measures, is to identify potential threats, assess their nature, volume of threats and propose measures to eliminate them safely developing the enterprise. The tasks reflected in the second component of the functional strategy are:

- conducting competitive intelligence;
- monitoring the security of economic and contractual activities;
- conducting information and analytical work;
- implementation of expert inspections of the mechanism of the economic security system [5].

The results of the work of the security service in the second direction of the functional security strategy are designed as a system of calculation and analytical materials. The strategic task of the security service is to implement measures to minimize the total loss from the threat and develop proposals for "clearing" the space of production and economic activities of the enterprise to organize new types of profitable production and support sustainable development.

The estimated part of the analytical materials contains an estimate of the number of losses from the threat, the duration of the period of impact of the threat on the enterprise, the amount of costs required to eliminate the threat and calculate the period of time to eliminate the threat.

The applied nature of this area of functional strategy of the security service is to develop recommendations for economic security and sustainable development in relation to the specific conditions of the enterprise external and internal environment.

At the sixth stage, product programs are developed. Product programs include plans to update products by range and range. The purpose of developing new product programs is to ensure profitability and economic security of production. Organizational and managerial measures to create new production programs of the enterprise provide for the transition to a new production strategy, ahead of industry competitors and increase their share of production.

The formation of the company's strategy should be based on the creation of certain operating conditions that help maximize profits and ensure the growth and payment of dividends to owners. The proposed concept of economic security policy strategy in enterprise management should include five main areas: development of production, improvement of machinery and technology; reduction of production costs; improvement of the social and personnel sphere; improving product quality; ensuring environmental safety of production.

The developed concept of enterprise economic security policy provides a comprehensive security system that includes security objects and subjects, methods of analysis and management of risks and threats to economic security and security strategy. The rational part of the proposed concept is to determine the range of goals and objectives, functions, principles of policy and security strategy of the enterprise, which allow to clearly identify the place of economic security in the enterprise management.

The implementation of the strategy of economic security policy will identify the negative aspects of economic security, quickly regulate the volume and structure of costs, as well as effectively influence the overall financial condition of the enterprise and forecast its sustainable growth. This will ultimately have a positive effect on the activities of the company itself and will affect the recovery of our economy as a whole.

The strategy of economic security policy in enterprise management is a set and interaction of important measures, as well as a system of measures and methods that determine the enterprise security both now and in the future.

The proposed strategy of economic security policy of the enterprise should include: determining the interests of enterprise development; substantiation of the most probable external and internal threats to the economic security of the enterprise, as the relationship of conditions and factors that determine the danger to ensure the economic interests of the enterprise; identification and monitoring of factors that determine the enterprise development and stability; formation of enterprise economic policy and the necessary mechanisms that reduce the impact of factors that destabilize it; mission, purpose and specific objectives of the economic security

policy of the enterprise; identification of criteria and levels of enterprise development that meet the requirements of economic security; methods and mechanism of formation of enterprise economic security policy.

The importance of using an integrated approach to economic security policy is to improve governance. The main task of economic security policy in management is the dynamic and sustainable growth of the enterprise. In our opinion, the concentration of resources (capital, innovation, personnel, investments, information, technology) is an important way to develop the management of economic security of the enterprise; effective planning of financial and economic activities; continuous monitoring of the state of economic security [3].

Therefore, for the formation of economic security policy of the enterprise, in our opinion, it is necessary: to ensure the security of personnel, material, financial and information resources from possible risks and threats by available methods; comprehensive monitoring of the market sector in which the company operates, political, economic, factors in the country, region, city that may affect its activities; setting comprehensive security objectives at the stage of security policy development based on threat analysis and forecasting; protection of the enterprise interests; involvement in the development of protectional means of specialized organizations, most prepared for security activities; development of measures to ensure economic security on the basis of clear interaction of interested departments and services of the enterprise.

The operation of the enterprise under the influence of internal and external threats, exacerbated by competition involves the implementation of a set of processes for managing economic security. Among such important processes we can highlight [13]:

- empirical analysis of factors and threats to economic security;
- assessment of their possible impact on the state of economic security;
- monitoring and control of economic security indicators;
- determination of the limits of permissible values of potential damage through the implementation of threats;
- implementation of measures to reduce the impact of such threats on the economic security of the enterprise.

For the highest protection of the enterprise from instability and achievement of adaptability to economic conditions it is necessary to adhere to all enterprise functional components.

Depending on the considered functional component, the methods used in the process of ensuring economic security may change. The tasks of economic security management for functional components will also differ, for example:

- achieving enterprise financial efficiency and independence;
- ensuring high competitiveness of products;
- optimization of management processes and enterprise structure;
- maintenance of human resources;
- protection of the spheres of enterprise activity in the legal sphere;
- creating an accessible IT environment of the enterprise and its protection;

- leveling the impact of production processes on the external environment.

One of the important processes of economic security management of the enterprise is the assessment of its current state. Economic security assessment means a sequence of such actions: identification of significant factors (qualitative analysis), their numerical interpretation (quantitative analysis), assessment of the impact of each factor and assessment of the complex impact of factors on the economic security of the enterprise.

Improving the current state of economic security to sustainable requires the introduction or expansion of a set of organizational, managerial, economic measures invested in the preventive protection of internal and external interests of the enterprise. This set of measures is called the system of economic security, which is implemented in several stages [1]:

- formulation of the purpose and principles of enterprise management;
- qualitative assessment of the development potential of the enterprise, strengths and weaknesses, analysis of external and internal business environment;
- identification, qualitative and quantitative analysis of security threats, identification of factors of successful operation;
- formation of a strategy to ensure economic security;
- assessment of the significance of potential security threats;
- assessment of the state of enterprise economic security;
- forecasting the impact of threats with their possible escalation;
- development of preventive protection measures (in the presence of potential threats), implementation of reactive protection measures (under the active influence of threats);
- making management decisions taking into account existing and projected security threats.

The system of enterprise economic security should be characterized by adaptability to current operating conditions, a wide range of tools used, continuous improvement of the quality of economic indicators analysis. There are several functions that the economic security system should perform, among them:

- protective function (prevention or reduction of the force of internal or external threats due to accumulated resources);
- regulatory function (providing regulatory impact on the potential environment of threats);
- preventive function (anticipation of threats and the strength of their possible manifestation, mobilization of resources to deter emerging threats);
- compensatory function (prevention of existing threats, leveling the consequences of their impact, compensation for losses);
- innovation function (use of modern methods, specially developed and adapted to the specifics of the enterprise with the use of innovative tools).

Based on the algorithm of strategy formation, the author's definition of the concept of "strategy of economic security of the enterprise" is formulated, according to which the strategy of enterprise economic security is a system of strategic planning and management, determines the main directions of diversification and integration of

production and economic activities, about which structural units develop their functional strategies and product programs, focusing on threat prevention and sustainable enterprise development throughout the strategy implementation.

We present a classification of factors of economic security of the enterprise, which are grouped into four groups on the following grounds: positive and negative by mode of influence; internal and external to the environment; direct and indirect by the nature of the impact; objective and subjective in the degree of conditionality.

External factors are divided into indirect and direct. Unlike indirect factors, direct factors have an immediate impact on the level of economic security. Direct external factors include resource provision, availability of infrastructure, competitive environment (competition policy, level of use of scientific and technological progress, manifestation of monopoly tendencies, etc.), consumers (changes in needs, demand, level of effective demand, etc.), suppliers and partners (contractual obligations, prices for goods supplied, their quality, etc.).

Indirect external factors are represented by political, economic, legal, scientific and technical, international, environmental, socio-cultural, demographic, climatic, geographical factors. Indicators within these factors vary depending on the company, however, among the general indicators of economic factors can be noted the level of inflation, solvency of the population, investment resources, the national currency. Among the indicators of legal factors - problems with legislation, stability of the tax system and regulatory legislation, currency regulation, customs policy, the availability of benefits for investors, environmental regulation. Indicators of political factors include changes in financial policy, corruption, criminalization, state support for enterprises, stimulating domestic demand. Also, in accordance with the classification, there are factors that affect the level of economic stability as a result of processes whose development is consistent - objective factors. If the factors arose as a result of purposeful and conscious actions of a group of people in accordance with their interests, such factors are subjective [2].

The mechanism that drives this process plays a special role in the system of ensuring the enterprise strategic and economic security. Under the organizational and economic mechanism of enterprise management we understand the interdependent set:

- forms and methods of economic management with motivation of incentive systems;
- forms and methods of tactical and operational management;
- tools and methods of forming a system of control parameters with elements of self-organization;
- systems of reasonable restrictions of financial and administrative nature;
- information systems for the formation of legal and regulatory framework for management decisions.

As a management system, which is a set of economic, motivational, organizational and political and legal ways of interaction of economic entities and influence on their activities, ensuring the coordination of interests of interacting parties, objects and subjects of management, defines a comprehensive organizational

and economic mechanism of the enterprise operation [4].

According to Moskalenko V.P. and Shipunova O. V., the mechanism (system) of economic security and its leading component - economic security, includes the means, methods and measures used, the set of which is able to protect structural units, preserve and effectively use financial, material and information resources [11]. Kalashnikova T. considers that the security mechanism (any) includes a set of goals, functions, principles and methods, the interaction of which ensures the effective functioning of the security system [7]. We can agree with the authors that the mechanism of enterprise economic security should include such basic components as: subjects, objects, subject, tools, methods, functions and principles. The opinion of the authors Filyppova, S.V., Dashkovskyy, O.S. is correct [6] and Vasylchyk S.V., Protsykevych N.V. [18], that the mechanism of financial security management as the main component of economic security means the unity of the management process and management system.

The opinion of scientists is quite fair, but it should be noted that in addition to organizing the use of tools and control, it is necessary to add such important elements as planning, analysis and management. Antonova O.V. proposed a substantial justification that the mechanism of economic security management means a set of basic elements of influence (components) on the development and implementation of management decisions to protect the enterprise priority balanced economic interests from real and potential external and internal threats, the parameters of which create prerequisites, preservation and growth of market value of the enterprise [2].

The mechanism of enterprise economic security management in the study of Antonova O.V. contains a set of interests of the enterprise and threats, functions, principles and methods of management, organizational structure and culture, methods and means of management, criteria for assessing the level of economic security [2]. Vasylchyk S.V., Protsykevych N.V. to this mechanism adds management staff, management equipment and technology, financial instruments [18], but does not mention threats, culture, methods and tools of management. Mechanism of enterprise economic security management, substantiated in detail by Blank I.O., who divides it into: system of state regulatory and legal regulation of enterprise financial security, market mechanism of enterprise economic security, internal mechanism of enterprise security management, management methods, management tools [3].

Having studied the nature of the enterprise organizational and economic mechanism and taking into account current trends of its modification, in order to ensure enterprise permanent sustainable development in the long run should form a mechanism for economic security.

Thus, the mechanism of enterprise economic security should be understood as a holistic system consisting of separate, independent, and interconnected and interacting structural elements of protection against real and potential external and internal threats, which ensures enterprise permanent sustainable development and achieving set goals in the long run. Development of the enterprise mechanism of economic security, we will make on the basis of scientific approaches and principles with use of basic and applied theories.



In addition, it is necessary to choose specific tools of the mechanism depending on the enterprise conditions, the stage of development of its financial and economic activities and the achieved level of economic security. As a result, the mechanism for ensuring the enterprise economic security, in our opinion, should contain the following blocks:

- information support of the process of assessing threats to the enterprise economic security;
- assessment of the level of development of key determinants, and on their basis to assess the level of enterprise economic security;
- making decisions to maintain or increase the achieved level of enterprise economic security, taking into account the identified strategic prospects;
- implementation of tools to adjust the strategy in order to increase the level of development of the underdeveloped determinant of enterprise economic security or their combination;
- evaluation of achieved results.

In general, the mechanism for ensuring the enterprise strategic economic security should be in the form of a continuously functioning system. In our opinion, the introduction of such a mechanism in the enterprise together with the existing organizational and economic mechanism will adjust the elements of the basic (organizational and economic) mechanism and ensure a high level of its economic security.

In this case, the process of functioning of developing enterprise mechanism of economic security must be continuous, having received the results of the mechanism, it is necessary to return to the information component. This is due to the fact that the flow of information is continuous, so it must also be processed continuously.

#### Conclusions:

1. Systematic study of the concept of "economic security" and the processes of its provision includes the development of conceptual approaches to the definition of economic security. Taking into account the presented material in the study "enterprise economic security" is a state of protection of vital interests of the enterprise from internal and external threats, i.e. protection of the integrity of its structure, human and intellectual potential, information, property, technology, capital and profits. special legal, economic, organizational, informational, social and other nature.

2. It is noted that the enterprise economic security is characterized by many of its types and approaches to definition. In this, in order to form a comprehensive definition of strategic economic security systematized classification features: the level of economic activity; functional type of economic activity; the nature of the threat to economic interests; source of threats to economic interests; the nature of the mechanisms of protection of economic interests; orientation of mechanisms of protection of economic interests; time period; degree of management; the level of protection of economic interests; stability of parameters that ensure the protection of economic interests; legitimacy of methods of protection of economic interests.

3. It is noted that the strategy of economic security of the enterprise is a system

of strategic planning and management, in which the company based on a comprehensive analysis of external and internal environment, adjusting its goals and objectives, determines the main directions of diversification and integration of production and economic activities about to structural departments develop their functional strategies and product programs, focusing on threat prevention and sustainable development of the enterprise throughout the strategy implementation.

4. It is noted that the mechanism of forming the strategy of enterprises economic security includes five blocks that are permanently implemented: information, assessment of the level of development of key determinants and the level of enterprise strategic economic security; making management decisions taking into account the identified strategic prospects for enterprise development; development and implementation of various tools to adjust the strategy of the enterprise in order to increase its level of development; evaluation of achieved results.

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## 1.2. THE INFLUENCE OF INNOVATION AND INVESTMENT SUPPORT OF ECONOMIC SECURITY ON THE COMPETITIVENESS OF BEEKEEPING ENTERPRISES

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**Summary.** The article highlights the theoretical base of beekeeping enterprises competitiveness. Organizational mechanism of interaction through the "production-processing" with the distinguishing of three types of model companies was formed. Beekeeping enterprises association on the basis of cooperation and with the use of integrated systems in the direction of creating highly mechanized large apiaries are grounded.

**Keywords:** competitiveness, beekeeping enterprises, enterprise model enterprises, integrated systems.

Ukraine is among the countries with developed bee production. This development was contributed by proper climatic conditions of the country, large areas of melliferous grounds and traditions of population to maintain the bees. These factors have provided high-quality reception of bee products, which is a prerequisite for the development of beekeeping enterprises, domestic and foreign agricultural markets.

As a result of organizational and structural changes, there is a negative trend in recent years in the beekeeping enterprises, as in many other agricultural enterprises. The number of bee colonies is reducing and their productivity is also reducing. Despite this situation, Ukraine is among the five leading countries that have developed production of bee products. Beekeeping enterprises activities play an important role in the economy of our country and ensure the production of honey, wax, royal jelly, propolis, apitoxin, pollen, pollination of entomophile crops.

However, in a volatile economic situation on the international and national markets increasing demands for accelerated development of adequate national agricultural market, which is able to provide the balance of supply and demand, increase the profitability of beekeeping enterprises, accelerate development of rural areas and improve the goodness of the population. Production expansion of beekeeping enterprises products by the farmers can become a stabilizer in an unstable economic situation. Transformation and development of market economy intensified structural reforms in the field of beekeeping, due to changes in organizational and legal forms of ownership, size and structure of enterprises, supply and demand, under the social division of labor.

Regarding the situation on the domestic market of beekeeping production, it is possible to say that it depends primarily on external trends. The global economic crisis significantly unbalanced this market, but it remains one of the most dynamic

and globalized markets nowadays. There are more than 50 mln. colonies in the world, the number of entities engaged in beekeeping is about 7 mln. The largest number of bee colonies located in China (15%), Russia (7%), Turkey (6%), Ukraine (6 %), the USA (5.5%), Poland and Mexico (5%). World production of honey is 1.5 mln. tons and exports – 400 ths. tons annually. The leading world producers of honey are China, Argentina, Turkey, Ukraine and the USA. Bee products market has a number of features, and in recent years there is active market redistribution between the major producers. Only a few countries are absolutely secured in its own beekeeping production: China, Canada, Ukraine, Russia and Poland. Honey production in China reached 200 ths. tons, in the USA – 100 ths. tons, Mexico – over 50 ths. tons, Russia – about 50 ths. tons. Ukraine takes the 4th place in the world by total production of honey, the average is 75 ths. tons. Ukraine, among European countries, takes the first place according to the relevant indicator, but only 6% of domestic honey is exported. This sector employs about 700 ths. people, which is 1.5% of the population. Country is among the five leading producers of honey in terms of consumption of this product per capita and gross output (Table. 1).

Table 1

World consumption of honey, 2020 [9, 10]

Country	Production of honey, ths. tons	Quantity of bee colonies, mln. pcs.	Quantity of bee colonies on average in enterprise	Productivity of one bee colony, kg of honey/year
Ukraine	73,7	3,0		24,7
the USA	65,2	2,2	24,0	30,0
Argentina	80,0	4,0	121,0	20,0
Russia	53,5	3,9	9,6	18,4
Canada	29,3	0,6	85,0	50,0
New Zealand	10,5	0,4	130,0	27,8
Israel	2,5	0,1	180,0	28,0
Spain	30,4	2,4	98,0	12,6

In developed countries it is consumed about 1.5 kg of honey on average per person per year, while in developing countries – only several tens of grams [1].

One of the main sources of financing of beekeeping enterprises in many countries is honey export earnings. The situation is quite different in Ukraine, especially when analysing the volume of honey production in Soviet times and the period of independence.

Taking into account the specificity of agricultural production, particularly bee production and implementation of complex interrelated agricultural activities in the aggregate: demand analysis, production of a certain technology, transportation, storage, processing, sale of bee products, it should be noted that this contributes to the beekeeping enterprises competitiveness. Thus the main integrated indicator of the state of the company and which affects its strategic development is competitiveness. The concept of competitiveness is meaningful nowadays.

For example, M. Porter believes that competitiveness – is conditioned by economic, social and political factors of the country situation or a particular commodity in the domestic and foreign markets [8] . B. Stephenson characterizes the competitiveness from the positions, "how effective the company meets customer

needs in comparison with other companies offering similar goods or services" [11]. Ukrainian scientists consider competitiveness as the presence of the company's tangible and intangible opportunities and resources and conditions that ensure its sustainability in the long term [7]. Thus, competitiveness in domestic and foreign markets is characterized by the ability to deliver competitive products and the potential for such issues. However, competitiveness is an indicator, in which product competitiveness, industry, region and economy in general are revealed and intertwined.

Formation of methodological principles for determining beekeeping enterprises competitiveness takes place on the basis of features that are stipulated by the industry specificity. To specify the mechanism of formation of beekeeping enterprises competitiveness it is advisable to classify them according to the categories indicated in the definition (Fig. 1).

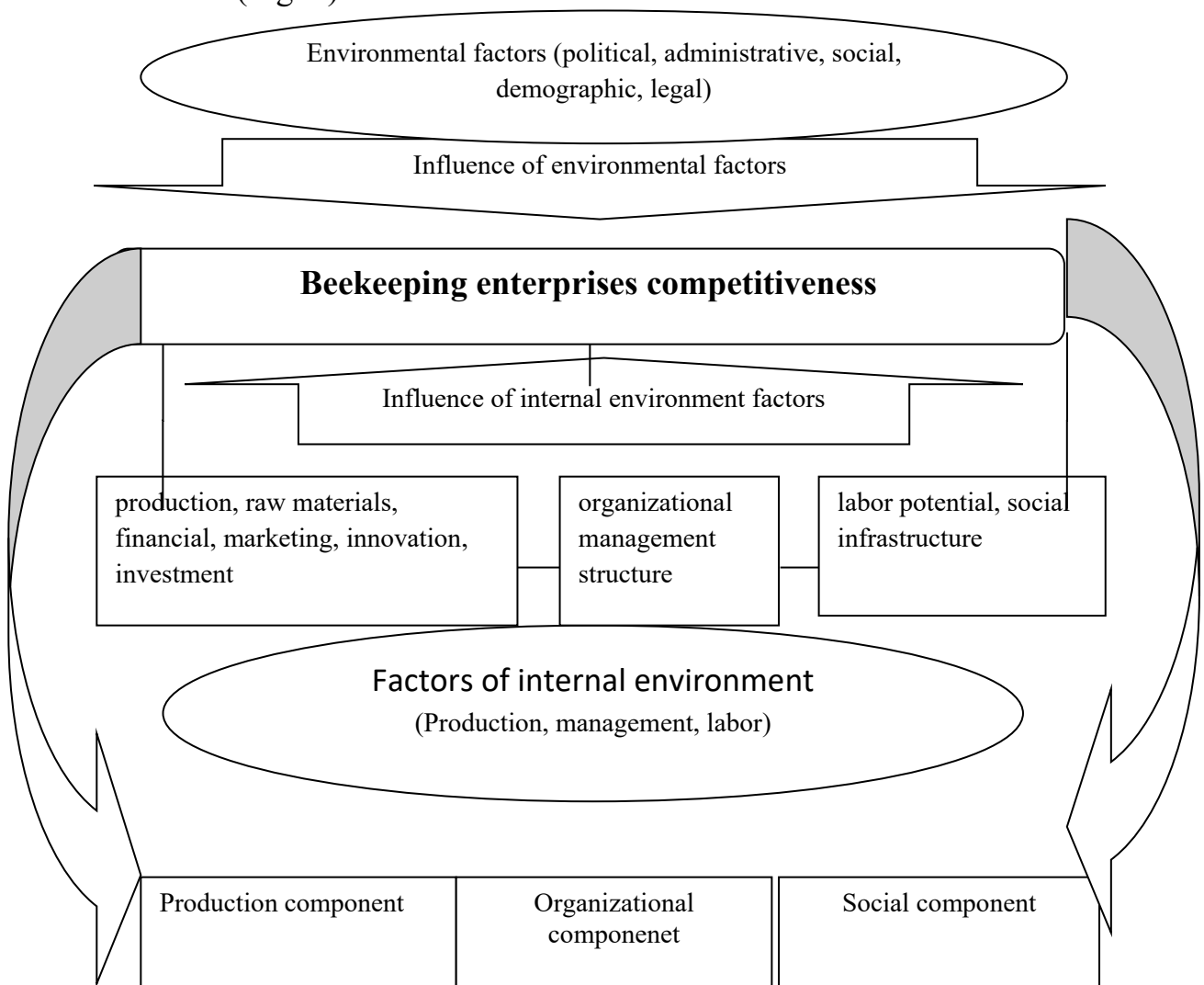


Fig.1. Factors of formation of beekeeping enterprises competitiveness

Taking into account the level of factors influence on the competitiveness of beekeeping enterprise it is possible to highlight the following subsystems:

- external factors of competitiveness directly depends on the beekeeping enterprise opportunities to adjust its activities considering the influence of natural, economic, political, social, demographic, production and technological factors of the environment. The range of activities that can be offered in order to maintain an

adequate level of external component include: effective lending and borrowing policy, fast rate of production process adaptation through innovative approaches in the management of the company to changing market conditions, development and modernization of its own resources;

- internal factors of competitiveness, are formed by making optimal management decisions to change production, information, labour, financial resources and social services. The range of measures in order to maintain an adequate level of internal component can offer tools motivational mechanism both moral and material incentives;

- sectoral economic stability, formed by a set of measures, based on the interests integration of beekeeping enterprise with the agricultural enterprises. In this case, the level of beekeeping enterprise viability may be limited to only standard value selected for the integration of agricultural enterprise;

- ecological stability, characterizes enterprise ability to maintain natural and economic balance and to improve environmental conditions of operations.

These beekeeping enterprises subsystems characterize different aspects of their development, and the level of influence on one another is high enough, and the result of their influence – is the level of competitiveness. We can therefore say that the result of the overall competitiveness of the enterprise is based on the integrated operation of all subsystems [6].

The main economic, organizational and technological priorities of competitive bee production that are characteristic of the agricultural sector are to improve production technology of beekeeping enterprises. Losses in beekeeping for the years of reforms are related to the elimination of most specialized bee farms of honey and trade and partly fertilizing directions, unsatisfactory state of most remained farms, collapse of interfarm beekeeping associations, and also large apiaries and bee farms, a sharp decline in instruments and equipment for beekeeping, weakening of agrozooveterinary apiaries service due to lack of proper funding and so on. This opens perspectives for the development of beekeeping enterprises of Ukraine [2].

Key issues for the future are implementing modern technologies in beekeeping enterprises and production of clean bee products, the safety of medicines that they produce to fight with diseases of bees, proper use of chemical protection of honey plants, appropriate renovation of bee instruments and equipment, efficient use of labour, land and financial resources, and development of information infrastructure software.

The research of beekeeping enterprises productive forces should be done in order to achieve efficient use of objects and means of labour. This effect is due to the cognition of objective and subjective laws of development of productive forces, laws and principles of their functioning. The productive forces of beekeeping enterprises are in constant motion, changing its quality status and influence the level of economic stability of individual enterprise. This should be taken into account while their research and justification of improvement directions [3].

Evaluation the effectiveness of production technologies of bee products that determines the level of beekeeping enterprises competitiveness, connected with

consideration of a number of factors that determine the nature of production resources use and market conditions of implementation. Small-sized private bee apiaries prevail in modern beekeeping of country, on which the development of scientific and technological progress and innovation are limited by manual labour prevalence, which low productive, and primitive means of production. Technologies for the most common bee products receiving can be substantially improved, taking into account national and international experience [6].

An integrated approach to evaluate the level of beekeeping enterprises competitiveness can be done with the help of comparative analysis of production efficiency on perspective apiaries of different sizes and organizational and legal forms of management. On the basis of the sample statistical indicators of four enterprises of Dnipropetrovsk region are examined: PAT "Bdzholoahroservis" of Solonyansky district, FG "Bdzhilka" of Pavlograd district, SFG "Medok" of Magdalynivka district and PP "Sens" of Dnipropetrovsk region for the years 2011-2015 on average.

To calculate the efficiency of honey we have taken beekeeping enterprises, different in size and technology of beekeeping. However, the production of honey in these farms is the basis for development of beekeeping enterprises, since only when bee colonies have sufficient quantity of honey; they may have their full development and getting the majority of other bee products (Table. 2).

Table 2

Economic efficiency of honey production in beekeeping enterprises of Dnipropetrovsk region, the average for 2015-2020

Indicators	PAT "Bdzholoahr o-servis"	FG "Bdzhilka"	SFG "Medok"	PP "Sens"
Number of bee colonies, pcs.	1036	436	112	66
Received honey from one bee colony, kg	27,1	18,3	31,3	25
The cost price of 1 kg of honey, UAH.	25,75	29,4	31,4	39,1
The level of effort for 1 kg of honey, person-hours	2,1	2,4	3,1	3,9
The level of profitability (loss) of honey production, %	17,6	9,5	4,3	-11,2
The level of profitability (loss) of beekeeping, %	28,9	14,3	8,4	-4,5

The data in Table 2 indicate that the PAT "Bdzholoahroservis" has the most effective honey production. FG "Bdzhilka" and SFG "Medok" have profitable honey production, but the profitability is low, respectively 9.5% and 4.3%, as in most beekeeping enterprises.

PP "Sens" has unprofitable production of honey and bee products as a whole for 2011-2015, which indicates the low quality of management decisions of the management, poor quality products, lack of effective distribution channels and high production costs.

The data of state statistical reports indicate that the economic efficiency of honey production of beekeeping enterprises has significant differences.

Perspective direction of honey and trade beekeeping development in the



country is the creation of apiaries on a cooperative basis, the dimensions of which are determined by gross income. In modern beekeeping there are a lot of examples when within the horizontal (intrasectoral) cooperation private bee apiaries consolidate to share the expensive vehicles, mobile pavilions and equipment, conducting migration, protection and maintenance (handling, inspection, etc.) of bee colonies. An example of this association is beekeepers association of Kryvy Rih "Travnevy Sad".

Within vertical (intrasectoral) cooperation they carry out processing of honey, wax and other bee products, which is the feedstock for enterprises in other industries. Theory and practice of beekeeping enterprises reforming demonstrate the need for the development of large commodity production based on cooperation and integration. This confirms the experience of foreign countries with developed beekeeping (the USA, Canada, Argentina, Mexico, Australia, Hungary, Romania, China, etc). There the private sector dominates over collective and state sectors. In average, it accounts 70-92% of bee colonies quantity and a significant part of production [8].

In order to enhance the competitiveness of beekeeping enterprises it is necessary to introduce the latest technology maintenance, migrations, bees swarming and obtaining products, establish primary processing of bee products, which will ensure maximum efficiency and their implementation, such as appropriate use of intensive beekeeping technology. The intensity in beekeeping is expressed as a rational bee maintaining. This means that throughout the season beekeeping enterprise are using methods that minimize the consumption of material resources and physical strength of beekeepers within guaranteed obtaining maximum impact products of bees labour.

This technology of intensive beekeeping does not require additional hives for bees. It is possible to receive a large quantity of real honey from 60 to 150 kg from one bee colony without increasing the number of bee colonies. Let us consider the economic calculation of this technology for PAT "Bdzholoahroservis" in table 3.

Table 3

Economic efficiency of intensive beekeeping technology for PAT "Bdzholoahroservis"

Indicators	Technology		Changes, in %
	traditional	intensive	
Number of colonies, colonies	1036	1036	100
Gross yield of honey, kg	28075,6	62160	2,2 times
Honey performance of one bee colony, kg	27,1	60	2,2 times
Price of 1 kg of honey, UAH	30,28	30,28	100
Proceeds from sale of honey, ths. UAH	850,1	1882,2	2,2 times
Total cost, ths. UAH	722,9	1125,1	155,6
Cost price of 1 kg of honey, UAH	25,75	18,10	70,3
Profit (loss) - total, ths. UAH	127,2	757,1	6,0 times.
For one bee colony, UAH	122,78	730,79	6,0 times
Level of profitability,%	17,6	67,3	49,7 g. p.

Thus, as a result of use of this technology of intensive beekeeping it is possible to receive 62,160 tons of honey, and performance of one bee colony is 60 kg of honey. The cost of one kg of honey significantly reduced by 29.7% in comparison with traditional technology and will reach 18.10 UAH. As a result, this technology

helps to receive 6.0 times more income than the traditional beekeeping as in a whole and in calculation per one bee colony. The level of profitability in the use of this technology will increase by 49.7 g. v. in comparison with the traditional 67.3%.

In general, the technology of intensive beekeeping is one of the most efficient, as it minimizes financial and physical costs while maximizing yields. It should be taken into account the most resistant to market relations models of organizational structures in beekeeping. In our opinion, there are three types of beekeeping enterprises and their apiaries that have increased competitiveness among the prospective enterprises. They accumulate the most salient positive trends in shaping the institutional mechanism of interaction through the production - processing and bee products realization.

Each of these production types is presented by the model farm (apiary), the most relevant to a certain level of management. Three levels of management were distinguished while justification of medium-term prospects of beekeeping in the country. The first one involves the most promising model of bee apiary that has optimal size and structure of production, providing its owners a competitive, self-sufficient development in market conditions. It is located in the administrative district to obtain guaranteed volumes of products, pollinating crops by bees and saturation of the local market with beekeeping products.

The size bee apiary (100 - 150 bee colonies) provides the most efficient use of employees throughout the calendar year - beekeepers and beekeeper's assistant and use of modern means of mechanization.

The second one is presented as a model bee farm that takes advantage of high-tech manufacturing. The peculiarity of the institutional mechanism of this type of production is the ability to combine into a single unit production, primary processing of products, raw materials and marketing activities. It is assumed that bees and beekeeping products model farm will be implemented independently both in rural and regional markets as part of procurement and trade organizations involved in inter-regional market. Bee farms can be successfully used for pollinating large volumes of entomophile crops on crop farms, and act independently with their products as a relatively large commodity production in the region. In the future, a limited number of such bee farms can effectively use the resources of individual district.

The third one is represented by a model integrated system, which includes the parent company and the network of bee apiaries of different sizes and organizational and legal types of management, as well as enterprises and organizations of agrarian sphere of economy and other sectors of the economy, interested in joint activities of production, processing and realization of bee products. Geographically, this system can combine beekeeping area, region, and in the future be a representative of interregional organizations and act independently on the international market.

It is necessary to match internal organizational and economic measures for the development of market relations in beekeeping with international requirements in order Ukraine could participate in the international agricultural market with beekeeping enterprises products. This is due to the increased role of the state as guarantor enterprises out of the crisis and creating conditions for sustainable further

development [4]. In terms of market relations, the importance of the principle of rational distribution and combining the regions specializations in the production of certain products for export as well as for the purpose of self-sufficiency. The last ensure cooperation.

The importance and urgency of cooperation is discussed in a special resolution 56/114 "Cooperatives in the process of social development" UNO General Assembly dated June 18, 2002. According to the experience of some countries, service cooperatives are creating to reduce the number of intermediaries and improve the process of bee products promotion from producer to final consumer.

One of the most important prerequisites of such service cooperatives is territorial concentration of beekeeping enterprises, their interest in establishing cooperative structures. These service cooperatives combine only part of the assets of beekeeping enterprises necessary for normal functioning of the cooperative by transferring to it the property contribution from fixed positions in the constituent agreement on cooperative creation.

The advantages of such cooperatives creation for beekeeping enterprises are:

- taking part in a large volume production, creating competition for intermediaries and avoid competition within the cooperation, using professional managerial staff;

- receiving profit except production and from subsequent advancement stages of produced bee products;

- possibility of entering the markets, supplies and services, including international markets;

- benefits of coordination in the cooperative association, share risk and provide appropriate control on the market [6].

It is through cooperation beekeeping enterprises can properly form an appropriate system of bee products promotion and opportunity to get a real price for these products both on the domestic and foreign markets.

Beekeeping integration of different areas involves the formation of financial and material resources of enterprises, the creation of highly mechanized large apiaries. It is possible to have a direct connection according to the scheme: bee apiary - processing – product realization.

Horizontal integration (intrasectoral) is generally effective in cooperative groups. Within this type of integration the issues of financial mutual aid and lending, training and retraining, when highly-qualified beekeepers teach students beekeeping through joint work on an apiary, are successfully resolved.

Interregional integration is the acquisition of land integrator of beekeeping land, bee hives and beekeeping resources of the enterprise (agricultural enterprises) in different regions. The principles of voluntariness, democratic centralism, territorial, sectoral, functional and others should be taken into account. Mutual cooperation should provide production growth of bee products and income, solving social problems of the village.

Forming of integration links between service cooperatives and credit unions is also perspective. These structures cooperate in overcoming the shortage of financial

resources for the development of service cooperatives, which in turn will provide the necessary funds and turnover will affect the efficiency of production processes in beekeeping enterprises, facilitate development of new sources of investment of beekeeping products.

Improving the competitiveness of beekeeping enterprises in the future should be made by: association of beekeeping enterprises based on cooperation and the use of integrated systems towards a highly mechanized large bee apiaries; integration of credit unions; maintenance of production based on modern technologies and innovative part in the formation of financial and material resources according to the scheme: production - processing - realization. Such cooperation of all members of the marketing chain should provide production growth of bee products and income, overcoming the lack of financial resources for the development of service cooperatives, which in turn will provide the necessary circulation of funds and affect the efficiency of production processes in beekeeping enterprises, facilitate the formation of new investment sources of production development of beekeeping products.

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## ***SECTION 2. DEVELOPMENT OF THEORY AND PRACTICE OF ACCOUNTING AND PUBLIC REPORTING: CHALLENGES OF THE MODERN TIMES***

### **2.1. ACCOUNTING OF COSTS OF SALES ACTIVITIES AT THE ENTERPRISE**

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**Summary.** The study of the theoretical foundations of accounting for the costs of enterprises established the basic principles of their classification, providing a functional feature of their grouping according to the activities for which the costs were incurred and income received. A detailed analysis of the current accounting methodology showed that data on sales costs can be obtained by checking the primary documents and accounting records. In accounting, the sales process is divided into parts with a separate reflection of income, cost of goods sold and financial results of sales. The study found that marketing costs are aimed at market research, market conditions, study changes in demand for products, and sales costs are limited and are aimed primarily at meeting the needs of consumers in the sale of products. Their size and structure are determined by market conditions, the specifics of marketable products, consumer demand, and the strategic goals of the enterprise.

**Keywords:** sales activities, buyers, customers, receivables debt, sales management, costs of the enterprise.

The modern economic environment requires agricultural enterprises to actively use market-based management methods, which requires new approaches to the management system of the process of marketing agricultural products. The formation of such a system should ensure the adaptation of enterprises to changes in the external environment in order to increase sales efficiency.

An important condition for the successful operation of enterprises is to achieve the optimal level of production costs, which will increase the competitiveness of products and become a real achievement of long-term economic growth of enterprise productivity.

The costs of the enterprise were always and still remain a significant economic category that characterizes the results of the enterprise and its profitability.

According to UAS 16 “Expenses” [10], expenses are defined as a decrease in economic benefits due to the disposal of assets or an increase in liabilities that result in a decrease in equity (excluding a decrease in equity due to owners’ contributions).

By type of activity, costs and revenues are divided into costs and revenues from ordinary and extraordinary activities. In turn, ordinary activities are divided into operating, financial, and investment. Accordingly, operating expenses are grouped by function - production costs (sales), management costs, sales and other operating

costs.

In other words, direct labor costs include: basic salaries of production staff of the enterprise, accrued to workers and employees at tariff rates, piece rates, salaries, including wage indexation, as well as labor costs of freelancers who perform work, related to production; the cost of products issued in kind to workers employed in crop production; allowances and surcharges to tariff rates and salaries, including salaries for night work, for combining professions, expanding service areas; the cost of food, products that, in accordance with the law, are provided free of charge to employees at enterprises in certain industries; payment of annual leave and other additional payment; one-time annual award; remuneration of freelance workers for the work performed in accordance with civil law contracts, including the contract, provided that the settlements with the workers for the work performed are carried out directly by the enterprise.

Other direct costs include all other production costs that can be directly attributed to a specific cost item, including social security contributions, rent, depreciation, etc.

When grouping costs, the object of cost accounting should be understood as the product that needs to determine the costs associated with its production.

Indirect costs are costs that cannot be allocated directly to a particular cost item in an economically feasible way, and therefore require apportionment. To be included in the cost, these costs must be distributed among the objects of accounting. Therefore, in practice, they are often called those that are distributed, and according to the UAS "Costs" - total production costs.

Current costs include costs associated with the production and sale of products for this period. This is usually the bulk of production costs.

To determine the cost of production (exhausted costs) we should emphasize the difference between costs of production and costs of the period.

Product costs are the costs associated with producing or purchasing products for sale. In the manufacturing sector, such costs include all costs associated with the production consumption of production factors.

Period costs are costs that are not included in the cost of inventories and are treated as costs of the period, when they are incurred (administrative, marketing costs, other operating and extraordinary costs).

When making a management decision on any business transaction, a distinction should be made between relevant and irrelevant costs.

Relevant costs are costs that can be changed as a result of making a management decision, and irrelevant - do not depend on such a decision [13, p. 219].

According to the degree of dependence on the volume of activities, costs are divided into fixed and variable costs.

Variable costs are costs that value changes in proportion to changes in production (output). Hence, the amount of these costs per unit of output remains constant.

Fixed costs include costs, the value of which does not change or almost does not change (relatively fixed costs) when changing the volume of production.

Any costs are variable costs if their value depends on the volume of production. This means that increasing the number of manufactured products by 10 times will increase the total amount of variable costs tenfold. One of the interesting aspects of variable cost behavior is that variable costs remain constant per unit of output. However, there are some peculiarities due to the fact that when buying, for example, materials in large quantities, you can get a discount (this option is always considered and analyzed by managers).

As a result, the monetary cost of the material per unit of output decreases with the growth of production and the growth of wholesale purchases. It is clear that such a change occurs only when crossing a certain "limit" of production growth. However, more often the behavior of variable costs is described in the above classic example. Note, that even after crossing this "limit" the behavior of variable costs does not change - we just have a different value per unit of output.

Practice shows that not all variable costs change in direct proportion to the change in activity.

Semi-variable costs are costs that change, but are not directly proportional to the change in activity. Examples of such costs are the cost of purchasing materials subject to a discount in the case of purchasing a large batch, and the cost of time per unit of output, which gradually decreases with increasing skills (so-called experience curve) [12, p.147].

A significant part of semi-variable costs are mixed costs, that contain an element of both variable and fixed costs. A typical example of variable costs is the telephone fee, which includes fixed costs in the form of a subscription fee and variable costs - a fee for the duration of calls.

Fixed (conditionally fixed) costs are costs, the total amount of which remains unchanged when the volume of activity changes. These include rent payments, depreciation, etc. Regarding the behavior of fixed costs, it should be said that fixed costs per unit of output change inversely proportional to the change in activity.

A certain part of fixed costs behaves as fixed costs within certain limits of production, but at the intersection of certain points of its growth also changes in the direction of increase. Examples are the cost of maintaining administrative staff and the cost of maintaining and operating equipment.

Fixed costs are fixed only within the relevant range of activities and at a certain time.

Relevant range is the range of activities within which the interconnection between the amount of costs and their factor remains steady.

For example, rental costs will increase if the increase in production requires additional space. Conversely, rental costs may decrease if the decline in production encourages the company to use less space.

In many cases, when you reach a certain level of activity, costs change dramatically, by leaps and bounds. Such costs are called semi-permanent or incremental.

Semi-fixed costs are costs that change incrementally as the volume of activity changes. An example of such costs is the salary of repair workers, provided that for

the maintenance of each 1000 machine-hours of equipment requires 1 worker.

Thus, in a short period of time, costs can be variable (semi-variable) and fixed (semi-permanent). But over a long period of time, all costs tend to change, i.e. fixed costs become semi-permanent and change gradually.

The most cost-effective approach to building a cost accounting system is to identify typical groups of solutions (such as controlling labor costs or the use of materials) and selecting appropriate cost accounting items (such as products or departments).

Legislative separation of accounting into financial and managerial has led to a debate in the scientific community, and currently there is no single approach to disclosing the essence of management accounting.

Thus, some scholars believe that managerial accounting is a part of accounting, the main task of which is to account for production costs and product costing, others present management accounting as an integrated information system that combines planning, rationing, production organization and more.

Thus, O. Machulka notes that costs are defined as an element of activity, if incurred, then documented [7, p. 30].

I.B. Sadovska notes that the expenses of a certain period are determined simultaneously with the recognition of income for which they were made. If the expenses cannot be directly related to the income of a certain period, they are reflected in the expenses of the reporting period in which they were incurred. In addition, he puts forward the concept of costs to determine the financial result. Inexhaustible costs are reflected in the assets of the balance sheet, and exhaustible costs - in the statement of financial performance [11, p. 311].

The idea of implementing a system of management documentation of production costs deserves attention [2, p. 14]. This will reduce the amount of primary documentation (due to the abolition of internal invoices), excessive costs and production costs, quickly determining the stage of the technological process at which losses occur, which significantly increases the responsibility for spending resources.

In the course of research of theoretical bases of the account and control of sales activity, it was established that the important organization of efficiency of economic activity is the accurate organization of sales policy. In this context, the proposal to develop a model of sales policy of an agricultural enterprise deserves attention.

Thus, it can be argued that the efficiency of the enterprise largely depends on timely and complete information on operating costs, which can provide only an accounting system based on the existing legal framework.

Accounting for sales activities at enterprises has always been and still remains a topical issue, because the transformation of commodity assets of the enterprise into cash plays an important role in the production process. It is carried out on the basis of the product sales process. At the stage of marketing products, companies reimburse their costs, sell the value of the additional product and receive a corresponding profit. Sales of products - is to determine the feasibility of economic activity of enterprises and quantitative and qualitative assessment of their labor.

Clarification of the essence of sales activities by stages and functional elements



and expanding its boundaries requires changes in the organizational system and management of the economic process. This requires the creation of an appropriate sales information system - the collection, processing and synthesis of primary data for internal and external users, providing feedback between the elements of the economic mechanism.

Traditional methods of accounting and control of sales operations are not able to meet the needs of management in relevant information (regarding the choice of optimal and effective methods and techniques of sales promotion, identifying products that require additional efforts to promote them on the market). In such circumstances, operational control and sales management becomes more complicated.

Analysis of costs by elements allows one to study their composition, to determine the specific weight of each element, the share of living and tangible labor in total production costs [14, p. 296].

In the general management model of sales policy at the enterprise, the leading place is occupied by the account and control of sales activity that will provide reception of positive financial results.

An in-depth analysis of the classification of costs gives grounds to determine that the costs of sales relate to the operating costs of the reporting period. Their composition is shown in the image. 1.

The sales process is influenced by uncertain risks due to market conditions, prices and other factors that are beyond the reach of enterprise management. It is established that risk is one of the main factors influencing the formation of profits. This makes it necessary to predict the level of risk of entrepreneurial activity of agricultural enterprises.

According to the considered provisions, accounting and audit of expenses of sales activity should provide:

- correct definition and reliable classification of operating costs;
- correct delineation of costs by type of activity;
- correct and complete documentation and timely reflection in the registers of sales costs;
- complete, reliable and unbiased information on marketing costs for management purposes;
- observance of legislative acts in the formation of information on costs incurred;
- completeness and reality of the reflection of sales costs in the reporting of the enterprise;
- correct determination of costs in accordance with the accounting policy of the enterprise;
- correct allocation of costs to the relevant reporting periods;
- completeness: whether all actually incurred expenses are reflected in the reporting;
- assessment: the correctness of determining costs in accordance with the adopted accounting policy;

- correctness of reflection: verification of costs in relation to their reality and accuracy of reflection and belonging to the current reporting period;
  - affiliation: whether all reflected costs belong to the enterprise;
  - legality: compliance with laws, instructions, regulations and other regulations
- to determine and reflect costs;
- reliability: compliance of cost indicators with primary documents;
  - consistency: consistency of cost determination methods during the reporting period;
  - compliance: attribution of costs to the relevant reporting period in which they were incurred.

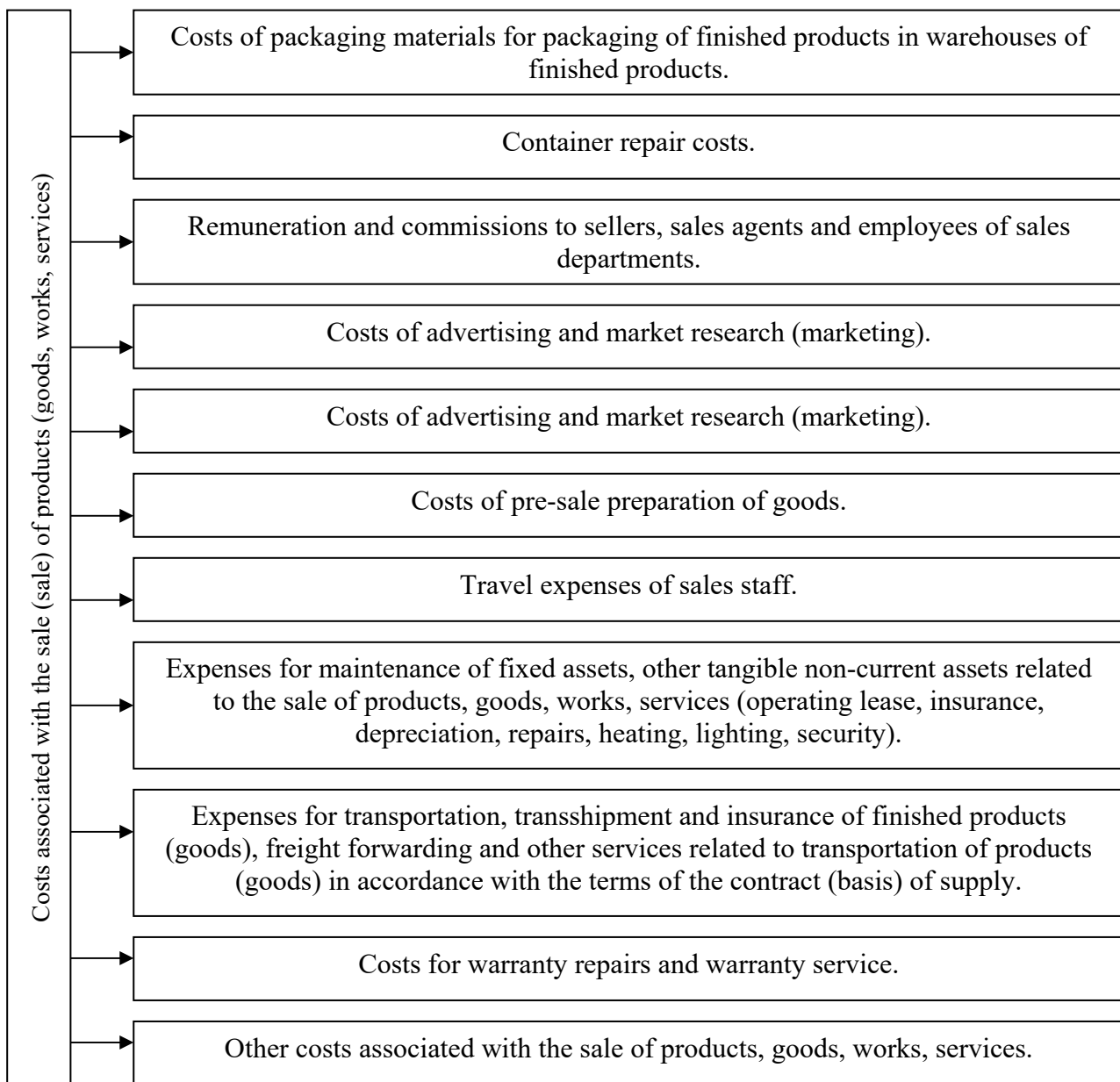


Image 1. The composition of sales costs

An important role in conducting clear financial and economic activities is the establishment and compliance with the company's accounting policies.

Accounting policy is a set of methods and procedures used by the company to prepare and submit financial statements, i.e. the company's choice of certain and specific methods, forms and techniques of accounting based on current business rules and characteristics of the enterprise.

Constant (from year to year) application of the chosen accounting policy, in other words - consistency - one of the basic principles of accounting, established by Art. 4 of the Law of Ukraine "On Accounting and Financial Reporting in Ukraine" [4]. However, this does not mean that by determining the approaches to accounting for assets or liabilities, the company will no longer have the right to change them. This possibility is provided in paragraph 9 of UAS 6 "Correction" of errors and changes in financial statements" [8]. It is allowed to transform the accounting policy in situations when:

- the statutory requirements of the enterprise change;
- the requirements of the body that approves the accounting regulations (i.e. the Ministry of Finance) change;
- the changes will provide a reliable reflection of events or transactions in the financial statements of the enterprise.

The first two cases are almost rare.

Changes in accounting policies that accurately reflect the events or transactions in the entity's financial statements are made if, in the accountant's opinion, the use of new accounting policies will more accurately disclose the entity's financial statements.

The standards do not specify the specific cases when it is necessary to change the accounting policy. Therefore, if the regulations that introduce changes in accounting policies prescribe the date of their start, it is from them that they will have to start. However, it is necessary to remember one of the basic principles of accounting, given in Art. 4 of the Law of Ukraine "On Accounting and Financial Reporting in Ukraine" are sequences. That is, the constant annual application of the company's chosen accounting policy, which can be changed only in exceptional cases.

Note: for each single year, you can not re-sign the order of accounting policies, but make changes to the current (basic) policy. The Ministry of Finance recommends in this regard: "The administrative document on accounting policy can be adopted as a base for the time of the enterprise, which, if necessary, changes from a certain time" (see the above-mentioned letter to the Ministry of Finance № 31-34000-10-5 / 27793) [6]. If the changes cover most of the text or significantly affect its content, the accounting policy should be set out in full in a new version.

The consequences of the change in accounting policy are due to p. 11 - 13 UAS 6. Accounting policies should be applied to events and transactions from the moment they occur, except when this is not possible (paragraphs 11 and 13 of UAS 6). That is, we will have to review the operations for which new approaches have been chosen, for the entire time of their implementation and re-perform all the calculations

as if they were used in the enterprise from the beginning.

When changing the accounting policy, it is necessary to determine its impact on the events and operations of previous periods. This is done by adjusting the balance of retained earnings at the beginning of the reporting year and re-providing comparative information on previous reporting periods (paragraph 12 of UAS 6). If the amount of retained earnings at the beginning of the reporting year cannot be determined reliably, the accounting policy applies only to events and transactions that occurred after the date of the change in accounting policy.

It should be noted that not every change in the accounting policy order falls under the definition of changes in accounting policies. A striking example is the change in the depreciation method. Although it is prescribed in the order of accounting policy, it is nothing more than a change in accounting estimates. This position was confirmed by the Ministry of Finance in a letter dated November 2, 2009 № 31-34000-20-23-5535 / 5708 [6]. Therefore, changes in accounting policies should be clearly distinguished from changes in accounting estimates. If it is impossible to distinguish, it should be considered as a change in accounting estimates, accounting for which is only promising (paragraph 14 of UAS 6).

At the researched enterprise, the Order on accounting policy is approved annually. Let's analyze which provisions on cost accounting should be reflected in the Order on Accounting Policy, taking into account the legislative changes in 2012:

1. List and composition of articles for calculating the production cost of products (works, services).

In accordance with paragraph 11 of UAS 16 "Costs" companies must set them independently. This paragraph specifies that the production cost includes:

- direct material costs;
- direct labor costs;
- other direct costs;
- variable overhead and fixed allocated overhead costs.

Despite a number of legislative inconsistencies in the accounting of general production costs in 2011, these rules will remain unchanged. They are included in the production cost in both accounting and tax accounting (paragraph 138.8 of the TCU) [9].

2. List and composition of variable and fixed overhead costs (basic and additional salaries of general production staff and contributions to social activities; costs of water supply for the technological process; energy costs of the technological process, etc.). On the basis of item 16 of UAS 16 "Costs" the enterprises should establish them independently.

3. Base for the distribution of variable and fixed overhead costs.

According to paragraph 16 of the UAS, variable overhead costs are allocated to each cost object (account 23) using the distribution base (hours of work, wages, volume of activity, direct costs, etc.), based on the actual capacity of the reporting period. Fixed are established for each cost object using the distribution base (hours of work, wages, direct costs, etc.) at normal capacity. Unallocated fixed overhead costs are included in the cost of goods sold, works, services (account 90) in the period of

their occurrence.

Since for the purposes of determining the tax cost of overhead costs are also subject to distribution between production cost and cost of sales, determining an adequate distribution base is a question relevant to tax accounting.

4. Normal production capacity of structural units (units of output, volume of work performed and services provided, etc.) is the basis for the distribution of fixed overhead costs, which will be used for both accounting and tax purposes.

5. Defect cost rates.

It is better to state this information in the separate order on the enterprise. After all, according to paragraph 138.7 of the TCU [9], enterprises have the right to independently determine the allowable norms of technically inevitable marriage in the order of the enterprise, provided that its size is justified (to be taken into account when determining the object of taxation). Such norms, independently established by taxpayers, are in force until the adoption of the relevant norms of the Cabinet of Ministers. At the present moment, such norms have not yet been established.

6. The period of creation of qualifying assets.

UAS 31 "Financial costs" refers to qualifying assets that require significant time to create. However, it does not specify this segment. Hence, the conclusion that companies can determine it themselves.

The Ministry of Finance recommends considering a qualifying asset, the creation of which takes more than three months (letter of the Ministry of Finance dated 01.06.06 № 31-34000-10-5 / 11601) [6].

This will also affect the accounting of financial expenses in tax accounting (paragraph 138.10.5, paragraph 146.5 of the TCU) [9]. This is where it is necessary to follow the recommendations of the Ministry of Finance, as self-employment leads to tax risks.

Documentation is the first stage of accounting, that includes: registration and recording of information regarding facts, transactions, processes, its processing and generalization.

Relevant primary documents are provided for documenting business transactions. According to the Regulation on Documentary Support of Accounting Records, approved by the order of the Ministry of Finance of Ukraine dated 24.05.1995 № 88 primary documents are drawn up on standard forms approved by the Ministry of Statistics of Ukraine, as well as on specialized forms approved by ministries and departments of Ukraine [5].

Primary documents must be drawn up at the time of the transaction, and if this is not possible, it must be immediately after its completion. They must be timely received by the accounting department and contain complete and accurate information on each transaction. The structure of the document flow should be such as to ensure the timely receipt of the necessary information for both accounting and control and operational management of product movement.

Depending on the needs of informational support of the managerial system, the stages of organization of primary accounting of sales activities, requirements for the initial registration of sales operations, as well as the features of documenting sales

transactions through different channels are revealed (Image 2).

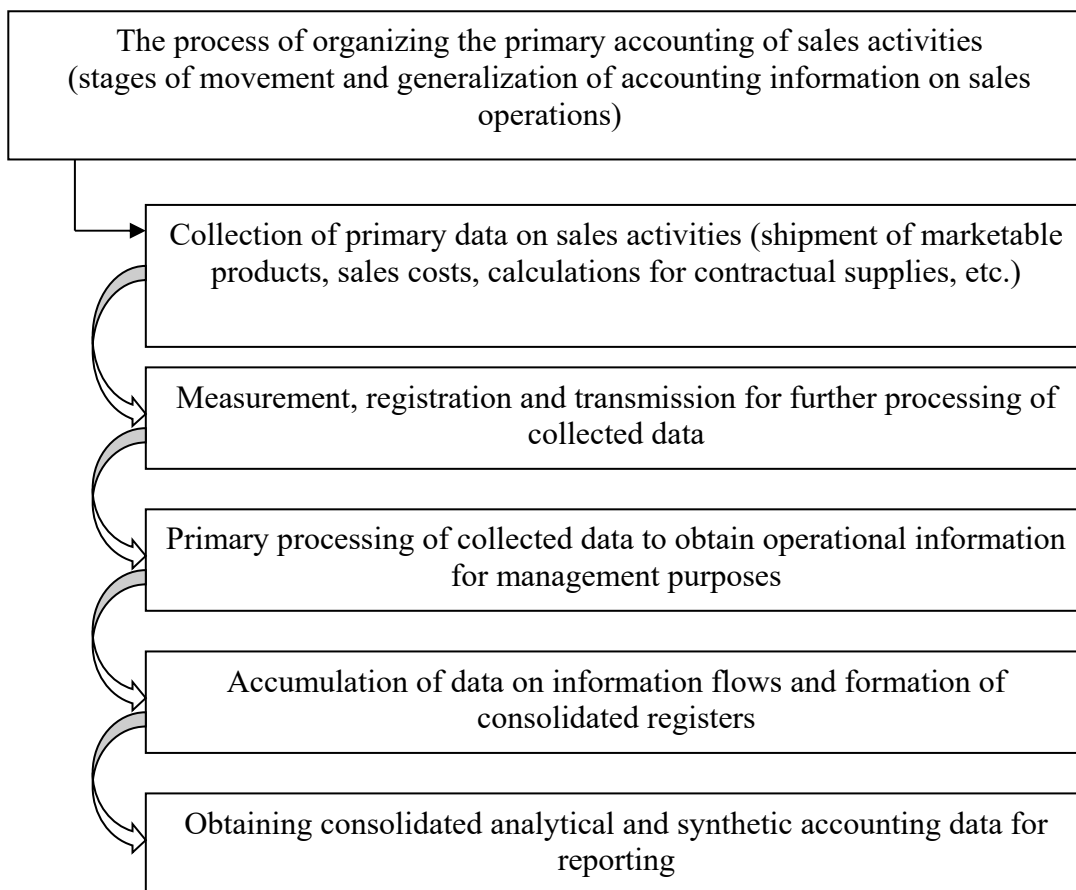


Image 2. Stages of organization of primary sales accounting in operating activities

Sales cost data can be obtained by checking primary documents and accounting records.

In accounting, the sales process is divided into parts with a separate reflection of income, cost of goods sold and financial results of sales. The study found that marketing costs are aimed at market research, market conditions, study changes in demand for products, and sales costs are limited and are aimed primarily at meeting the needs of consumers in the sale of products. Their volume and structure are determined by market conditions, the specifics of marketable products, consumer demand, strategic goals of the enterprise.

Remuneration of employees is calculated based on the amount of revenue from the sale of goods or time worked at the enterprise in accordance with the timesheet, contracts with sellers and documents on the proceeds.

On the basis of primary documents on labor remuneration, a consolidated statement of accrual and distribution of labor remuneration and deductions from it by objects of accounting is compiled on a monthly basis.

Disinfectants, low-value and perishable items and other materials are released to the wholesale warehouse or shop on the limit-withdrawal cards for receipts and invoices, and written off by relevant acts.

If employees engaged in the sale of goods, receive funds for business trips or in

the report, then in a timely manner, they must submit to the company's accounting a certain list of documents.

The initial stage of the organization of the primary accounting of settlements with accountable persons is registration of the order of the head of the enterprise.

The order is the main document for sending an employee on a business trip. Without it, as we have already found out, the trip will not be considered a business trip. According to item 1.1 p.1 Instructions on business trip in the order reflect:

- destination;
- the name of the enterprise where the employee is sent;
- term of business trip;
- its purpose.

In addition, it indicates the names and positions of seconded employees. The general provisions of the Instruction on business trip give the head of the enterprise the right within the limits of norms at own discretion to limit the sums and the purposes of use of the means given out on business trip. At the same time, the manager may decide to reimburse the costs, that according to regulations is not necessary to reimburse, or increase the amount of daily allowances. This is reflected in the order.

In addition to the order, an estimate of business trip expenses is added. The General Provisions of the Instruction on Business Trips state that the company is obliged to provide the business trip in advance in the amounts established by regulations. Its amount is determined by cost estimates.

There are five categories of travel expenses:

- 1) daily (expenses for food and personal needs of the employee);
- 2) for the travel to the place, back and at the place of business trip;
- 3) for accommodation, taking into account the services provided in the hotel;
- 4) to pay telephone bills;
- 5) for the issuance of passports, visas, compulsory insurance, transfers, payment of taxes and fees and other costs associated with the rules of entry and stay at the place of business.

The money under the report is issued for travel expenses, purchase of various materials, small household, postage and other expenses. At the same time, it is necessary to adhere to the current rules for regulating cash circulation. An advance is issued to the accountable person in the amount necessary for the implementation of the planned measures, and only if the accountable person has no arrears on previously issued amounts. An advance is issued on the basis of a cash disbursement order or payment statement if the money is issued to several persons at the same time. Therefore, when issuing an advance on a payroll, the cash disbursement order should be issued not for each employee, but for the total amount of cash issued from the cash register. The accountable person has the right to spend the advance only for the purposes for which it was issued. In case of transfer of funds from the current (currency) account, the money under the report is issued on the basis of a payment order of the established form.

Justifying documents for the expenditure of cash for household needs can be:

- regarding the acquisition of material values: cash receipt of the purchase registrar and delivery note to the warehouse; invoice, tax invoice, consignment note and documents for delivery of purchased property to the warehouse of the enterprise;
- regarding the work performed and services performed by the contractor: receipt of acceptance of money; the root of the profitable cash order and the act of acceptance-transfer of the performed works (services), etc.;
- regarding the costs of payment of wages for one-time work: employment agreement concluded with employees and executed in the prescribed manner, the statement of accrual of wages and deductions from employees;
- other documents - depending on the purpose of business expenses and related business transactions.

Electricity, heat, water supply and sewerage are supplied to the company in accordance with the concluded agreements.

In accordance with the concluded contracts, suppliers issue invoices for these services (heat, electricity, water supply). As they pay, they issue tax invoices and deeds.

After receiving documents from utility providers, the company's accounting department calculates utilities, according to which part of the utilities refers to a specific object of accounting (administrative costs, sales costs, other costs).

For the protection of the premises of the enterprise enters into contracts for the protection of each object (warehouse, shop, office).

Contracts are also concluded for advertising goods in the media. According to the acts of work performed, the corresponding amounts are related to selling expenses. Similar documents are drawn up and performed in work on the current repair of warehouses and shops, freight forwarding services, if they are performed by contractors. Packaging materials, materials spent on the repair of containers, are written off by relevant acts.

In some cases, when organizing sales activities, "Nika LLC" insures its goods. Insurance contracts are concluded about this and insurance policies are received from the insured, the amounts paid for them are also included in sales costs.

During the sale of goods there are costs directly related to the sale: wages of sellers, loaders, transport work, depreciation of fixed assets (trade equipment, retail space, cash registers), heating, lighting, etc. All of them refer to sales expenses, which are recorded in the active account 93 "Sales expenses". The debit of the account reflects the amount of recognized costs of sales (costs of packaging materials, transportation of products, goods under the terms of the contract, costs of marketing and advertising, wages and commissions to sellers, sales agents, sales staff, depreciation, repair and maintenance of fixed assets, etc. tangible non-current assets used to ensure the sale of products, goods, works and services) on the loan it is used a write-off to account 79 "Financial results".

Account 93 "Sales Costs" records and accumulates sales costs.

Analytical accounting of sales costs of the enterprise is conducted in the information in terms of cost items and economic elements. When organizing the accounting by cost centers, the relevant registers are kept in the context of



warehouses and services related to the sale of finished products. Correspondence of accounts on account 93 "Sales costs" of the enterprise is given in table. 1.

Table 1

Business transactions on account 93 "Sales expenses"

Date	Type of operation, document number.	The name of the analytical account		Correspondence of accounts		Sum
		Dt	Kt	Dt	Kt	
15.03.2020	Receipt of goods and services PZ000000114 from 15.03.2012 Services	Economic activity costs of marketing services	Zinkiv Elevator LLC Receipt of goods and services PZ000000114 from 15.03.2020	93	631	52,87
06.07.2020	Write-off of goods PZ000000479 from 06.07.2012 Depreciated goods	Economic activity ATP diesel fuel	Taxed VAT Diesel fuel Receipt of goods and services PZ000000161 from 17.04.2020 fuel system	93	203	198505,87
23.07.2020	Receipt of goods and services PZ000000439 from 23.07.2012 Services	Economic activity Radushansky Elevator LLC product preservation	Radushansky Elevator LLC Receipt of goods and services PZ000000439 from 23.07.2020	93	631	220286,55
24.07.2020	Receipt of goods and services PZ000000573 from 24.07.2012 Services	Economic activity PJSC "Dniprovsk HPP" elevator services	PJSC "Dniprovsk HPP" The main contract Receipt of goods and services PZ000000573 from 24.07.2020	93	631	227948,12
15.08.2020	Write-off of goods PZ000000646 from 15.08.2012 Depreciated goods	Economic activity PJSC "Dniprovsk HPP" diesel fuel	Taxed VAT Diesel fuel Receipt of goods and services PZ000000162 from 19.04.2020 fuel composition	93	203	231301,16
11.09.2020	Write-off of goods PZ000000778 from 11.09.2012 Depreciated goods	Economic activity PJSC "Dniprovsk HPP" transport services	Taxed VAT Diesel fuel Receipt of goods and services PZ000000529 from 10.08.2020 fuel composition	93	203	241937,20
31.10.2020	Write-off of goods PZ000001021 dated 31.10.2012 Depreciated goods	Economic activity JV Nibulon LLC Fuel costs	Taxed VAT Diesel fuel Receipt of goods and services PZ000000570 from 30.08.2020 fuel composition	93	203	256749,98

The general method of accounting for sales costs by elements is similar to the method of accounting for production costs. That is, at the first stage the elements of costs are formed, at the second stage they are written off to the financial results.

In the internal accounting, it is determining the possibility of direct or indirect allocation of costs to the relevant type of product. Indirect costs are shared between individual products.

Data from the registers of analytical accounting are transferred to the journals-orders, where, at the end of the month, the final data are transferred to the general ledger, which calculates the turnover on debit and credit of each account.

The general ledger is used to summarize the data of journals-orders, mutual verification of records made on individual accounts and compiling the balance sheet. Due to the fact that the cost of sales affects the financial result, it is advisable to distribute these costs between individual types of products sold outside financial accounting. In this case, the costs can be distributed monthly as follows [25, p. 145]:

a) general expenses - between types of sold products in proportion to its production cost;

б) transport costs (if the share is significant) - by type of products sold, they are simply written off at the end of the month.

As a result of the research, it is established that the current accounting model reduces the analytical value of the cost indicator, complicates the pricing process. It is necessary to provide for the possibility of separate accounting of direct and indirect costs of marketing and sales activities in order to adjust the cost of sales in the amount of direct sales costs.

The reflection on account 90 shows only the production cost of the product and automatically suspends the monitoring of the economic process at the stage of production and does not allow to fully reflect the sales activities that involve additional measures to promote the product on the market and, consequently, mandatory additional costs.

Based on this, the approach to changing the name and purpose of account 90 from "Cost of sales" to "Commercial cost" is noteworthy. This will make it possible to improve the method of accounting for the costs of sales activities, which are reflected in accounts 90 "Cost of sales" and 93 "Costs of sales" [12, p. 216].

The results of the study indicate the need to deepen the analytical accounting of sales to improve the management and control of sales activities. Analytical accounting should provide the opportunity to analyze the proceeds from the sale and choose the best of the available and possible areas of sale. In this case, the quantity, quality and effectiveness of analytical information will depend on the reality of the presentation of economic processes, during the implementation of which provides income and determine financial results.

When studying the peculiarities of the organization of analytical accounting, it was found that sales activities, providing the opportunity to obtain financial results, are on the border of external and internal environment of the enterprise. Other economic processes (supply, production) significantly depend on sales policy (markets).

In order to differentiate between external and internal environment and in order to increase the analytical nature of accounting, the scheme of relationships between economic processes is specified, considering the impact of markets on them (Image 3).

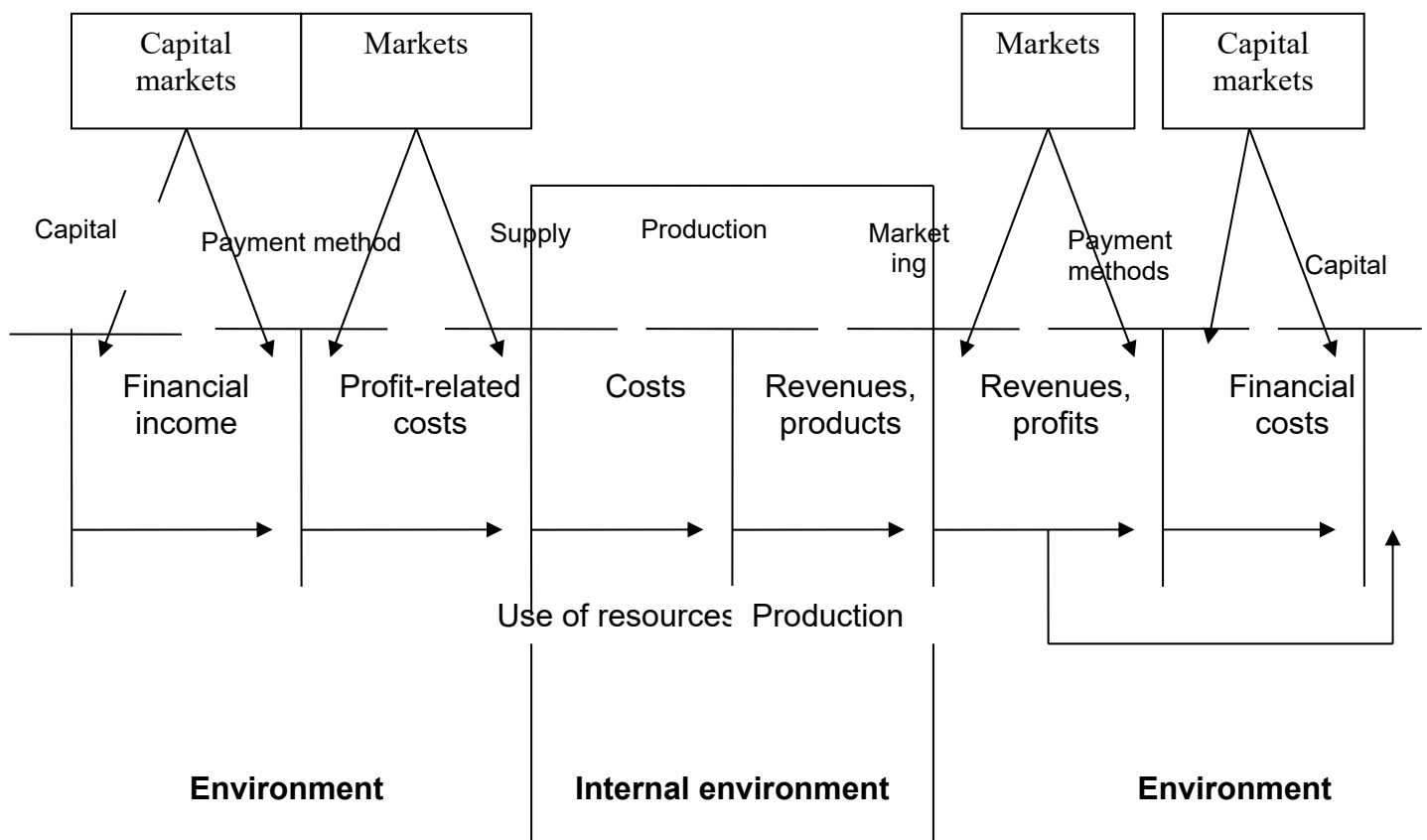


Image 3. The scheme of relationships between economic processes, considering the influence of markets [3, p. 121]

The place of sales activity in the environment of economic formations through the system of analytical accounting requires the separation of accounting data for internal and external users (primarily for reporting) and strengthening the internal control of the sales process. To do this, it is proposed to organize analytical accounting of income and expenses separately by areas, regions of sale, market segments.

According to the results of the study in analytical accounting, it is advisable to identify significant aspects of the sales process. They should be considered as separate economic categories: the number of marketable and sold products, cost of sales, the amount of revenue and income, marketing costs, profit and loss. Other concepts and categories can be attributed to the objects of accounting, provided that they are potentially useful to consumers of accounting information.

Criteria for analytical detailing of accounting data to determine the financial results of sales in the operating activities of agricultural enterprises may be: the direction of information flows (external, internal); objects of analytics (enterprise as a whole, departments (shops, teams), types of marketable products); time periodization

(for a certain period, on the current date); cost categories.

This practice will allow organizing an effective system of management accounting and internal reporting at the enterprise, significantly increase the quality of internal control.

For the purpose of formation of operative analytical data on a course and results of sales activity, it is expedient to use the Information of the account of expenses of sales activity and the Statement of the account of sales on channels. Their management will provide an opportunity to control sales costs at the main stages of the sales process (from forecast market research to control sales activities), assess the feasibility of their implementation. The information can be used as a form of internal reporting on sales transactions.

The accounting system, which is based on the use of highly efficient computer technology, is a special form of accounting that meets modern management requirements.

A wide range of software products for automation of accounting for different types of enterprises poses a difficult task for potential consumers: to choose the best solution from many unfamiliar, unusual options and their combinations.

The basic capabilities of the program must meet the needs of the enterprise. Therefore, before choosing a future system, it is important to determine what activities the company is engaged in and in what areas it operates.

The researched enterprise does not use software in the organization of accounting processes. In order to test the automation of the studied area of accounting, we will take as a basis the configuration "Accounting of an agricultural enterprise for Ukraine". Operation of such a module is possible only with the platform "1S: Enterprise" version 8.1.14 and above.

The main functionalities of the program:

1. Accounting and tax accounting in accordance with national standards of Ukraine.
2. Ensuring the solution of all tasks facing the accounting department of the enterprise: from the processing of primary documents to the formation of regulated reporting.
3. Tax accounting in the context of several types of VAT (optional): separate books of sales, purchases, VAT returns are formed.
4. Analysis of other sales, gross income and expenses.

The following areas of accounting are automated in the configuration:

1. Accounting in crop production. The concept of "technological operation" is introduced. All documents on the registration of the fact of work performed accumulate data in terms of typical technological operations. The structure of crops is entered into the program, graphic representation of the scheme of fields is also possible. Costs of preparation for production activities are accumulated in terms of fields, crops and cost items. The mechanism of cost distribution in proportion to the area of fields, cost analysis, calculation of actual cost is implemented.

2. Accounting for mutual settlements on land lease (accounting for shareholders). Implemented automatic calculation of charges and deductions.

Payment is made via all possible ways: non-cash, cash, finished products, goods. Implemented automatic calculation of charges and deductions.

3. Livestock accounting. Animals are taken into account in the summary account, in heads, in live weight. The accountant has the ability to display in the system all business transactions for the registration of animals from offspring to slaughter.

4. Accounting for transport and agricultural machinery. The program records waybills and registration sheets, keeps track of fuel, speedometer readings and balances in tanks, calculates fuel consumption according to standards, calculates piecework salary. In addition, it is possible to analyze the cost of maintaining the machine-tractor fleet of drivers, mechanics and their assistants.

5. Accounting for processing and ancillary production is implemented with the ability to calculate the actual cost and analyze the cost structure of finished products.

6. Accounting for other expenses. It is conducted in the context of divisions, objects (nomenclature groups) and cost items. The mechanism of distribution and analysis of costs, calculation of the actual cost of finished products is implemented.

7. Extended opportunities for salary calculation. Personnel accounting; system of flexible adjustment of types and groups of calculations; calculation of sick leave. Formation of standard and regulated reports. Payment of the calculated salary can be made both through the company's cash desk, through the bank card, and services, goods and finished products.

By using "1S: Enterprise 8. Accounting of agricultural enterprises in Ukraine" you can keep accounting and tax records of economic activities of several enterprises both separately and in the general information base (and in the role of individual organizations may be individual entrepreneurs). This is convenient if their business activities are closely linked: you can use general lists of goods, contractors (business partners), employees, storage facilities, etc., and mandatory and specialized reporting to form separately.

The program "1S: Accounting" has a component structure.

Automation of cost accounting is carried out in the following stages:

- 1) setting up an account plan;
- 2) setting up directories;
- 3) establishment of analytical accounting;
- 4) input of primary information;
- 5) receiving reports.

Directories are special tools that keep lists of the same type of accounting objects and store the parameters that characterize these objects. All directory objects have their own unique code, that allows the program to identify them, regardless of the values of other parameters, including the name. As a rule, each type of subaccount corresponds to a separate directory.

For example, the list of employees of the enterprise is stored in the directory "Employees", and to enter fixed assets is used directory "Non-current assets", to save information about the costs of the company use the directory "Types of costs". Each field in the "Document" or "Operation" dialog has a certain type of value. If this type

is a number, string, or date, you can fill in this field directly from the keyboard. And if this type is a directory item, then when you access this field, a list of items in the directory will automatically appear, from which the accountant must select the desired value. In addition, the elements of most directories are characterized not only by the name but also by a set of other parameters. For example, for fixed assets it is - inventory number, initial cost, accounting account, depreciation account and depreciation item, commissioning date, etc. These parameters can be automatically used by the program when generating postings and printed forms of documents.

The program "1S: Accounting" allows you to add to the list of reference books of the standard configuration, creating the necessary directories yourself.

The list of directory items in the program "1S: Accounting" can be multileveled. In this case, all directory lines will be divided into two types: directory items and directory groups. Groups allow you moving to the lower levels of the multilevel directory. The use of multi-level directories allows you to detail the degree of input and storage of information. Items and groups of items in a multilevel directory can be transferred from one group to another. The program "1S: Accounting" allows you to create multi-level directories with nesting up to 10 levels.

Within a single directory, different items can be grouped together, so it's a good idea to group them before you start filling in the directories. The main criteria for grouping should be certain criteria that is used to analyze the accounting information (receive reports). Groups of elements, in turn, can be divided into subgroups (which is very convenient for setting up standard accounting reports) so that they reflect the state of economic assets by individual groups.

You can perform various actions on items and groups of items in the directory:

- to change the name;
- to change the values of details (parameters);
- to move from one group to another;
- to destroy (mark for destruction);
- to perform a search by name and other details;
- to sort, copy, etc.

This configuration makes it possible to track all income and expenses of the organization in terms of several types of activities carried out by the organization, carried out in the directory "Activities".

In this work, we use the directories "Activities" and "Types of costs".

In most cases, the type of activity is indicated directly in the forms of those documents that form the postings of income or expenses.

Accordingly, at the end of the month, financial results will be obtained independently of each activity.

In some cases, the type of activity is strictly defined for directory items. For example, for each employee (in the directory "Employees") must be specified the type of activity to which will be the cost of calculating the employee's salary.

If we do not need to keep records of individual activities, we will leave one element of "Main activity" in this guide. Let's fill the constant "From default activity" with this element of the directory. After that, today's type of activity will be

substituted in one requisite on all requisites and directories.

The "Types of costs" directory contains a list of types of costs. The directory is used both when editing documents and for analytical accounting of accounts (in our example, accounts 91 and 92).

The directory has a three-tier structure. For each element of the directory you should enter the name and specify the account to which at the end of the month will be written off the amount of expenses under this article. This information will be used when conducting the document "Financial results" in the mode "Closing cost elements".

The checkbox "Applies to overhead costs" is an indication that the current expense item is the analytics of account 91 "Overhead costs".

Each transaction contains one or more postings that reflect the business transaction in accounting in kind and in monetary terms. Each posting, in turn, may consist of one or more correspondences. Postings that contain multiple correspondences are called complex. In complex postings, the debit of one account corresponds to the debit of several accounts, and vice versa.

A typical operation template is used to perform standard operations.

Creating a template of a typical operation is in the mode "1S: Accounting", which allows the accountant to debug the program according to their needs.

The program provides the most effective means of entering postings on the facts of economic activity - the compilation of correspondence accounts for documents.

Two documents are provided to automate the accounting of inventories or services related to the company's sales costs. The first of them is "Income invoice", the entered income invoices are stored in the journal of the same name. The second is "Incoming invoice" is entered upon receipt of an invoice from the supplier, in case of prepayment, this document can play the role of an order.

If there is no prepayment, i.e. stocks received from the supplier and only then will be paid, then the entry of the document "Incoming invoice" is optional. In this case, the role of the order during payment is played by the "Agreement" or the same "Income invoice", which is accounted for stocks at the company. If the supplier issued an invoice and this invoice was paid before receiving the goods (prepayment), you must use the document "Incoming invoice". Then, in the case of obtaining inventories, you should enter "Income invoice" on the basis of the document "Incoming invoice".

To automate the write-off of inventories for marketing costs, the company is assigned the document "Write-off of goods and materials".

Completing the form of this document should begin with the selection of the warehouse from which to write off inventories (for example, fuel warehouse №2), the expense account to which will be written off the book value of objects (account 93), the relevant articles of the analyst of this account. You should also indicate the reason for the write-off, which will be required for the formation of the printed form of the act of write-off.

To automate the receipt of initial and reporting information related to the

calculation of the amount of deductions and deductions, in the typical configuration of the program "1S: Accounting", provides the appropriate document: "Payroll".

Using the document "Payroll" it is possible to perform several operations:

- payroll to employees of the enterprise;
- formation of advance accrual information;
- entering the information base, the balances of settlements with employees at the beginning of the reporting period.

When using the accounting program "1S: Accounting", the procedure for computerization of cost accounting is as follows.

The document "Account Card" is regulated and intended for the following operations: closing the accounts of overhead costs and determining the final financial result of the enterprise, i.e. closing all accounts of income and expenses (accounts class 7.9) to the relevant subaccounts 79 account.

Each of these transactions corresponds to a certain stage of determining the financial results of the enterprise (the mode of operation of the document) and is set directly in the details "Determination of financial results" of its dialog form.

At the stage of "Determination of financial results" is the write-off of the balance of accounts of income and expenses of the enterprise to the relevant subaccounts of account 79 "Financial results".

Analytical accounting is conducted to obtain more detailed information on the availability and movement of funds of the enterprise. The very opportunity of analytical accounting and the number of its possible sections on one account is determined in the process of configuring the program.

In the program "1S: Accounting" analytical accounting is organized using a special mechanism "subaccount". At the configuration stage, a list of possible types of subaccounts is determined. The type of subaccount is understood as a set of similar objects of analytical accounting. Thus, all fixed assets form a kind of subaccount "Basic Accounts", all materials, respectively, - "Materials", etc.

Maintenance of analytical accounting for a specific account is determined by the establishment of subaccounts, which is set in the Chart of Accounts. If for the account of analytical accounting is set using a set of types of subaccounts, then such analytical accounting is called multilevel. On the other hand, analytical accounting can be multi-level, if one of the subaccounts of the account is a multi-level directory.

In the program "1S: Accounting" there is an opportunity within one synthetic account to receive several systems of analytical accounts, which, in turn, comprehensively reflect the primary information. In each system of analytical accounts, information is grouped and summarized for management purposes according to a certain principle determined by the types of subaccounts.

Analytical accounting can be maintained for any account for the subaccount and include from 3 to 5 different sections of analytics, while organizing the conduct of analytical accounting in the required sections.

On account 93 "Sales costs" analytical accounting is conducted in terms of activities and types of costs.

The program implements the ability to work with both regulated and standard



reports. A set of standard reports is included in the default configuration. Standard reports are a holistic system that allows you to generate some reports based on others, detailing the report data. They are designed to obtain data on the results of accounting entries in different sections. Such reports may be prepared using the Chart of Accounts used in the program, regardless of the content and purpose of specific accounts. Standard reports can be used to obtain both generalized and detailed information on any areas of accounting.

To work with reports, use the menu item "Reporting". It is necessary to enter the values of the parameters that determine the composition of the data included in the report (the period for which accounting data will be issued, by entering the start and end dates, other parameters, such as currency type).

The program also provides the ability to save a set of parameters for a report of a given type for future use, and the ability to detail (decrypt) reports when viewing it. At the lowest level of detail, the transition to a specific posting operation is performed.

Let's consider the first most commonly used in accounting practice report from the list "Balance Sheet". This statement should contain information on the balances at the beginning and end of the period on account 93 on the turnover of debit and credit during this period on the account.

Since the account 93 "Expenses on sales" is an analyst, it is advisable to obtain a distribution of balances and turnovers for specific objects of analytical accounting (subaccount). Such information can be obtained by generating a report "Balance sheet on the account".

The Account Analysis report provides information on the account's turnover with other accounts for the selected period, as well as on the balance at the beginning and end of the period.

The report "Analysis of the subaccount account" contains the total amounts of account turnover in correspondence with other accounts for the reporting quarter, as well as account balances as of the beginning and end of the period in terms of analytical accounting. It is needed for accounts on which analytical accounting is conducted.

It is worth noting a significant level of quality of the new generation technology platform, which is based on the Configuration "1S Accounting Enterprise 8". Furthermore, it has the most complete informational and methodological support, responds to all additions to current legislation.

Thus, the automation of enterprises using the program "1S Accounting" version 8.1 and higher and has quite significant advantages that make it more attractive to many entrepreneurs, small, medium and even large enterprises. We can even say that at the very beginning of its popularity, it began to assert itself in its merits and convenience of accounting in order to become an industry standard in solving accounting problems.

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## ***SECTION 3. TAXATION OF ENTERPRISES IN MODERN ECONOMIC CONDITIONS***

### **3.1. PECULIARITIES OF TAXATION OF AGRICULTURAL PRODUCTS**

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**Summary.** The article analyzes the peculiarities of taxation of agricultural producers. Emphasis is placed on the requirements for information support of business transactions in terms of taxation, emphasis is placed on the importance of documentary and accounting support for tax payments in the management system of agricultural enterprises. The essence and features of being on both the general and simplified taxation system are revealed. There are requirements for business entities in terms of the income tax payer, value-added tax, property tax (in terms of land fees), fees for special water use, environmental tax. Features of payment of the uniform tax of 4 groups in the agricultural enterprises are reflected.

**Keywords:** taxation, taxes, the general system of taxation, simplified system of taxation, taxation of agricultural enterprises.

In modern conditions, the company is one of the most powerful driving forces of the economy of any country. Among the factors that determine the development of enterprises and entrepreneurship, the conditions of taxation occupy a prominent place, because they determine the performance of taxpayers. The tax system of Ukraine is at the stage of improvement, which is primarily related to the adoption of the Tax Code of Ukraine (and the constant adjustment of its rules). Therefore, in modern business conditions, one of the most difficult issues is the taxation of business activities and the reflection in tax accounting of the consequences of various types of business transactions carried out by taxpayers. In the context of constant changes in tax legislation, businesses must closely monitor these changes. Such changes do not allow businesses to effectively implement strategic and tax planning processes.

The role of information support has changed dramatically in today's environment, as new times require new knowledge, skills, and abilities to respond quickly and determine the consequences of any changes in the business environment. Solving tasks to achieve the goals of economic entities and get a positive result depends on timely, operational, reliable, and optimal information.

The agricultural sector is one of the basic in the economy and strategically important for national security. Accordingly, all means of state regulation should contribute to its effective functioning. Taxation, which has undergone significant changes over the last few years, is a particularly significant means of state regulation

for the agricultural sector. As practice shows, the introduction of these changes was ambiguously perceived among agricultural producers, associations, deputies, public figures and led to pessimistic forecasts for the future of the agricultural sector. Taxation of agricultural producers should perform not only fiscal but also regulatory functions, act as a means of state support and stimulation of production, ensure the competitiveness of national agriculture, and the introduction of innovations in production.

For a long time, the taxation of agribusiness was characterized by the presence of a special tax regime and the possibility of choosing taxation, which in the period 1999-2014 was represented by a fixed agricultural tax. After the adoption of the Law of Ukraine "On Amendments to the Tax Code of Ukraine and Certain Legislative Acts of Ukraine on Additional Reform" of 28.12.2014, within the reduction of the tax, this tax was combined (almost unchanged) into a single tax. It became the only tax of group IV.

Also, until 2015, economic entities operating in the agricultural sector (including agriculture, forestry, and fisheries) were on the general taxation system and met the established criteria, were entitled to use a special VAT regime. Its peculiarity was that the amount of tax accrued on the value of supplied agricultural goods/services of own production was not paid to the budget, but remained at the disposal of the producer to reimburse the tax for purchased goods/services from which the tax credit was formed. If there is a balance, it was used for production purposes.

It is well known that the issue of abolishing the special VAT regime was a requirement of the IMF to provide the next tranche. In Ukraine, this initiative was expressed by the Ministry of Finance, which said that the agricultural sector provides too little tax revenue. Instead, the costs of various types of assistance to the agricultural sector reach billions of hryvnias, the lion's share of which is VAT refunds. Most of these funds are received by large agricultural producers who can pay VAT in full. Today, agricultural producers pay taxes under the general system or have the right to choose a simplified system of taxation in the form of a single tax of group IV, and from 01.03.21 some farmers have a reduced VAT rate.

Businesses can only work on one of the two tax systems. Unlike the simplified system, there are no restrictions on the general system by type of activity, number of employees, annual turnover and it is possible to work on a barter basis.

Agricultural producers who choose general taxation are obliged to pay the following tax system: income tax, personal income tax, value-added tax, property tax (land tax), rent for special water use, environmental tax. Taxation of agricultural producers with income tax is carried out on general terms at a rate of 18%. Producers of agricultural products defined in Article 209 of the Tax Code may choose the annual tax (reporting) period, which begins on July 1 of the previous reporting year and ends on June 30 of the current reporting year.

For income tax, enterprises whose main activity is the production of agricultural products include enterprises whose income from the sale of agricultural products of their production for the previous tax (report) year exceeds 50 percent of

total income.

If the producer of agricultural products is an individual, then in the general system of taxation, the main tax is the personal income tax. According to the results of the quarter, agricultural producers summarize revenues and deduct costs for economic activities. The difference that will be obtained is the basis for personal income tax (rate 18%), it also calculates the military tax (rate 1.5%) and the Single Contribution for Compulsory State Social Insurance (rate 22%).

PIT is calculated quarterly, payments for the first, second and third quarters are called an advance, they must be paid after the end of the quarter.

PIT payment for the IV quarter is not made separately. Calculate the net income for the year, calculate PIT from it and deduct from this amount already paid advance payments. Pay the tax after submitting the annual income tax return.

Among the peculiarities of value-added tax on agricultural producers is the tax rate. In particular, in 2021 Law № 1115 [7] introduced a reduction of the VAT rate for farmers from 20% to 14%. The VAT rate of 14% applied to transactions of supply of agricultural products in Ukraine and its import of certain UKT FEA codes, except for imports of goods specified in paragraph 197.18 of the Tax Code of Ukraine (hereinafter - TCU) (paragraph "d" of paragraph 193.1 TCU). Other types of agricultural products will be supplied both on the territory of Ukraine and imported at the general rate of 20%. All agricultural products will be exported at the usual export rate of 0%. The VAT rate of 14% does not apply to the services of agricultural enterprises (Section 2 of the Letter № 5257).

However, on July 1, 2021, the Verkhovna Rada passed Law № 1575 amending the TCU. According to him, the former rate of 20% is returned for some types of agricultural products. These changes are applied from 01.08.2021. According to the official explanations of the authors of the bill № 5425-d, the change in the VAT rate forced the processing industry to raise prices for their products to cover the difference caused by different VAT rates at the expense of their own money. After the return of the 20% rate, other processors remain in the same losing situation - for those products where the rate remained at 14% (Fig. 1).

The official portal of the State Tax Service of Ukraine provides clarifications on the Procedure for filling in the tax invoice for transactions for the supply of certain agricultural goods [8]. In particular, among the features of the tax invoice are the following:

- the taxpayer may indicate in the tax invoice transaction for the supply of certain agricultural products together with other transactions, distinguishing different rates (20%, 7% and/or 0%), or form separate tax invoices;

- in the tabular part of the tax invoice (section "B", column 8) is drawn up for transactions for the supply of individual agricultural products must specify the rate code "14";

- in the tabular part of the tax invoice (section "B", column 3.1) for transactions for the supply of certain agricultural products must indicate at least six characters of the UKT FEA code (group of UKT FEA codes 0104 10, 1204 00, 1206 00, 1212 91);

- in the tax invoice in section "A" the volume of transactions for the supply of

individual agricultural products must be indicated in line VIII, the amount of tax - in line V, the total amount of tax at VAT rates 20, 14, and 7 % - in line II, the total amount of tax for operation - in line I [9].

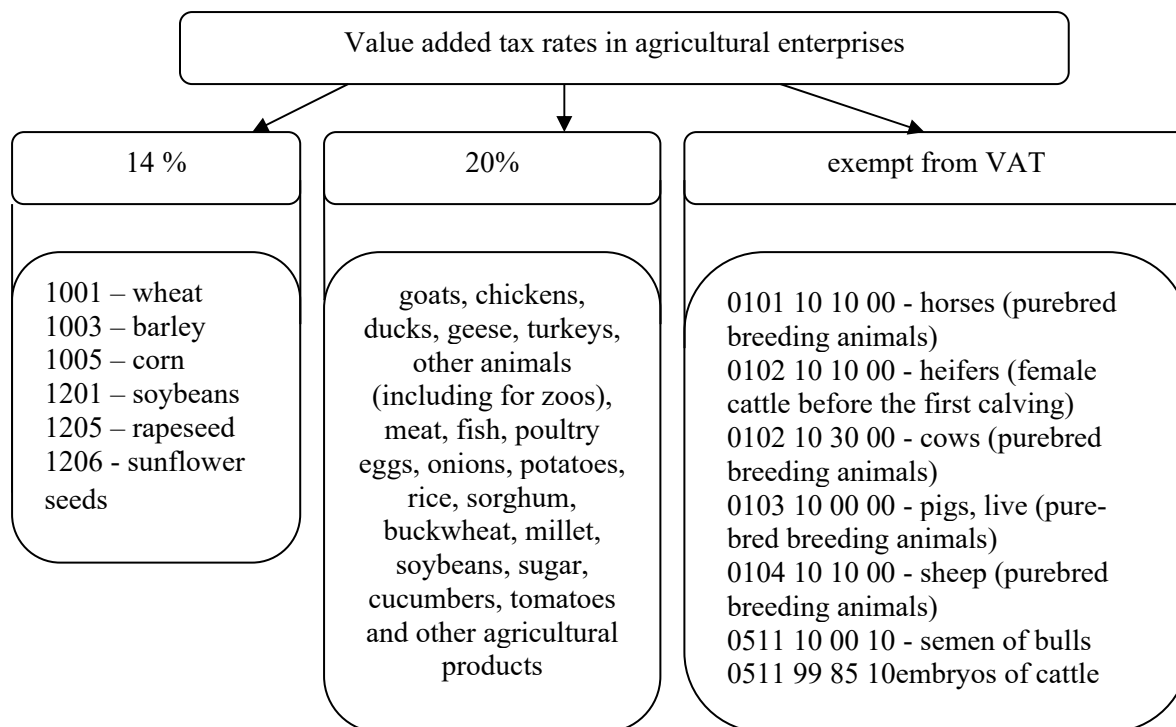


Fig. 1. Value-added tax rates on certain commodity items (UKT FEA) of agricultural products [7]

The application of the above features of the tax invoice for the supply of certain agricultural goods is provided by the State Tax Service for the preparation of the tax invoice in electronic form, including in the electronic office of the taxpayer.

The amount of VAT is reflected on the analytical account "Calculations for value-added tax" to account 641 "Calculations for taxes". When purchasing or manufacturing inventory, a tax credit is formed. The seller who supplies agricultural products accrues VAT liabilities (paragraph 185.1 of the Tax Code). Account 315 "Special accounts in national currency" records funds on the electronic VAT account that the Treasury opens to the VAT payer. When using prepayment, special accounts 643 "Tax liabilities", 644 "Tax credit" are used.

Land tax is part of the land tax and is included in the property tax. This tax is key for agribusiness, as the development of any branch of agriculture is impossible without the use of agricultural land (agricultural or non-agricultural land).

The basis for determining the amount of land tax is the normative monetary valuation of land, which is subject to annual indexation. The central executive body, which implements the state policy in the field of land relations according to the consumer price index for the previous year, annually calculates the indexation coefficient of normative monetary valuation of land, which is indexed normative monetary valuation of agricultural land, as of January 1 of the current year. according to a certain formula. If the consumer price index exceeds 115%, such an index is used with a value of 115 (Article 289 TCU).

Land tax rates are set by local governments, which by December 25 of the year preceding the reporting year, submit to the relevant supervisory authority at the location of the land decision on land tax rates and land tax benefits to legal entities and/or individuals in the prescribed form.

Specific land tax rates may be set within the tax rates for agricultural land, the normative monetary valuation of which has been carried out. Rates are set at not less than 0.3% and not more than 1% of their regulatory monetary value. For agricultural lands located outside settlements, the normative monetary valuation of which has not been carried out - not less than 0.3% and not more than 5% of the normative monetary valuation of a unit of arable land area in the region (Articles 274, 277 TCU). These rates of land tax were set in December 2016.

Agricultural enterprises are payers of rent for the special use of water. Special water use is paid for and is carried out based on the relevant permit (Article 49 of the Water Code). The object of taxation of rent for special water use is the actual amount of water used by water users (paragraph 255.3 of Article 255 of the TCU) primarily to meet the drinking needs of the population, as well as for fisheries (including aquaculture) needs.

The rent for the special use of water for fish farming is calculated based on the actual amount of water needed to replenish water bodies during fish farming and other aquatic living resources (including for replenishment, which is associated with water losses due to filtration and evaporation), and rent rates.

The amount of rent for special water use is calculated based on the actual volumes of water used from water bodies, surface or groundwater, which are set in the special water use permit, water use limits, fee rates and relevant coefficients.

Payers of rent for special water use independently calculate the amount of this fee every quarter from the beginning of the year and make a tax return in the form approved by the order of the Ministry of Finance from 17.08.2015 № 719 ((as amended by the order of the Ministry of Finance of Ukraine from 07.11.2016 № 927) with changes and additions The calculation of the rent for the special use of water is carried out in Annex № 5.

Agricultural enterprises can be payers of environmental tax for emissions of pollutants into the atmosphere by stationary sources of pollution. Thus, if an agricultural enterprise has a fleet, the tax base is carbon dioxide emissions. When calculating the environmental tax, the tax base for carbon dioxide emissions according to the results of the tax (reporting) year is reduced by the number of such emissions in the amount of 500 tons per year. For carbon dioxide emissions of more than 500 tons per year, taxpayers are required to prepare and file tax returns, accrue, and pay tax for the tax (reporting) period in which such excess occurred, in the manner prescribed by the Tax Code of Ukraine. For the environmental tax, the base tax (reporting) period is equal to a calendar quarter. The tax rate on carbon dioxide emissions is UAH 10.00 per 1 ton.

Most often, agricultural producers choose a simplified system of taxation, namely, they are payers of the single tax of group 4. However, it is not enough to be an agricultural enterprise to be a single taxpayer of the 4th group. Thus, business

entities cannot be payers of the single tax of the fourth group:

- in which more than 50 percent of the income received from the sale of agricultural products of own production and products of its processing, is income from the sale of ornamental plants, wild animals and birds, fur products, and fur;

- engaged in the production and/or sale of excisable goods, except grape wine materials (codes in accordance with UKT FEA 2204 29, 2204 30), produced at primary wineries for secondary wineries that use such wine materials for the production of finished products;

- who as of January 1 of the base (reporting) year have a tax debt, except for bad tax debt, which arose due to force majeure (force majeure).

Since 2018, the circle of single taxpayers of group IV has expanded due to the inclusion of natural persons-entrepreneurs who operate exclusively within a farm registered in accordance with the Law of Ukraine "On Farming", and subject to a set of requirements set out in paragraphs. 4 item 291.4 of Art. 291 TCU.

As of 2021, both legal entities and natural persons-entrepreneurs can act as payers of the single tax of the IV group, provided that certain criteria are met.

Thus, the payers of the single tax may be legal entities, regardless of organizational and legal form, in which the share of agricultural production for the previous tax (reporting) year is equal to or exceeds 75%; as well as natural persons - entrepreneurs, namely farms that are registered and operate in accordance with the Law of Ukraine "On Farming", and subject to a set of such requirements:

- carry out exclusively cultivation, fattening of agricultural products, collection, catching, processing of such actually grown or fattened products and its sale;

- carry out economic activities (except for supplies) at the place of tax address;

- do not use the work of employees;

- members of the farm of such an individual are only members of his family;

- the area of agricultural lands and/or lands of the water fund owned and/or used by members of the farm is not less than 2 ha, but not more than 20 ha.

The main feature of the single tax of the fourth group is that it is paid instead of many taxes, which is accompanied by a reduction in tax pressure on entrepreneurs, frees them from the need to keep large tax records and save time. All other taxes and fees are paid by agricultural enterprises by current legislation on a general basis.

The basis of taxation of the single tax of group IV is the normative monetary valuation of 1 ha of agricultural land (arable land, hayfields, pastures, and perennials), and for water fund lands (inland waters, lakes, ponds, reservoirs) - normative monetary valuation of arable land in the region, taking into account indexation, determined as of January 1 of the base tax (reporting) year (in accordance with paragraph 5 of subsection 8 of section XX of the TCU for 2015 and 2017-2023 is equal to 1).

For taxpayers of group IV the size of tax rates from 1 ha this year lands or lands of the water fund depends on the category of lands, their location and is: for arable land, hayfields and pastures - 0.95; for arable land, hayfields, and pastures located in mountainous areas and Polissya territories - 0.57; for perennial plantations (except for perennial plantations located in mountainous areas and in Polissya



territories) - 0.57; for perennial plantations located in mountainous areas and in Polissya territories - 0.19; for water fund lands - 2.43; for this year closed lands - 6.33.

Agricultural enterprises, as legal entities, independently calculate the amount of tax annually as of January 1 and by February 20 of this year submit to the state tax service at the location of the taxpayer and the location of the land tax return for the current year.

The tax is paid quarterly within 30 calendar days following the last calendar day of the tax (reporting) month. The specifics of agricultural production are reflected in the quarterly breakdown of the annual amount of tax: I quarter - 10%; II quarter - 10%; III quarter - 50%; IV quarter - 30%.

If during the tax (reporting) period the taxpayer's area of agricultural lands and/or water fund lands has changed due to various reasons, such taxpayer is obliged to specify the number of tax liabilities and submit within 20 calendar days of the month, following the reporting period, the state tax service at the location of the taxpayer and the location of the land declaration with updated information on the area of land, as well as information on the availability of land and their regulatory monetary value.

If the single taxpayer is a landlord, a provides agricultural land and/or water fund land for rent to another taxpayer - the tenant, then such leased land is taken into account in the landlord's declaration. An exception is a case when the landlord is not a single taxpayer, in which case the leased land area is included in the tenant's tax return.

Agricultural enterprises pay a single tax by transferring the total amount of funds to the appropriate account of the local budget at the location of the land.

If at least one of the requirements for the stay of both a farm and an agricultural enterprise - a legal entity in group IV of single taxpayers does not meet, such an entity may choose group III of single taxpayers and pay income tax. But again, provided that during the calendar year the amount of income does not exceed 1167 times the minimum wage established by law on January 1 of the tax (reporting) year (in 2021 - 7002000,00 UAH). If the requirements of the single tax of groups III and IV are not met, then such entities may choose a common system of taxation.

Particular attention should be paid to the addition of paragraph 298.8 of Art. 298 TCU pp. 298.8.8, according to which re-inclusion in the IV group of single taxpayers may occur no earlier than 2 calendar years after its transition to the application of the single tax rate set for taxpayers of another group or cancellation of its previous registration as a single taxpayer IV group.

Agricultural enterprises keep records of the single tax on sub-account 641 "Calculations for taxes" in the context of the analytical account (sub-account of the third-order) - for example, 6411 "single tax". At the end of the reporting year, the amount of the EP of the 4th group is distributed among the objects of accounting for the consumption of crop products in proportion to the area of land occupied by the respective crops. According to the current Chart of Accounts, all information on the EP of Group IV has accumulated on Account 91 "General expenses". Based on the

fact that the EP of the IV group reflects in the composition of general expenses and the base of distribution is only in the field of pottery, it is written on the basis of the relevant analytical approach. Analytical accounting of the EP of Group IV in the structure of general expenditures, as a rule, is conducted by places of origin and articles of expenditure.

Thus, in the current conditions, in particular, the financial and economic crisis in the country, the taxation of economic entities, including agricultural enterprises, needs to be revised and improved. This is a possible way to solve legal, methodological, organizational, and practical problems. This includes, in particular, making certain changes to the regulations and legal acts governing the main types of taxes, as well as improving the methodological and organizational aspects of their accounting, control procedures, and financial reporting. This will simplify the accounting system of business entities in some way, as well as provide transparency and objectivity for analytical and control support.

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### **3.2. FEATURES OF ACCOUNT RENTAL ACCOUNTING OF BUDGET MANAGERS**

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Legal principles of organizational relations related to the lease of property of state enterprises, institutions and organizations, enterprises, and property relations between landlords and tenants for economic use of state property or property in communal ownership, regulated by Law № 2269 "On lease of state and communal property" dated October 3, 2019 № 157-IX. Also Art. 1 of this Law lists the relations of lease of objects, which are regulated by it, taking into account the features provided by other laws of Ukraine.

The central body of executive power with a special status that implements the state policy in the field of state property lease is the State Property Fund of Ukraine, which is governed by the Law "On the State Property Fund of Ukraine" dated 09.12.2011 № 4106-XI. This law defines the status, principles, legal principles of activity, as well as the main tasks of the Fund. According to paragraph 1 of Article 4 of this law, the main tasks include the implementation of state policy in the field of privatization, lease, use and alienation of state property, as well as in the field of state regulation of property valuation, property rights and professional valuation.

The main purpose of the lease is to accelerate economic growth, attract foreign and domestic investment, strengthen the financial capacity of state or municipal enterprises.

The lease is based on the following principles: legality; openness and transparency; equality and competition; state regulation and control; taking into account the peculiarities of state and communal forms of ownership; protection of economic competition; creating favorable conditions for attracting investment; complete, timely, reliable information about the leased objects and the procedure for their lease; ensuring competitive lease terms and other types of agreements.

The value of the leased object for the purpose of determining the starting rent is

its book value as of the last day of the month preceding the date of determining the starting rent. The balance holder of a potential leased asset is required to revalue such leased asset if:

- the leased object has no book value;
- the residual book value of the leased object is zero;
- the residual book value of the leased object is less than 10 percent of its original book value (book value according to the results of the last revaluation).

The purpose of revaluation of fixed assets is to obtain reliable data on the real value of available assets. In the case of revaluation of an item of property, plant and equipment, all items in the group to which the item belongs are revalued simultaneously. Revaluation of property, plant and equipment of a group whose items have already been revalued should continue to be performed on a regular basis so that their residual value at the annual balance sheet date does not differ materially from its fair value. Low-value non-current tangible assets and library funds are not subject to revaluation if their value is depreciated using the method of 50% (in the first month of use) + 50% (in the month of write-off). The revalued cost and depreciation of an item of property, plant and equipment are determined by multiplying the carrying amount and the amount of depreciation of the item by the revaluation index, which is determined by dividing the fair value of the item being revalued by its residual value. If the residual value of an item of property, plant and equipment is zero, its revalued residual value is determined by adding the fair value of the item at the date of revaluation to its original (or previously revalued) value without changing the amount of depreciation. At the same time, the liquidation value must be determined for the objects that continue to be used.

When revaluation of any item of property, plant and equipment, it is important to know whether previous revaluations (revaluations, write-downs) of the item have been performed before, as this determines the order in which the results of its revaluation are reflected. According to the results of revaluation, the amount of revaluation of the residual value of fixed assets is credited to equity in revaluations, and the amount of revaluation - as part of the costs of the reporting period.

If before the revaluation there was a revaluation of fixed assets, the amount of its revaluation is recognized as income in the amount not exceeding the amount of the previous revaluation, and the amount exceeding the specified revaluation refers to the increase in capital in revaluations of the reporting year.

If the revaluation of the item of property, plant and equipment was previously performed before the revaluation, the amount of its revaluation is credited to the reduction of capital in revaluations, but not more than the previous revaluation, and the excess of the revaluation over the amount of previous revaluations.

The excess of the amount of previous revaluations of fixed assets over the amount of previous revaluations of the residual value of the object annually in the amount proportional to the depreciation, refers to the accumulated financial result of the budget with a simultaneous reduction in capital in revaluations, and disposal of fixed assets - for the entire amount of the excess of the amount of previous revaluations over the amount of previous revaluations of this object.

Methodological principles of formation in accounting and financial reporting of information on lease transactions is determined by National Regulation (S) of Public Sector Accounting 126 "Lease" and the section "Guidelines for accounting of fixed assets of public sector entities".

According to National Regulation (S) of Public Sector Accounting 126, a lease is an agreement under which the lessee acquires the right to use a non-current asset for a fee within the period agreed with the lessor. A lessee is, in our case, a legal entity that acquires the right to temporarily use a non-current asset provided to it by another person for a fee. A lessor is the owner of a non-current asset that is transferred to another person for temporary use for a fee

Lease transactions are divided into financial and operating leases. This classification of leases is based on the extent to which the risks and rewards of ownership of the leased asset are shared between the lessor and the lessee.

A finance lease involves the transfer to the lessee of all risks and rewards incidental to ownership of the leased asset. The lease is considered financial if it has at least one of the following characteristics:

- the lessee acquires ownership of the leased asset after the expiration of the lease;
- the lessee has the ability and intention to purchase the leased asset at a price below its fair value at the acquisition date;
- the lease term is the largest part of the useful life (operation) of the leased object;
- the present value of the minimum lease payments from the beginning of the lease term is equal to or exceeds the fair value of the leased object;
- the leased asset has a special character, which allows only the lessee to use it without the cost of its modernization, modification, equipment;
- the lessee may continue to lease the asset for a fee significantly lower than the market rent;
- the lease may be terminated by the lessee, who reimburses the lessor for his losses from the termination of the lease;
- Gains or losses on changes in the fair value of the leased asset at the end of the lease are attributable to the lessee.

Finance leased assets are recognized in the lessee's assets as liabilities and liabilities at the fair value of the leased property at the inception of the lease or, if less than fair value, at the present value of the minimum lease payments. The difference between the amount of minimum lease payments and the value of the finance lease, which was reflected in the lessee's accounting at the beginning of the finance lease, is considered the lessee's financial expenses and is reflected in the lessee's accounting and reporting only in the amount relating to the reporting period and is distributed on a proportional basis.

Present value is the discounted amount of future payments (less any recoverable amount) that is expected to be required to settle the obligation. The calculation of the present value of the amount of the minimum lease payments is made using the rental interest rate. If the lease agreement does not specify the interest

rate, the lessee applies the interest rate on the lessee's possible loans (for example, the interest rate on possible bank loans) to determine the present value of the minimum lease payments and the distribution of financial expenses.

Minimum lease payments are payments payable by the lessee during the lease term (less the cost of services and taxes payable to the lessor and unforeseen rent) plus the amount of the guaranteed liquidation value (ie the part of the liquidation value guaranteed before payment). by the lessee or a related party after the expiration of the lease term).

In the process of using the object of financial lease by the lessee, the object may be changed both physically and intangibly. In a physical change can occur:

- modernization of the object - improvement of the structure, which increases the productivity of the object being modernized, contributes to the expansion of its technological capabilities to the level of modern technical and technological requirements, achieving resource savings, improving working conditions. It consists in relatively insignificant changes in the design of working mechanisms, machines, installations and other equipment, as well as in relatively insignificant changes in materials and processing methods;

- modification of the object - modernization in order to extend its useful life or increase its production capacity;

- introduction of a more efficient technological process, which will reduce costs;

- completion (superstructure) of the building, which will increase the number of seats, building area, volume and quality of work performed under the conditions of their implementation.

The lessee's costs of improving the leased asset (modernization, modification, completion, equipment, reconstruction, etc.) that increase the future economic benefits originally expected from its use are recorded as capital investments included in the cost of construction. financial lease project. Depreciation of finance leases is carried out in the manner prescribed for similar non-current assets of the lessee, taking into account the period of expected use.

In the lessor's accounting, the leased asset is recognized as the lessee's receivables in the amount of minimum lease payments and unsecured liquidation value, less income from financial activities receivable with the recognition of income from the sale of non-current assets. Simultaneously with the recognition of the lessee's receivables, the residual value of the asset transferred to the finance lease is written off from the balance sheet. Receipts from the lessee are identified by the lessor as income from an exchange transaction and are recognized as repayment of receivables (in the amount of the fair value of the leased asset) and income (in excess of the fair value of the leased asset).

The amount of the lessor's financial income is distributed between the individual reporting periods during the lease term using the interest rate on the balance of the lessee's receivables at the beginning of the reporting period. To this end, when transferring an asset to a finance lease, it is necessary to provide for a special calculation of the receipt of lease payments, which is desirable to add to the

finance lease agreement (for both the lessee and the lessor). Based on the results of such calculation, the amount of the lessor's financial income and the lessee's financial expenses is determined as the basis for their identical reflection in the accounting of both.

Operating leases are leases other than finance leases. This is usually a lease that does not meet any of the above criteria for a finance lease. In most cases, operating leases are short-term and give the lessee only the right to temporarily use the leased property without ownership. Therefore, the assets received under operating lease are reflected by the lessee in the off-balance sheet account 01 "Leased fixed assets and intangible assets" at the value specified in the lease agreement. The lessee's costs for the improvement of the operating lease (modernization, modification, completion, equipment, reconstruction, etc.), leading to increased future economic benefits originally expected from its use, are reflected by the lessee as capital investment in the creation (construction) of other non-current tangible assets.

Depreciation of an operating lease is accrued and recognized by the lessor. Leases under an operating lease are recognized by the lessee as an expense on a straight-line basis over the term of the lease or based on the method of obtaining the economic benefits or service potential associated with the use of the operating lease.

The lessor reflects the assets transferred to the operating lease as own fixed assets, indicating in the analytical accounting of the name of the lessee and the term of the lease. Expenses related to the conclusion of an operating lease (legal services, commissions, etc.), the landlord reflects in the account as current expenses of the reporting period in which they occurred. Leases payable under operating leases are recognized by the lessor as revenue in the relevant reporting period on a straight-line basis over the term of the lease or by reference to the method of obtaining economic benefits or service potential associated with the use of the operating lease and are recognized in the financial statements. reporting as an increase in receivables and income.

If the object of communal property rights is transferred for use on the rights of operational management to a budgetary institution maintained at the expense of the state budget, such fixed assets are accounted for as operating leases. Similarly, fixed assets that are objects of state property and transferred to the rights of operational management of the institution maintained at the expense of the local budget are reflected in the accounting.

### **References**

1. Law of Ukraine "On Lease of State and Municipal Property" of October 3, 2019 № 157-IX (as amended)

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3. National Regulation (Standard) of Accounting in the Public Sector 121 "Fixed Assets", Order of the Ministry of Finance of Ukraine of October 12, 2010 № 1202, version of 28.12.2020

4. National Regulation (Standard) of Accounting in the Public Sector 126 "Rent", Order of the Ministry of Finance of Ukraine of 24.12.2010 No. 1629

## ***SECTION 4. FINANCIAL POLICY AND MECHANISM OF ITS IMPLEMENTATION IN THE SYSTEM OF ENSURING SUSTAINABLE DEVELOPMENT OF AGRIBUSINESS ENTITIES AND RURAL TERRITORIES***

### **4.1. METHODOLOGICAL FUNDAMENTALS AND TOOLS OF INCREASING CASH FLOWS OF AGRICULTURAL ENTERPRISES IN THE CONDITIONS OF MODERN CHALLENGES**

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**Summary.** The creation of adequate mechanisms in the credit management system of agricultural enterprises requires a separate solution to the question of formulating this concept as an object of management, first of all to identify signs of changing stages of the process of strengthening the loss of stability and their consequences. It is also about developing methodological approaches to assessing the state of the object on a scale of stability - instability. In modern conditions, this creates real challenges for both economics and management science, and ultimately economic practice.

Uncertainty of the external environment in previous periods was associated with a certain level of uncertainty about future conditions, to overcome which efforts were made to ensure the expected trends. In the current global economic crisis and extremely poor predictability of its reflections in the future comes a different understanding of uncertainty, namely: as a chaotic environment. That is, the well-known in the economic literature statement of P. Drucker (1985) on the further development of the market as an "era of irregularities" actually went to a higher stage.

These conditions make the processes of managing the creditworthiness of agricultural enterprises dependent not only on the effectiveness of the internal management system, but largely on changes in future foreign economic processes. From such initial preconditions of significant changes in the economic space, the problem of credit management of an agricultural enterprise becomes a priority, the solution of which requires improvement of the existing management mechanism, which aims to ensure balance between the internal system of the agricultural enterprise and its external environment.

In the current conditions, it is extremely difficult to establish the reliability of market counterparties (buyers and customers), and hence such criterion components of creditworthiness as the level of business risk, the ability of the economic entity to increase capital, the level of investment attractiveness. Declining purchasing power of buyers, uncertainty of reliability of counterparties and other crisis-political phenomena affecting all spheres of public life do not allow for sufficiently defined parameters of agricultural enterprises in the foreseeable future.



Accordingly, researchers propose the introduction of an adaptive management system by objectives, arguing that this system still allows financial management to more effectively identify problems and cover their full range related to credit management, ensuring long-term efficiency of available and potential resources.

Sustainability paradigms in one form or another are based on approaches to managerial intervention, the content, nature and objectivity of which are determined on the basis of analysis of the state of the enterprise and the factors of negative external influences. Creditworthiness should objectively be considered as a basic criterion in the management of the economic system of agricultural enterprises. This criterion is becoming increasingly important in the concepts of management, implemented in conditions of instability of economic processes, uncertainty and unpredictability of the economic environment. The loss of creditworthiness of an agricultural enterprise is influenced not only by environmental factors, but also by the lack of an adaptive creditworthiness management mechanism. This requires adjustments to the targets of the efficiency of enterprises, which would direct management decisions to maximize profitability and increase market value. In accordance with these targets, methods of managing the financial and economic resources of the enterprise were developed.

Based on one or another view of the sustainable functioning of the enterprise in the market environment, such management concepts are formulated as the paradigm of strategic management or management model based on a different type of system of balanced scores. They present certain types of tools that can effectively and efficiently manage the actual potential, economic resources and capital in the current conditions. Therefore, the development in practice of an effective mechanism for managing the potential of creditworthiness as part of the overall management system is always recognized as a relevant area of economics.

The difficulty of substantiating the model of the target (functionally defined) credit management system of modern agricultural enterprises is primarily the impossibility of developing a clearly defined strategy aimed at their sustainable development. Therefore, if there are opportunities to plan the activities of the enterprise taking into account the expected changes in the environment of its operation in the future, there are conditions for managing the creditworthiness of the enterprise according to the paradigm of prediction.

In modern economic conditions, the creditworthiness potential of socially significant (large) agricultural enterprises, as well as their operating activities, is becoming the subject of public attention. The social significance of such organizations is also in the fact that they form the infrastructure in the territory of their activities (job creation, filling local budgets, etc.) and through the pricing policy social stabilization of civil society. In the current crisis period, the efficiency indicators of almost all agricultural enterprises (sales volumes, parity of income and expenses, etc.) have significantly deteriorated. The decline over a long period of productive activity has weakened the capacity to build credit capacity.

Organizational and economic principles of credit management of agricultural enterprises should be built on the basis of a defined strategy, which is the main

internal guideline for the formation of parameters of sustainability potential. In the processes of creditworthiness management, the basis for making operational decisions is the monitoring (diagnosis) of changes in this criterion, as well as the identification of negative impact factors in these processes and the development of measures to ensure a given (achievable) level. However, in our opinion, the most problematic issue is to find out the real possibilities of an agricultural enterprise for the formation and implementation in practice of measures aimed at strengthening the potential of financial and economic stability.

The level of creditworthiness of agricultural enterprises has been the subject of diagnosis and monitoring by government institutions in various countries, which has become especially acute during the global pandemic. The allocation of funds from the state budget to subsidize (subsidize) commercial entities in this sector has given rise to numerous discussions by independent public (professional) organizations. The effectiveness of the practical implementation of public-private partnership programs is reflected in the ability to provide the general public with affordable consumer goods and services.

In practice, it is extremely difficult to relate the creditworthiness currently assessed in one way or another to the potential productivity (potential) of the economic resources and capital taken into account. The formation of the creditworthiness potential of agricultural enterprises in any national economy is increasingly dependent not so much on the effectiveness of internal management, but on changes in the external environment. An indicator of the purchasing power of the population is becoming more important than ever, and therefore such a criterion should be taken into account in the valuation models and concepts of credit management of agricultural enterprises.

Thematic studies of building a management system reflect different bases, including functional, situational, systemic and process approaches. When formulating management technologies, the process approach is often popularized, which is also proposed for managing the creditworthiness of agricultural enterprises. It is noted that its practical implementation requires the transformation of traditional functional management into business process management. That is, the focus of management is the priority business processes, which on the basis of the implementation of management decisions of strategic and operational nature provide the conditions for sustainable operation of the enterprise. Based on the study of scientific achievements in the field of creditworthiness, scientists propose "application of system-process approach", which, as justified, ensures balance and coherence of all elements, functions and activities of enterprises aimed at achieving sustainability and development.

We adhere to the position that in the current conditions in the socio-economic environment, the most adequate should be considered situational credit management. First of all, it is noted that the management decision in this approach is based on the emergence of real and obvious problems, rather than planned measures. In addition, this approach in its basic basis involves the decentralization of management functions, which in itself forms the adaptability and flexibility of the organizational

structure of the enterprise, provides a rapid response of business staff to changing conditions.

Uncertainty of the market situation, a number of negative and heterogeneous in nature economic and social factors in the synergetic effect cause the emergence of various and unexpected risks in the activities of modern economic entities. Their neutralization (minimization) to maintain business efficiency is considered in the context of management aspects of ensuring the creditworthiness of the enterprise. An entity's credit management subsystem is present in any management concept.

In order to build a conceptual system for managing the creditworthiness of an agricultural enterprise, it is necessary to evaluate the existing approaches to the interpretation of the essence of such management with the selection of its individual elements.

According to the classical approach creditworthiness management of the enterprise is a set of principles, methods with certain measures and tools that ensure the implementation of management decisions of the management of the enterprise, aimed at maintaining a certain level of financial stability, which creates conditions for financial growth. In the form of profit and capital, financial balance is maintained. In order to achieve an equilibrium state of financial stability, the researcher emphasizes the need to correct the values of financial indicators in two stages: bringing the "problematic" values of financial ratios to the normative level and creating conditions for consolidating the values of creditworthiness indicators in the medium and long term.

Credit management should be equated with a system of cyclical, interrelated actions aimed at determining the factors that affect the value of financial stability and ensure the implementation of management financial decisions. Scientists rightly point out that in today's changing environment, the management of financial and economic processes of the enterprise should be using adaptive approaches to regulation, taking into account the ever-changing factors that affect them, and ensure the regulation of creditworthiness, both in the short and long term. activities of the enterprise.

Theoretically comprehending the concept of credit management of enterprises, S. Ya. Yeletsy proposed the author's approach, highlighting 5 stages that form the algorithm of the process of research and credit management. Among them: definition of directions and significance of separate elements of maintenance of creditworthiness of the enterprise; diagnosis of its actual condition, selection of factors that destabilize the sustainability of the enterprise; assessment of key and final indicators of financially sustainable development; selection of methods, principles, goals and objectives of financially sustainable development of the enterprise. Thus, this logical-structural methodological approach to the study and management of processes that shape the creditworthiness of the enterprise, can be tested on the example of agricultural enterprises.

It is obvious that effective management of the creditworthiness of the enterprise is possible only if the research process clearly defines the object, subject, purpose and objectives of management, which are the supporting structures of further management actions. The disclosure of the essence of the subject and object of the

control system from the standpoint of the control and managed subsystem, respectively, was in the field of view of GB Pogrishchuk, VV Rudenko, who emphasize the close relationship between subject and object management system. On the one hand, the subject of management through predetermined measures, means and tools influences the object of regulation, thus creating conditions for the correction of financial and economic processes and the values of creditworthiness indicators. On the other hand, the subject is dependent on the object, because its control functions and capabilities depend on the latter. The objects of credit management include the factors that determine the development of financial and economic processes of the enterprise, can stimulate or deactivate the stability of its economic system. While the subjects of management - the relevant established services of the enterprise (departments of financial and economic planning and management, audit of financial activities, etc.) or individual specialists, whose job descriptions include the obligation to conduct financial and economic analysis of economic activity and making appropriate management decisions.

The main purpose of credit management of the enterprise, according to the traditional approach, is to achieve a state of financial and economic equilibrium, in which the impact of temporary destabilizing factors of the changing environment of the enterprise will go to zero. Achieving this goal is possible in solving tasks, among which an important role is played by: early diagnosis of pre-crisis financial and economic condition of the enterprise and taking the necessary preventive measures to slow down financial and economic distortions; accumulation of financial resources in order to maintain the level of solvency and further eliminate the causes that reduce it; minimization of negative consequences. Realization of the last task is possible through maintenance of qualitative structural transformations of financial and economic activity of the agricultural enterprise taking into account its long-term prospect.

Achieving the goal of managing financial and economic creditworthiness is possible in compliance with certain principles of management. Revealing the features of regulating the processes of formation, distribution and use of financial resources of agricultural enterprises, distinguish such principles of creditworthiness management as: integration, diversity, complexity, dynamism and focus. In this scientific work, the authors do not pay attention to the disclosure of the essence of each of them, and this does not allow to draw comprehensive conclusions and actualizes further research on this issue.

In particular, analyzing the theoretical aspects of credit management of the enterprise from the standpoint of a systematic approach, we can identify the principles of: integration (inclusion in the management process of monitoring the external and internal factors of creditworthiness, which creates conditions for taking into account), balanced results, multivariate key factors of financial stability, diversity of funding sources and capital structure (credit management should ensure the continuous operation of the enterprise with maximizing economic benefits through changes in combinations of capital structure by sources of funding and funding). In functional terms, based on the above principles, three functions are defined that must

be performed by the credit management system of the enterprise: operational, coordination and control. The essence of the operational function is to compare the amount of cash inflows and the level of their expenditure as a result of financial and economic activities, while coordination (transformation) - determines the need and redistributes financial resources according to the current financial condition of the enterprise, while maintaining optimal capital structure by sources of formation.

The most comprehensive and systematic principles of management of sustainable development of the enterprise in his study reveals S. Yeletsky, who on the basis of a thorough theoretical understanding identifies universal, system-wide, specific and managerial principles. Among the universal principles of credit management, the author focuses on the principle of determinism, the essence of which is to determine, ie identify and constantly analyze the changes that occur in the changing environment of the entity. From the list of system-wide principles, the greatest attention is paid to the principle of feedback, which is realized through the ability of the management system of the enterprise to respond to changes in external and internal environment and influence it through the implementation of certain measures, tools and instruments. The specific principles of the author's method include the principles of irreversibility of enterprise development and a set of dynamic equilibrium. The scientist emphasizes that "compliance with the first principle will provide the company with timely diagnosis of bifurcation points, which partially eliminates the destructive nature of crisis processes and increase the degree of adaptation of the system, while the implementation of the second - can increase the stability of the whole system. development.

Among the principles of enterprise development management, the author singles out the principle of multilevel management, the essence of which is to form a hierarchical multilevel structure of business process management, which, if effective, should accelerate the process of identifying problem areas of creditworthiness and appropriate measures to adapt and minimize their negative consequences. .

Enterprise creditworthiness management must be addressed at three levels: strategic, innovative and operational. This classification, on the one hand, is associated with the time criterion and the formation of a system of measures aimed at establishing creditworthiness in the short, medium and long term. Thus, at the operational level, credit management measures should ensure the continuity of the enterprise, while at the strategic level - the competitiveness of the enterprise and the growth of its market value.

The results of the management influence of the management subsystem on the management in the context of creditworthiness and the disclosure of its potential largely depend on the list of specific measures, which are determined by the type of financial and economic policy and current financial stability. In the scientific literature it is customary to distinguish between conservative, moderate and aggressive financial and economic policies. It is obvious that in the conditions of financial and economic balance the enterprise does not need active actions and radical measures directed on regulation of financial processes. Therefore, it can operate on the basis of conservative financial and economic policy: to conduct

business transactions with different levels of financial and economic risk, which create opportunities for innovation, modernization of existing technologies, development of new activities.

Aggressive financial policy provides for the following measures: strict regulation of procurement, when 10-30% of working capital needs is met by equity and long-term borrowed capital, 70-90% of working capital financing is provided by short-term debt capital, working capital financing is low cost of equity.

Thus, given the common goal of any business, which is manifested through the desire to maximize profits with minimal time and resources, we believe that in general the above methodological approaches to credit management can be used to study and manage factor variables of financial stability at all stages of development of the financial and economic system of the agricultural enterprise. However, in the case of each business entity, it is still necessary to adjust some measures and means of influence depending on the state and degree of potential creditworthiness of the enterprise, as well as the specifics of economic activity, which is formed within a particular format. As the considered approaches to definition of separate elements of system of management of creditworthiness of the agricultural enterprises are not yet fully developed, it actualizes need of further development of a management technique in this sphere.

Traditionally, micro-level management is understood as a certain policy and a set of measures implemented by the company's management in relation to personnel to ensure the managed operation and development of the business. In fact, it is through the impact on staff that all changes and shifts in the activities of the enterprise are determined, which determine the volume and structure of reproduction processes.

It is established that the credit management system of agricultural enterprises is a set of elements, the interaction of which ensures the preservation of the trajectory of economic growth and sustainable financial condition, realization of financial and economic interests of economic entities, realization of economic potential of agricultural enterprises. The basic elements of this system are objects and subjects of management, processes of financial and economic activity, management mechanisms and the corresponding policy which maintenance is expressed through a set of the purposes, functions and principles of carrying out.

Note that control objects are formed in two groups:

- 1) assets and resources of the agricultural enterprise (management of capital and financial resources affects the financial condition - the basis of creditworthiness; attraction and efficient use of other resources (personnel, logistics and trade and technological resources, inventories, intangible assets, investment and innovation resources, information, etc.) determines the economic efficiency of management, and thus forms an economic subsystem of sustainability potential);

- 2) areas of financial and technological activities of the enterprise (proper regulation of such functional areas as technological processes and their infrastructure, financing, investment, business interface development, innovation, on the one hand, determines the specifics of general and specific aspects of economic policy, and, with

another - affects the state of the functional components of the economic system of the enterprise).

The influence of management entities on management facilities is carried out with the use of appropriate tools (management technologies; administrative and organizational means; economic incentives; regulatory and methodological support; information and analytical support). At the same time, the basic management functions should be sufficiently and fully implemented, as evidenced by the achievement of the goals of managing the creditworthiness potential of an agricultural enterprise. Among them are the realization of financial and economic interests of the subjects of the management system, ensuring the economic efficiency of functioning and maintaining a stable financial condition. It should be added that effective management of the creditworthiness potential of agricultural enterprises, as well as other systemic financial and economic categories, can be ensured only if the key principles of management are strictly adhered to.

It should be emphasized that objectively there are both specifics in the organization of credit potential management directly of agricultural enterprises, which build their competitive development strategy, and management features associated with the passage of a particular stage of development of such entities.

As a result of generalization of theoretical and methodological principles in the field of management of complex systemic financial and economic categories, in particular - potential, there are grounds to talk about such stages of development as formation, building, realization of potential, maintenance of leading market positions. The conceptual relevance of this, among other things, is that no company is able to simultaneously cover the entire market, which operate efficiently and have a stable rational structure of equity, while maintaining high liquidity and solvency. After all, the creation of each of these facilities is a long process associated with the accumulation of the necessary financial, material and labor resources, which in today's market conditions are difficult to access and require significant costs to attract them.

Therefore, it is important to understand the strategic stages of development, strengthening and effective use of the creditworthiness of agricultural enterprises, which, in turn, determines the features of economic strategy, as well as directions of change of management vectors of financial and economic condition of business entities. In particular, at the stage of capacity building the key is: accumulation of sufficient financial resources; building - increasing the number of financially and economically self-sufficient facilities; realization of potential - strengthening of factor competitive advantages; holding positions - further increase of creditworthiness on the basis of economic diversification of business and financial diversification of capital placement instruments. It is natural that at each of the stages it is more important to use certain mechanisms (in accordance with their connection with the most appropriate management tools) to manage the creditworthiness of agricultural enterprises.

Arguments in favor of this are the direction and nature of their use. For example, at the stage of capacity building the key attention should be focused on

legal, organizational and methodological aspects of management, it is especially important to institutionalize the so-called standard of financial management as a separate sector of quality management of business processes. Within the framework of standard procedures, it is appropriate to prescribe the principles and methods of managing the attraction of financial resources, as well as the application of financial and economic sanctions to the subjects of the management system that will violate them.

At the stage of formation of the creditworthiness potential of agricultural enterprises, the emphasis is shifted towards budgeting, planning and forecasting of financial and economic management and business development trends. The mechanisms used here include the management of market and economic processes, the growth of fixed assets in the form of production and storage space, machinery and technology. At the stage of realization of the creditworthiness potential of agricultural enterprises, the applied mechanisms and tools are shifted towards the aspects of competition, competition and competitiveness with the active use of modern management, especially digital and information, technologies for such purposes.

At the stage of maintaining market positions, when the growth rate of financial and economic efficiency of business slows down, but, on the other hand, accumulates financial assets, which are less and less rationally placed and used with lower efficiency, actualized investment, innovation and financial mechanisms. associated with the initiation and development (including means of external investment) of new businesses in other areas. Accordingly, the instruments of two groups are becoming more popular here: risk management and control, insurance, financial asset management, dividends and financial transfers.

Growing globalization challenges, continuous transformation processes and increased parameters of uncertainty in the functioning of the national economy require substantiation of effective innovative approaches to the organization of credit management of agricultural enterprises as a strategic resource base to ensure their dynamic competitiveness and economic security. The expediency of solving this problem is actualized in the conditions of limited sources of financial and economic liquidity, intensification of competition in markets for access to resources, aggravation of stagnant socio-economic processes and at the same time constant need to form adequate preventive tools to protect economic interests of domestic agricultural enterprises.

At the same time, building an effective approach to credit management of agricultural enterprises provides for the feasibility of substantiating the relevant organizational and economic mechanism, which, on the one hand, is strategically focused on identifying unused resource reserves to increase and increase the efficiency of existing creditworthiness of these enterprises. structures to minimize the destabilizing impact of risks and threats on the parameters of business processes of the agricultural enterprise.

The expediency of developing applied approaches to the formation of organizational and economic mechanism for managing the creditworthiness of an agricultural enterprise is also determined in view of the following:



1) the management mechanism is a comprehensive tool, the use of which will ensure compliance with the principles of systemicity, consistency and balance in the implementation of targeted management influences in the segment of ensuring the creditworthiness of agricultural enterprises;

2) the problem of establishing effective credit management of the enterprise is multicomponent, which requires consideration of all functional components of its support;

3) formalization of a specialized organizational and economic mechanism for managing the creditworthiness of agricultural enterprises will guarantee a strategic focus on taking into account the sectoral characteristics of the operation;

4) the establishment of an effective structure for managing the creditworthiness of an agricultural enterprise requires consideration of both internal and external determinants of the development of business processes of the enterprise;

5) the relentless development of scientific and technological progress and the introduction of innovative technologies in the practice of management of agricultural enterprises determine the feasibility of forming flexible adaptive approaches to managing the creditworthiness of enterprises;

6) organizational and economic mechanism for managing the creditworthiness of agricultural enterprises is the institutional and instrumental basis for improving the efficiency of business processes of these enterprises, strengthening their competitive position in the market and the implementation of expanded reproduction. The main tasks of the organizational and economic mechanism of managing the efficient operation of agricultural enterprises should be: forming a system of performance indicators, maximizing the amount of profit and ensuring its effective use, management of income and expenses, tax payments, resources and risks, use of warehouse and production space of agricultural enterprises.

Thus, the organizational and economic mechanism of credit management of agricultural enterprises should be positioned as an institutional and managerial apparatus of rational use of resource resources of agricultural enterprises in order to maximize the parameters of their efficiency, sustainable development and strengthen competitive positions in the market in destabilizing risk. The implementation of measures of purposeful managerial influence of the organizational and economic mechanism of credit management of an agricultural enterprise is implemented through the implementation of the relevant functions of this mechanism, including:

- resource-reproducing - (consists in the formation of reliable sources of support for resource development of business processes and their self-renewal during the implementation of a closed cycle of commodity-money turnover);

- organizational and mobilization - (provides the initiation of a structural impetus to increase the level of involvement of the existing resource base in the management processes of the agricultural enterprise and maximize the efficiency of its production business processes);

- structural-distributive - (focused on the construction of rationally balanced material flows of agricultural enterprises in the face of intensifying competition in the market for access to the target resource base);

- socio-economic - (provides for improving the physical and economic accessibility of goods and materials for the population on the basis of reducing the level of social injustice in the distribution of available goods in society and improving the socio-psychological needs of direct agricultural workers);

- information and communication - (aimed at reducing the level of information uncertainty in the development and adoption of management decisions by strengthening the communication interaction between organizational and structural units of the agricultural enterprise, the establishment of information flows between them);

- conciliation and coordination (consists in overcoming contradictions and reducing the level of conflict environment among the key actors in the management of creditworthiness of agricultural enterprises on the basis of minimizing the risk of conflicts of interest between the centers of management decisions);

- preventive and protective (builds adequate organizational and management tools for timely response to growing challenges and threats to development, guaranteeing the protection of commercial interests and defending competitive positions in the market in the context of ensuring the appropriate level of economic security of agricultural enterprises).

Resource-functional capacity of the organizational and economic mechanism of credit management of agricultural enterprises, on the one hand, is provided by establishing effective approaches to the realization of this potential in the economic activity of enterprises on the basis of effective use of available resource base, and on the other - generated by multiplier effect support for advanced playback processes. Thus, the target organizational and economic mechanism is characterized by the progressive and dynamic nature of continuous development, renewal and modernization of strategic business processes of the agricultural enterprise through the implementation of tools to increase the resource base of the potential of socio-economic reproduction.

It is obvious that the formation of organizational and economic mechanism for managing the creditworthiness of agricultural enterprises is a complex process that requires a strict sequence of stages of certain actions (Fig. 1). At the same time, the management of the processes of formation and realization of the potential of an agricultural enterprise, organized within the organizational and economic component of the aggregate mechanism, takes place using various dimensions of its effect, synergy and aggregate value.

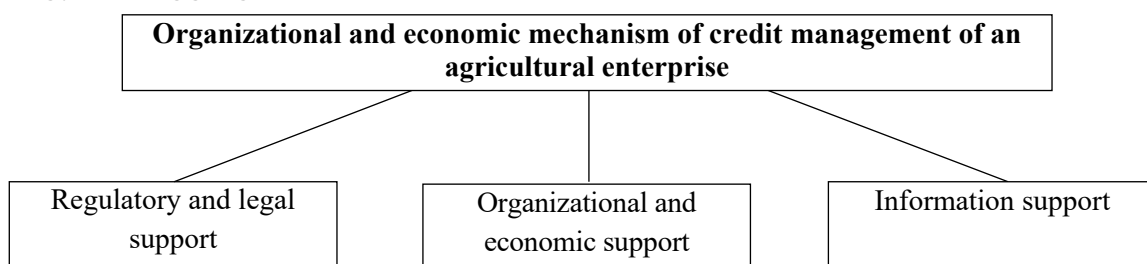


Fig. 1. Components of the organizational and economic mechanism of credit management of an agricultural enterprise

Undoubtedly, the level of creditworthiness is influenced not only by factors of internal but also external business environment, which must be taken into account in management processes. For agricultural enterprises, the external aspect is largely interrelated with the stability of the socio-economic environment, ie the effectiveness of state macroeconomic regulation of a market economy in many cases can be decisive in comparison with the effectiveness of internal management.

In turn, ensuring the effectiveness of the existing organizational and economic mechanism for managing the creditworthiness of agricultural enterprises requires compliance with the focus on achieving a set of strategic, tactical and operational objectives of this mechanism, the structuring of which is presented in Fig. 2.

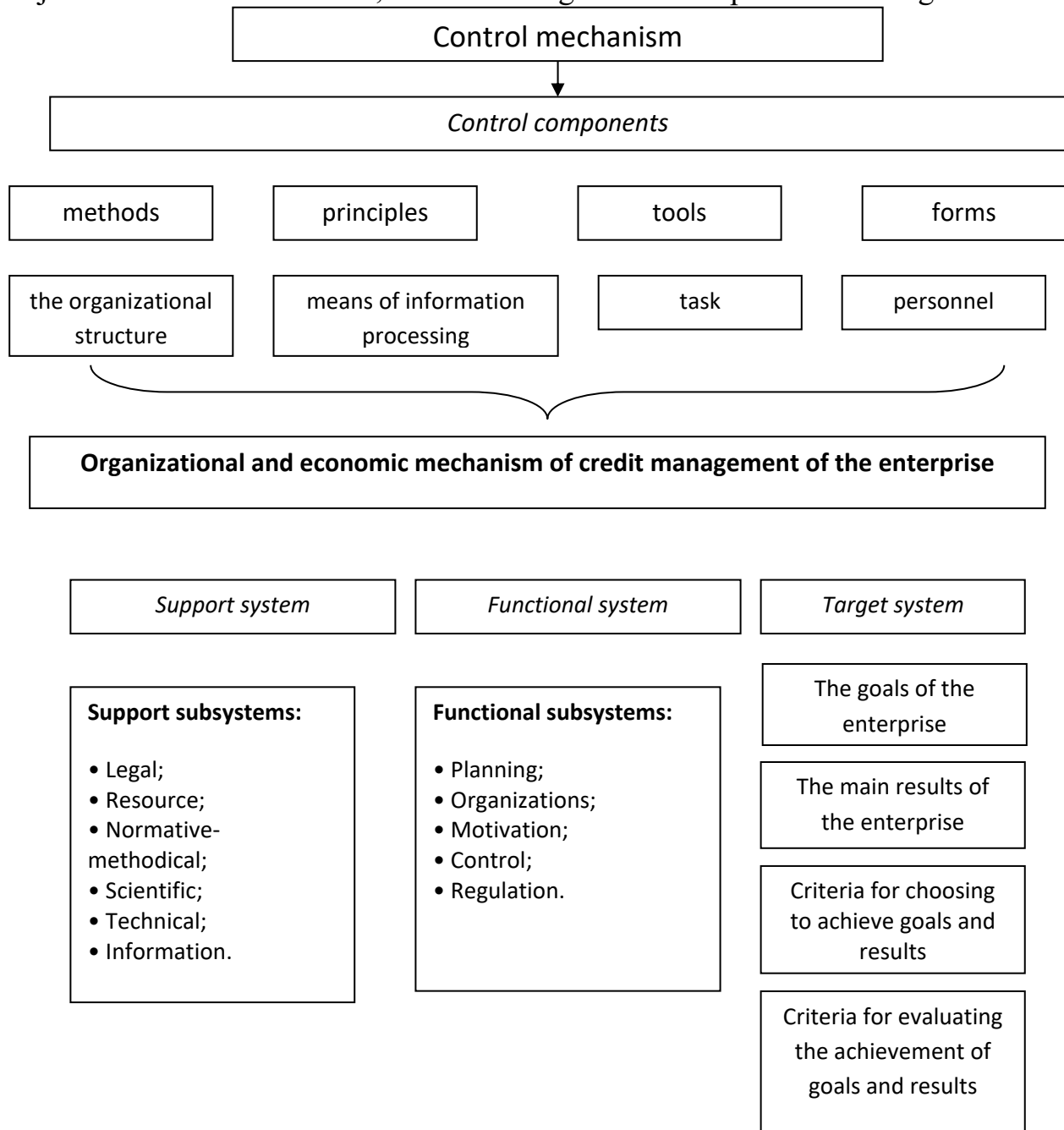


Figure 2. Components of the organizational and economic mechanism for managing the creditworthiness of an agricultural enterprise

The functioning of the organizational and economic mechanism of credit management should be aimed at organizing targeted influence on the development of economic business processes of agricultural enterprises within four basic components, including: financial condition and sustainability, resource provision, resource efficiency, building and developing financial and economic potential.

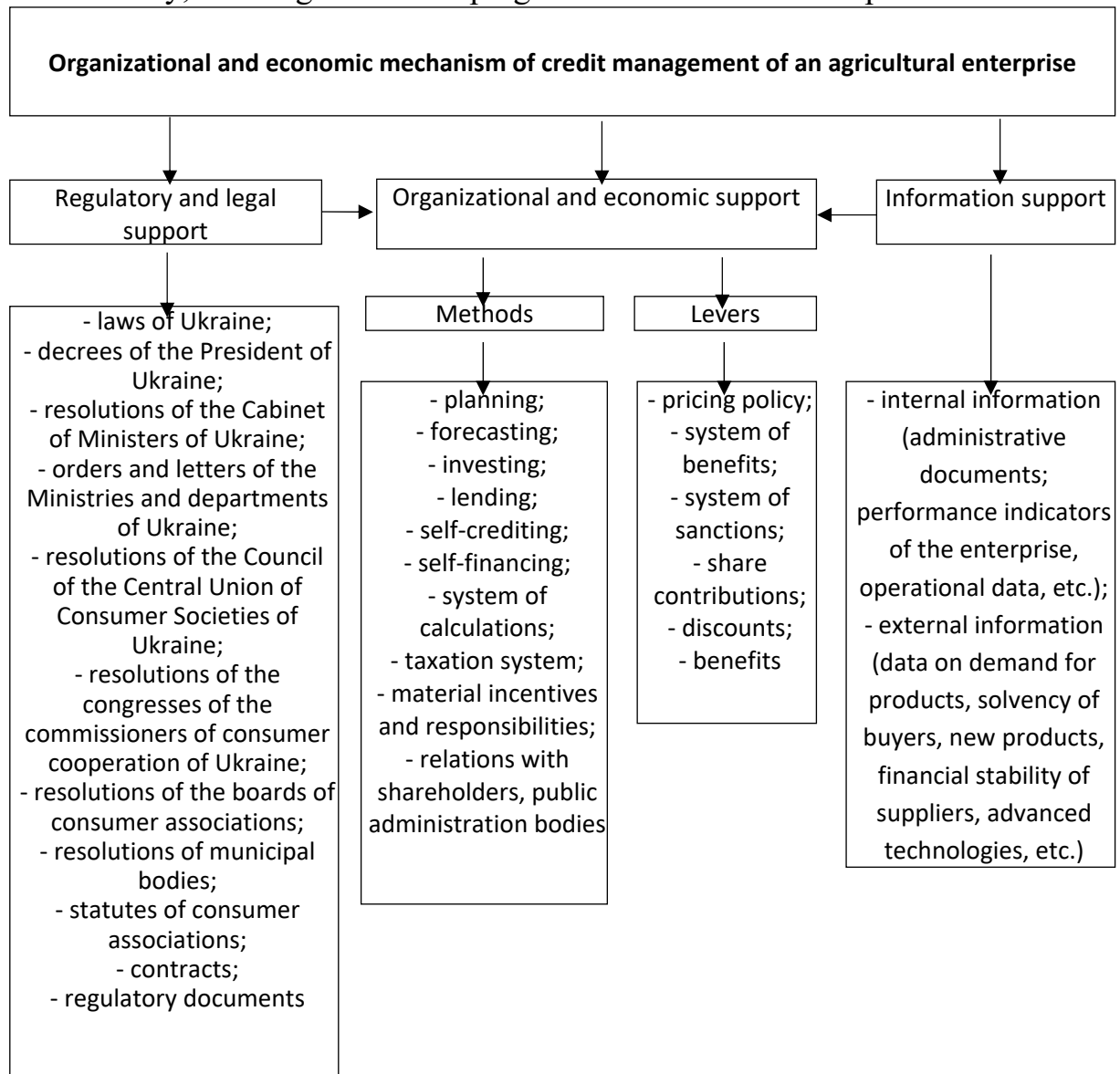


Fig. 3. The structure of the organizational and economic mechanism for managing the creditworthiness of agricultural enterprises

In this regard, the designed organizational and economic mechanism should ensure compliance with the strategic focus on the following:

1) formation of effective tools and means of financial resources management, formation of preventive levers to guarantee financial stability in the face of growing market risks, organization of monitoring system of parameters of change of financial and economic indicators of agricultural enterprise in dynamics, minimization of risks of financial and economic security and protection of commercial interests; ensuring the appropriate level of financial solvency and liquidity of enterprises;

2) diversification of sources of additional financial, economic and economic resources of the enterprise, automation of processes of optimal distribution of

resource capacities between strategic economic business portfolios, balancing the structure of equity and debt capital of agricultural enterprises, identification of unused resource sources and reserves to support the development of structural and functional processes of the agricultural enterprise;

3) intensification of innovation and scientific and technological progress in strategic business processes of agricultural enterprises, management of business activity indicators, optimization of financial resources, capital and human labor in the process of commodity-money exchange, implementation of innovative management technologies for coordination of strategic areas of economic activity ;

4) establishment of effective mechanisms of reinvestment of the received profit, organization of continuous process of updating of material and technical capacities of the agricultural enterprise, formation of processes of the expanded reproduction and sustainable development of the agricultural enterprise.

Ensuring the resource and functional capacity of the organizational and economic mechanism for managing the creditworthiness of an agricultural enterprise requires the coordination of its strategic objectives with the basic functions of management (Table 1).

Table 1

Matrix of coordination of priority tasks of the organizational and economic mechanism of management of creditworthiness of the agricultural enterprise on basic functions of management

	Priority tasks of the organizational and economic mechanism
Analysis	Evaluating the effectiveness of the use of available resource potential; diagnostics of system interaction of the enterprise with contractors; marketing policy analysis; formation of controlling of the system of support of acceptance of administrative decisions; conducting market research.
Planning	Compilation of optimistic and pessimistic scenarios for the development of business processes of an agricultural enterprise; long-term budgeting and planning of financial and economic activities; forecasting the parameters of the destabilizing impact of potential risks and threats of the enterprise; modeling of basic indicators of efficiency of use of potential of creditworthiness of the enterprise.
Organization	Formation of hardware management structures to increase the creditworthiness of the enterprise; balanced distribution of powers of duties and responsibilities between management entities; identification of clear sources of financial support for the resource-functional capacity of the target mechanism; coordination of creditworthiness components
Motivation	Balancing tangible and intangible tools to stimulate labor; rating the effectiveness of the results of organizational and managerial structures; strengthening a healthy competitive environment between the centers of responsibility of the target mechanism; structuring of formal and informal institutions
Control	Establishment of an objective subsystem for monitoring the creditworthiness indicators of an agricultural enterprise within their maximum allowable values; introduction of an effective system of penalties for structural deviations; defining clear boundaries of responsibility for the final results of management

The formation of organizational and economic mechanism for managing the creditworthiness of agricultural enterprises provides for the feasibility of developing its project structure on the basis of a comprehensive scientifically sound approach. In view of this, the aggregated structural components of the target organizational and economic mechanism are proposed to include the following: institutional and management unit, resource-based subsystem, technical and technological apparatus, structural and functional superstructure.

The institutional and managerial block of the organizational and economic mechanism of credit management of an agricultural enterprise is the basic structural component of the implementation of managerial influence on the processes of forming the parameters of ensuring this creditworthiness in the face of growing challenges and threats. Designing a resource-capable institutional and management unit requires comprehensive implementation of the following measures:

- 1) formation of consistent regulatory and legal support for regulating business processes of agricultural enterprises on the basis of balancing the impact of informal and formal institutional environment on management decision-making processes, building the institutional basis for managing financial and economic resources (fundamental principles of financial policy, debt management, principles organization of business relations with borrowers and creditors), substantiation of a balanced model of distribution of basic functional powers, duties and responsibilities between organizational and structural units and employees of the enterprise, coordination of strategic, tactical and operational goals of agricultural enterprises, formation of market-oriented policy to maximize customer needs, guaranteeing institutional support for consumer protection;

- 2) delimitation of powers of organizational and managerial structures in the field of credit management of an agricultural enterprise by coordinating management and coordination influences between the basic structural units of the enterprise in the segment of target responsibility (directorate, financial and economic service, accounting department, marketing and sales department, etc. ), formalization of the main center of responsibility for the processes of ensuring the appropriate level of creditworthiness, implementation of principles and principles of crisis management taking into account the impact of potential threats of significant changes in market conditions in case of force majeure, creation of anti-crisis unit which would be aimed at counteracting the financial and economic threats to the economy and preventing the risks of bankruptcy of the agricultural enterprise;

- 3) development of a scientifically sound methodological basis for assessing the effectiveness of the use of credit potential through the formation of a comprehensive system of financial and economic indicators that can be quantified in terms of functional components (financial condition and stability, resource provision, asset efficiency, capacity building) sectoral specifics of agricultural development, substantiation of maximum allowable deviations of actual economic results from the reference values of indicators, implementation of the practice of periodic reporting on the effectiveness of financial and economic potential, as well as verification of the information base for management decisions in determining unused reserves for credit

enterprises.

Awareness of the shortcomings in relation to the financial and economic conditions of commercial activity of an agricultural enterprise allows to eliminate the most significant objective obstacles, as well as to stimulate the implementation of favorable development factors and improve its system and structural characteristics. Therefore, it is important when studying the conditions and factors of development of an agricultural enterprise to take into account not only the directions of their influence, but also their full value in relation to the implementation of all functions of the credit management process. It is important that the analysis of the set of macroeconomic trends were made conclusions about the entire system of external influence on the financial and economic condition of the agricultural enterprise.

The complexity of the task of forming resources to strengthen the level of creditworthiness of agricultural enterprises necessitates a comprehensive systematic study of its resource components and the definition of basic blocks of areas in which it is appropriate to implement a set of measures for further formation and further effective use of potential.

In our opinion, the formation of resource support for the creditworthiness of an agricultural enterprise is a system consisting of blocks of creditworthiness components and their comprehensive provision with all types of resources necessary for the effective operation of an agricultural enterprise and its strategic development.

The directions of formation of resource provision of credit management of the agricultural enterprise are presented in fig. 4. Thus, the basic block, which forms the material basis for the implementation of operational and financial and economic activities of an agricultural enterprise, is the block of the main production activity. The resources necessary for its operation are primarily material resources and stocks.

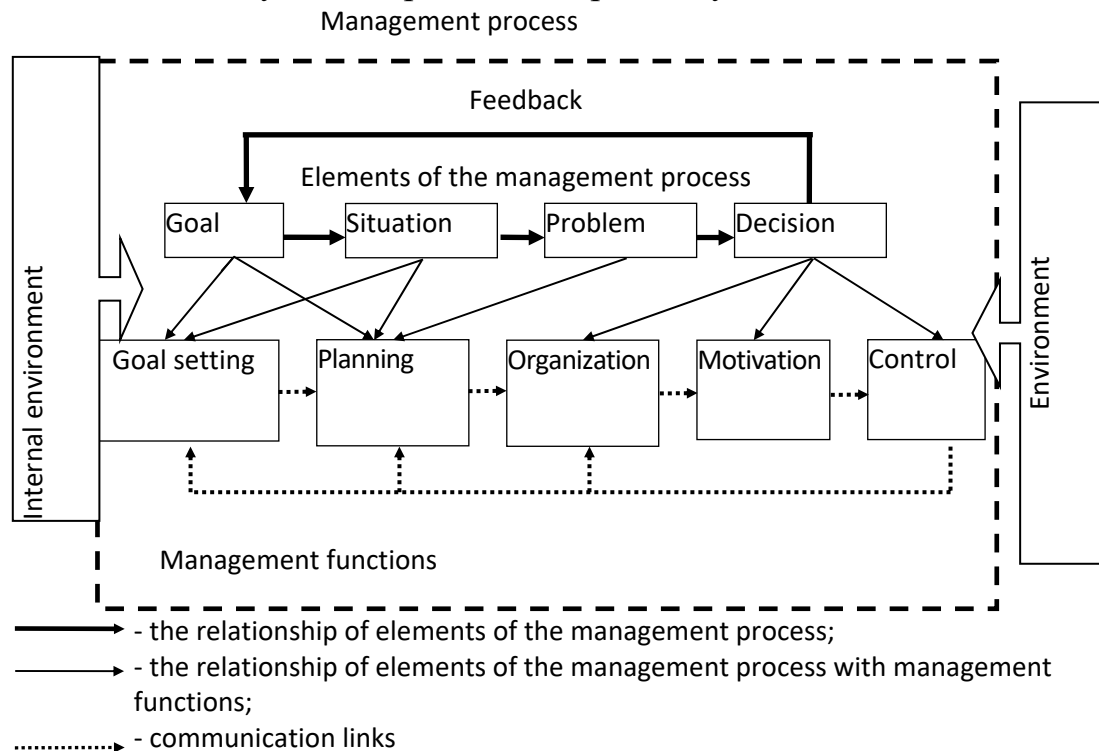


Fig. 4. The relationship of the elements of the process of managing the formation of resource provision of the creditworthiness of the agricultural enterprise

The potential of the main agricultural activity of the enterprise is formed due to the creation, involvement and further effective use of fixed assets: buildings, premises, machinery and equipment; vehicles; availability of the necessary storage facilities and communications that provide lighting, heating, ventilation and other necessary for the functioning of agricultural production facilities.

Therefore, sufficient security and rational and efficient use of material, commodity, personnel and technical and technological resources allows to optimize the amount of financial resources needed to attract them and increase the economic efficiency of their use, which will increase the creditworthiness of agricultural enterprises.

A separate area of formation of resource provision for credit management of an agricultural enterprise is the block of logistics and warehousing. Modern agricultural production is based on the development of logistics systems and management of logistics flows both within the technological process through the management of the range and stocks, and in interaction with the external environment and participation in supply chains. Therefore, an increasingly important aspect of effective financial and economic activities is the application of modern logistics concepts. This allows you to reduce the amount of working capital required for the operation of the enterprise and the formation of its stocks, and at the same time increase the range of products, without increasing the cost of purchasing and forming stocks. Thus, modern logistics and warehousing provides a qualitatively new level to manage production processes, logistics of internal movement and sale of products using modern concepts, methods, tools and technologies that provide a high level of planning, synchronization, coordination and, thus, optimize the use of enterprise resources, which has a positive effect on resource security and economic efficiency as key components of the creditworthiness of the agricultural enterprise.

In modern conditions, logistics tools for improvement, optimization of inventory management, warehousing processes, digitalization of accounting and maintenance are actively carried out. The organization and management of logistics processes, equipment and programs require human resources that have experience and skills to work with relevant technologies. The urgency of organizing and conducting training, staff training and mentoring programs is growing. The policy in this direction will promote the development of intellectual and personnel support of the agricultural enterprise - a key resource in the management system of strengthening creditworthiness.

An important resource aspect in ensuring the strengthening of the creditworthiness of the agricultural enterprise is the establishment of a control system with the use of modern technical means, information and electronic communications that provide both control over the work of staff and the safety of their material resources.

The block of economic efficiency at formation of resource maintenance of creditworthiness of the agricultural enterprise is based on necessity of perfection of processes of management of material, financial, personnel, technical and technological resources. Therefore, the implemented tools and means in this direction



provide for the orientation of the agricultural enterprise on the intensive path of development, ensuring high dynamics of product sales and inventory turnover, growth of partial and integrated efficiency. Therefore, to implement the tasks of this unit, research is needed to identify reserves for strengthening the creditworthiness and development of agricultural enterprises as a result of the introduction of new innovative technologies, improving the organization of technological business processes in the system of increasing the operational efficiency of agricultural enterprises. It should be noted that the general indicator of financial and economic efficiency in business is traditionally considered to be the ratio of profit to total investment in production. Therefore, the increase in creditworthiness is directly related to the growth of sales and profits of the enterprise. Achieving this result is possible with the introduction of modern methods of enterprise management and efficient use of its resources.

Thus, planning the implementation and implementation of measures aimed at increasing the financial and economic efficiency of the enterprise requires improvement of management at all levels, implementation of modern methods, management tools and development of modern communications and interaction between structural units of the entity, which allows to unify, standardize processes and prevents errors in work caused by subjective factors. This makes it possible to optimize processes, reduce the impact of the human factor on efficiency, accelerate production and sales processes, increase their efficiency. At the same time, optimization of resources provides their savings, as it minimizes unnecessary additional functions, operations, allows you to free up resources and improve their redistribution with more efficient use in other areas of business.

It should be noted that the most important area of resource management of credit management of an agricultural enterprise is the financial management unit.

Financial resources are accumulated by the enterprise to form the necessary assets for its operation, cover costs, attract all funds and reserves. They are intended to cover the costs of goods and services provided by suppliers, fulfillment of obligations to the state and creditors, remuneration, the implementation of costs for the formation of capital and fixed assets, the establishment of a system of promotion and promotion of goods, covering other costs.

It should be concluded that the financial resources of the agricultural enterprise, on the one hand, are an element of the system of resource provision of business. Therefore, their effective use ensures the growth of financial and economic efficiency of the enterprise as one of the leading components of creditworthiness. On the other hand, the rational distribution of funds directly determines the capital structure of an agricultural enterprise. And this is a direct way to form the necessary financial condition of the business entity. Therefore, the attraction and efficient use of financial resources has a synergistic effect in the context of increasing the effectiveness of the policy of increasing the creditworthiness of agricultural enterprises.

Sufficient amounts and efficient use of funds ensures a stable financial condition of the enterprise, its financial stability, solvency, liquidity. That is why the

effective use and search for ways to increase their own financial resources is a direct way to strengthen the creditworthiness of the enterprise.

A sufficiently generalizing and systemic sphere of credit management of an agricultural enterprise is to ensure its competitiveness. The key resources that form a high level of competitiveness are intangible resources: trademarks and trademarks, goodwill, access rights to resources, property and non-property rights, assets, etc. In general, the competitiveness of an agricultural enterprise is formed as a complex of breadth and quality of the range of products, information and activity in the market of trademarks and so on. The growth of the level of competitiveness of the enterprise depends on the quality of products, the provision of a range of additional related services, such as qualified consulting, delivery, information services. However, a necessary prerequisite for this is the intellectual and human resources of the enterprise, as well as full and high-quality innovation. Intellectual and human resources of an agricultural enterprise are, first of all, high-quality selection of management staff, high-level and competent specialists, provision of analysts, scientific and technical personnel capable of creating and implementing technological innovations related to market response, generation and implementation of new ideas and implementation of innovative projects.

In addition, in the context of strategic preconditions for strengthening the competitiveness of business entities, the task of forming such an element of resource management of the potential of financial and economic stability of a commercial enterprise as its investment and innovation support is relevant. In turn, the improvement of investment and innovation potential of financial and economic stability of retail trade enterprises provides for the availability of qualified personnel, especially management staff, information and telecommunications technology specialists, scientific and technical specialists capable of producing innovative ideas, implementing new innovative solutions, activating new methods of promotion and sale of goods. However, activity in the development and implementation of innovations, scale, system of innovative changes, improvements depend on the ability of trade enterprises to attract investment resources with a long payback period and focus on strengthening the financial and economic stability of the trade enterprise.

In fact, investment resources are attracted given the prospects of strategic business development. In this aspect, it becomes important to determine the basics and elements of the development strategy of a commercial enterprise, taking into account the possibilities of its resources, available reserves and external market factors, the dynamics of solvency characteristics of consumer demand, competition trends.

Therefore, the urgent task of designing the potential of financial and economic stability in the context of strategic development of trade enterprises is to study the opportunities, sustainability of resource potential and prospects for its adaptation using modern methods of planning and economic forecasting. In this aspect, it is important to use the intellectual and human resources of the enterprise, specialists who are able to carry out relevant research, ensure the strategy and implementation of strategic development plans.

In our opinion, the result of the strategy to strengthen the potential of financial and economic stability of retail trade enterprises for the sale of construction and household goods should be: expansion of the network of trade facilities, access to new market segments; expanding the range of goods and services; coverage of new consumer groups; dissemination of trademark information; introduction of new formats of trade, including electronic; digitization of service processes, etc. Accordingly, strategic development is implemented on the basis of investment and innovation projects, modernization of technical and technological base of trade, digitalization of internal and external trade and technological processes, implementation of monitoring and control systems for forming and realizing the potential of financial and economic stability.

Let's pay attention to the fact that the block of information and communication support is a strategically important aspect in the formation of resource management of the potential of financial and economic stability of retail trade enterprises. In modern conditions, information and communication resources acquire special importance and significance, because they are the main means of both obtaining and analyzing the information needed to meet all the needs of the business development management system. The main resources of this block are sites and online stores, online platforms, where the positioning of goods of the enterprise. With the development of modern technologies, the Internet provides new opportunities for dissemination of information to cover new market segments in different areas, without the physical location of stores and material costs. Such promotion and sale of goods became especially relevant during quarantine restrictions, which significantly limited the purchasing power of the population in purchasing in retail chains and increased the volume of e-commerce. The intensification of e-commerce has in fact become an essential condition for further effective development and stable sales for most of the leading retail chains. However, it should be noted that despite the fact that the formation and promotion of such information resources requires significant investments, this area of communication with customers is becoming more powerful and promising and this trend is growing. In addition, the use of modern electronic trading tools in the trading halls of enterprises and settlements through electronic terminals, discount programs through electronic customer cards, promotion of goods with individual discounts to customers, the introduction of accumulative discount programs, electronic online notification of customers goods, promotions, delivery orders and information about its implementation. The use of this type of tools makes it possible to strengthen the market position of retail companies specializing in the sale of construction products by gaining new competitive advantages and establishing interaction with customers using cloud and other advanced digital technologies.

At the same time, the creation, implementation, integration, promotion and further maintenance of information and communication resources, online products and the full range of software products needed to ensure the operational activities of a trading company requires the involvement and active use of intellectual and human resources. An important component for ensuring this direction of strengthening the potential of financial and economic stability of trade enterprises are software products

necessary for the development of information communications, simplification of settlement and cash services and general planning of operational and strategic activities of trade enterprises.

We would like to add that the formation and use of information and communication resources, the introduction of modern digital products and technologies has a significant impact on all other areas of resource provision of retail enterprises for the sale of construction and household goods and is currently the most promising way to strengthen financial and economic stability. trading company.

Let us point out that the relevance of the formation and effective use of certain components of the resource provision of retail enterprises is directly determined by the passage of the enterprise at a particular stage of development of the potential of its financial and economic stability. In particular, the initial stage is associated with the formation of such potential, when there is the formation of technical, technological and material base, the creation of inventories of the enterprise, the gradual increase of financial assets.

Along with the tendency to strengthen the competitive position of the enterprise in the market, the potential of its financial and economic stability is developing and expanding, the technical and technological base of trade is improving, sales of goods are increasing. However, in the future the dynamics of growth stops, although this period becomes the most productive and profitable for the company, because the investments of previous periods have already been returned by that time, and the level of profitability is high and stable. However, as a rule, at this stage the so-called "development trap" develops, when the total costs of financial and economic activities increase due to the difficulty of managing significant resources and business assets, growing needs for renewal of fixed assets and trade technologies, efficient use internal released financial resources as a result of money laundering and their accumulation in warehouses in the form of less liquid inventories.

Thus, gradually the potential for financial and economic stability of the trading company approaches the period of its decline, which is natural. There is a crisis of lack of resources needed to restore the processes of enterprise development, including trade and technology.

In our opinion, shifting the emphasis towards attracting and effective use of innovation and technological resources on the basis of systemic strategic actions aimed at strengthening the financial and economic stability of the trade enterprise, creates the necessary economic foundations to reject the decline in activity, strengthen the financial and economic potential of the enterprise. ensuring its further expanded growth through the transition to a new stage of its trade and economic activity and the development of a network of retail outlets specializing in the sale of construction and household goods.

## 4.2. FINANCIAL MANAGEMENT OF NON-CURRENT ASSETS OF THE ENTERPRISE: THEORETICAL FUNDAMENTALS AND DIRECTIONS OF IMPROVING ITS EFFICIENCY

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**Summary.** The implementation of economic and financial activities by the enterprise is possible if it has various types of assets. Modern conditions of enterprise management put forward increased requirements for the management and financing of assets. This is due to the fact that the competitiveness of the enterprise, tactical and strategic prospects for its development depend on the efficient use of assets. In conditions of constant lack of financial resources, bankruptcy and liquidation of a large number of enterprises, the problem of more rational and effective application of the enterprise assets and finding directions for improving the efficiency of this process is quite acute.

**Keywords:** non-current assets, enterprise, management, assessment, risks, optimization, provision

The presence of significant crisis trends in the domestic economy, increasing competition and variability of environmental factors encourage the need to find an additional benefit for the company, which will allow a sustainable and efficient existence of the business entity. The key competitive advantage is the production potential of the enterprise, which is an array of opportunities to ensure the most likely output of products with available production resources. Also, an important component of the potential of the production enterprise are non-current assets. Directly from the availability and effectiveness of the use of non-current assets depend on such key indicators of the production and economic enterprise as volumes of production and sales, profitability and so on. It should be noted that in the current situation, one of the key problems in the field of management of non-current assets, is their unsatisfactory condition in terms of efficient operation. Thus, the interpretation of the theoretical and methodological bases of management, financing of non-current assets occupies an important place in the system of scientific research. The place of non-current assets of the enterprise can't be overestimated, because they generate a production and technical and technological basis for all economic processes, create a reliable level of competitiveness of the enterprise. The problem of managing non-current assets, and the means of their financing have always occupied a significant place in the works of well-known foreign and domestic scientists. Researches of scientific works, as well as the practice of economic activity proves insufficient disclosure of extremely important issues related to the formation of a policy of effective non-current financing assets, including the specifics of the agricultural sector. The key characteristics of the financial management of non-current assets of the enterprise, as well as the search for ways to improve it, were investigated by

representatives of foreign and domestic economic science. Significant contribution to the study of this issue was made by the following scientists: Atamas G.P, Bogdanyuk O.V, Bradul O.M, Brovko L.I, Gorodyanska L.V, Klimova O.S, Mazurkevich I.O, Oliynyk O.V, Romanenko M.A, Semenov A.G, Podderogin A. and others.

So, the key issues of comprehensive financial management of non-current assets of the enterprise, as well as finding directions for its improvement in today's realities are extremely relevant and require further scientific research and justifications.

The modern functioning of domestic enterprises is explained by extremely difficult conditions, caused not only by the political situation in the country, which led to the instability of the national currency and a decrease in the purchasing power of the consumer, as well as the simultaneous expansion of foreign producers who are gaining an increasing share of the national market.

Sheremet O.O draws attention to the fact that: “Under the influence of the aforementioned factors, competition in the market increases when ensuring stability is transformed into the survival of domestic enterprises. An important guarantee of success today is not just to maximize profits, but to maintain stability in the financial, investment and economic activities of the enterprise. Provision of the production process with non-current assets in the optimal amount and effective management are necessary conditions for stabilization and normal functioning. However, for effective management of non-current assets, you must first clearly define the essential characteristics of this economic category” [38].

Golov S.F notes: “In foreign practice, the concept of non-current assets is defined differently. In Switzerland, non-current assets in the balance sheet asset are combined into one group - fixed assets; in Russia - current assets, which include intangible assets, fixed assets and profitable investments in tangible assets, in Germany - fixed capital and financial assets; in Estonia - fixed assets (long-term financial investments, tangible fixed and intangible assets); in Egypt - fixed (fixed assets), moral (intangible assets) and resource capital (natural resources)” [10].

There is no generally accepted interpretation of the content of the category of non-current assets. This can be explained by the presence of a large number of approaches to the definition of this category, indicating the evolution of views in economic theory. Despite many opinions, in determining the nature of non-current assets, scientists, according to their beliefs, usually fall into two groups. One group believes that non-current assets are the property value of the enterprise, the other group - that they are tangible and intangible resources. However, summarizing the statements of researchers, we can say that intangible assets are assets which are reliably expressed in their value, used by the company for a long time (more than one year) and which are expected to be useful in the future.

Thus, on the basis of the study of literature sources we can identify the main characteristics of non-current assets of the enterprise Figure 1.

It is also worth noting that only some scientists such as Dyba V.M and Saymon V.S emphasize that “In the process of useful long-term use in production and economic activities, non-current assets transfer their value to the value of

manufactured products” [14].

We believe that the accrual process is interrelated with the process of holding and applying non-current assets, so the emphasis on translating the cost is mandatory. In addition, we consider it necessary to supplement the list of objects of cost transfer – products of manufactured cost – also at the cost of services of provided goods etc.

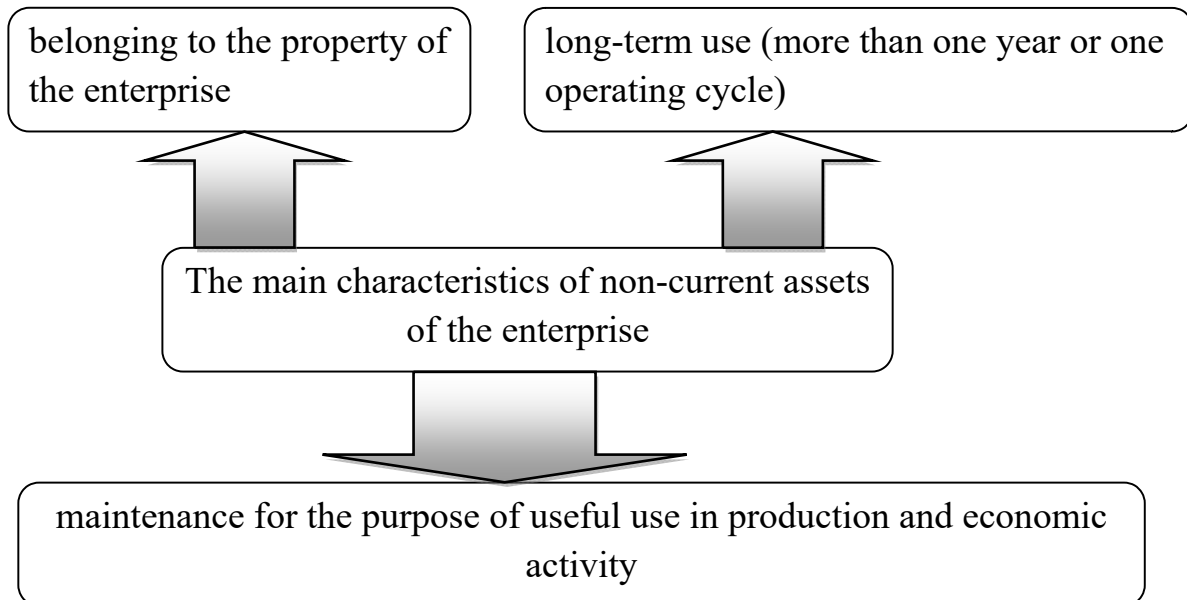


Fig. 1 The main characteristics of non-current assets of the enterprise

Domestic regulatory sources also interpret the essence of certain categories of economic, as well as non-current assets, the branching of which is represented in Figure 2.

Summarizing the interpretation of the essence of non-current economic assets presented in domestic, regulatory and legal sources, it is appropriate to emphasize that non-current assets should be understood as assets used by the enterprise in its management for a certain period of time (more than one year). and after application of which the company will receive economic benefits in future periods; and their value can be reliably determined.

It should be noted that in accounting the non-current assets include:

- fixed assets;
- other non-current tangible assets;
- intangible assets;
- long-term financial investments;
- long-term receivables;
- deferred tax assets;
- goodwill.

According to P(C)BO 7 “Fixed assets”: “fixed assets include tangible assets which the company holds for use in the production process, the expected useful life (operation) of which is more than one year (or operating cycle, if it is longer than a year)” [25].

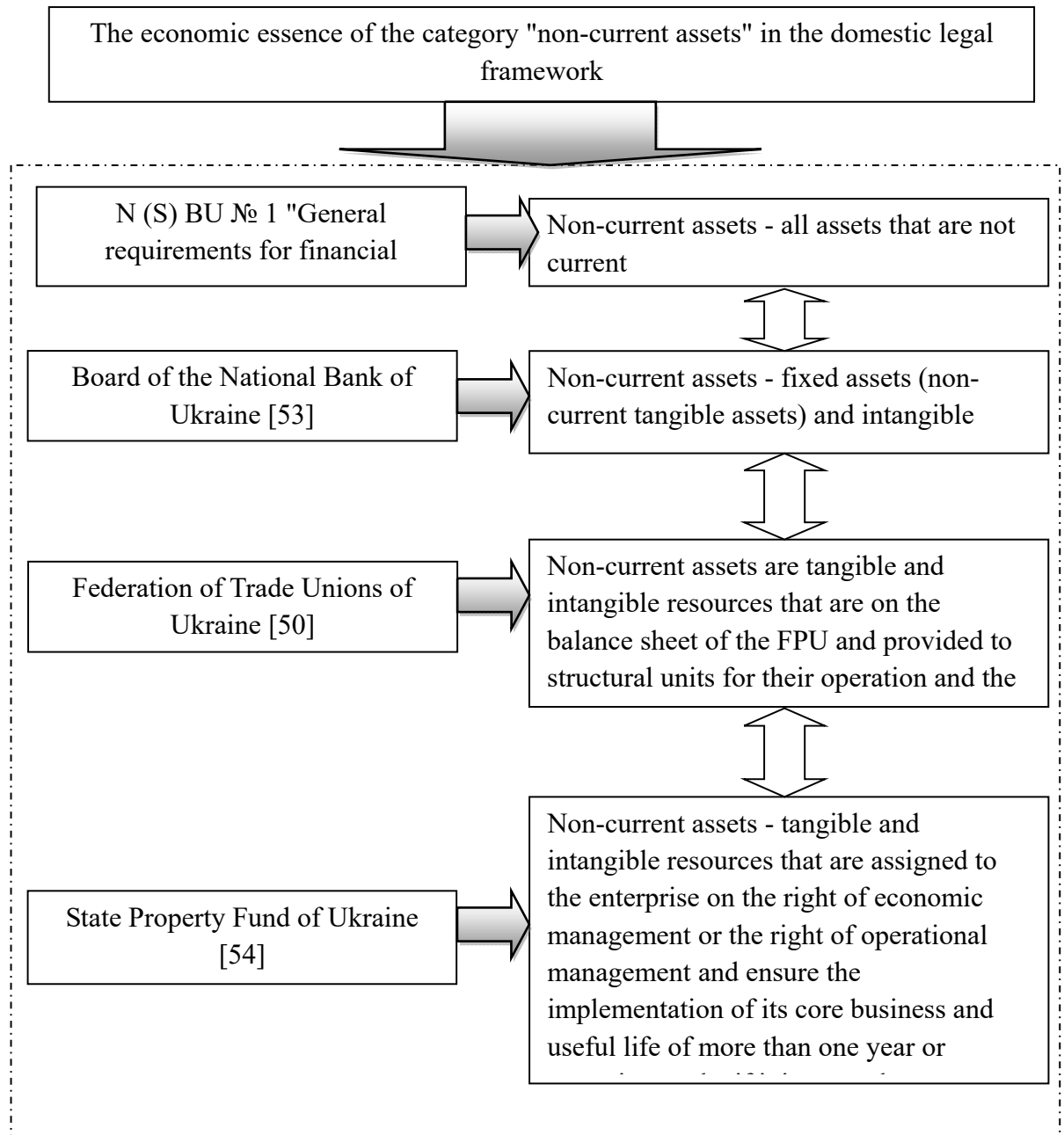


Fig. 2. The economic essence of the category «non-current assets» in the domestic legal framework.

P(C)BO 8 indicates that “Such tangible assets may be buildings, structures, transmitting devices, machinery and equipment, vehicles, tools, Device’s appliances, inventory, working and productive livestock, perennial plantings and other fixed assets. Other non-current tangible assets include such tangible assets as library funds, low-value non-current assets, temporary (untitled) buildings, natural resources, inventory containers, rental items, etc. An intangible asset is a long-term investment in the acquisition of industrial and intellectual property, as well as other similar property rights, which are recognized as the object of ownership of a particular enterprise and bring income in a particular period of time. Industrial property objects include the right to invention, industrial designs, trademarks and service marks” [26].



According to Bogdanyuk O.V: “Intangible assets are the most important components of enterprises, they can act as a guarantor of their presence, competitiveness, which will ensure a constant profitability of leading companies and enterprises. On the one hand, intangible factors are increasingly used in all fields of activity (capable of enacting the mechanism of innovative development), and on the other - still find their theoretical understanding by scientists and legal design by legislators. Currently, the situation in the field of intangible asset management in enterprises remains imperfect” [6].

Homyak R.L considers that “It is primarily due to the following problems in Ukraine:

1) accounting legislation narrows the composition of intangible assets, in particular, including the costs of creating many intangible assets at the expense of the reporting period; the method of accounting for some intellectual property is completely absent;

2) simultaneously with the existence of intangible assets, which in the economic activity of the enterprise are either owned or licensed (as loans), the methodological approach to the reflection of intangible assets in the reporting is the same, which leads to an increase in property value (from the cost approach) and does not provide an objective assessment for those users who cannot request additional information;

3) quite often the accounting value of intangible assets is much lower than the market value, which leads to a decrease in the property status of the enterprise, because in accounting, as a rule, is used a cost approach;

4) unique intangible assets are often not included in the balance sheet, for example, goodwill is not included in the balance sheet of the enterprise until the act of purchase and sale of the enterprise” [35].

In practice, non-current assets include property values of all types with a useful life of more than one year and a value of more than 15 minimum tax-free incomes.

It should be emphasized that fixed assets are the most significant part of non-current assets that are held by the company for use in the production process or the supply of goods, services, works, leased to others, or in order to implement the administrative and socio-cultural, functions, the estimated useful life of which is more than one year.

Sheremet O.O notes that: “Do not belong to fixed assets:

- items with a service life of less than one year, regardless of their value;
- special tools and special devices of enterprises of serial and mass production of certain products or for the individual production regardless of their cost;
- special clothing, special footwear, as well as bedding, regardless of their cost and service life;
- uniforms intended for delivery to employees of the enterprise, regardless of cost and service life.

The fixed assets of the enterprise include:

Fixed production assets - part of fixed assets that participates in the production process for a long time, while maintaining its natural shape. The cost of fixed

production assets is transferred to the product gradually, in parts, as you use. The restoration of these funds is carried out through capital investments” [38].

Buryak P. Yu. emphasizes that “fixed assets, taking into an account of their production purpose are divided into the following groups:

A. Buildings and structures. These include - houses of main, auxiliary, service shops, depots, garages of industrial enterprises, design bureaus, offices, lifting and open mountain mining, oil and gas cracks, chimneys and water towers on separate foundations, roads for all types of transport inside enterprises, dams, canals.

B. Transmitting devices. These include - water distribution devices, power transmission and communication facilities, sewage facilities, gas pipelines.

C. Machinery and equipment. These include - working machines and equipment, measuring and regulating devices, laboratory equipment, computers, vehicles.

D. Production and household equipment. These include - mechanized and hand tools of all kinds: cutting, pressing, percussion, as well as all sorts of devices, various items of economic and production nature.

E. Other fixed assets. Non-productive fixed assets- residential buildings and other objects of socio-cultural and household services, which are not used in economic activities and are on the balance sheet of the enterprise” [33].

Unlike fixed assets, non-productive fixed assets do not participate in the production process and do not transfer their value to the manufactured product. Recovery is realized at the expense of the profit which remains at the disposal of the enterprise.

Podolska V.O and Yarish O.V determine: “The structure of fixed assets - is the ratio of their individual groups. The company is interested in the optimal increase in the share of the active part of the means of production. The structure of fixed assets is influenced by:

- production and material-technical features of the industry;
- forms of social organization of production;
- forms of reproduction of fixed assets;
- level of automation and mechanization;
- climate and geographical conditions of accommodation” [24].

The value of non-current assets of the enterprise depends on the number of financial resources that it owns. The structure of coverage of assets by sources of formation directly affects the financial condition of the enterprise. Optimally formed, non-current assets due to a certain structure of financial resources allow the company to work constantly, maintain a sufficient level of solvency, and also have a certain reserve of funds for rapid response to unforeseen situations, when suddenly there is a need to pay their debts.

Sheremet O.O notes that “Sources of formation of assets of the enterprise are financial resources, which can be defined as a set of funds that the company was able to concentrate at a certain time to carry out its statutory activity by investing these funds in the assets of the enterprise to ensure expanded reproduction and financial performance obligations. The main criteria for the effectiveness of asset formation

are the financial stability and liquidity of the enterprise. Financial stability is a state of financial resources in which the company, freely maneuvering funds, is able to use them effectively to ensure a continuous process of production and trade, as well as - the cost of its expansion and renewal” [38].

In turn, Davidenko N.M emphasizes that: “The presence of the company's own capital is compliance with the minimum condition of financial stability. There are four types of financial stability:

- 1) absolute stability, to ensure stocks, the own working capital is enough.
- 2) The solvency of the enterprise is guaranteed; normal stability to secure stocks, in addition to own working capital, attract long-term loans and borrowings.
- 3) The solvency of the enterprise is guaranteed; unstable financial conditions to secure stocks, in addition to working capital and long-term loans and borrowings, short-term loans and borrowings are attracted.
- 4) The solvency of the enterprise is violated, but it can be restored; financial crisis - to ensure stocks there are not enough sources of their formation. The company is facing bankruptcy.

Liquidity of the enterprise - is its ability to convert financial or tangible assets into cash, in order to timely fulfill the obligations” [13].

Indicators of the state and effectiveness of the use of fixed assets should be generated in three groups, which characterize:

- 1) providing funds to fixed enterprises;
- 2) the state of fixed assets;
- 3) Effective application of fixed assets.

Indicators that describe the provision of the enterprise with fixed assets are:

- capital intensity;
- capital adequacy,
- the ratio of the value of real fixed assets in the property of the enterprise.

Capital intensity is the inverse of the return on assets. This indicator makes it possible to determine the value of fixed assets per hryvnia of manufactured products and describes the provision of the enterprise with fixed assets. Under normal conditions, the capital efficiency should increase, and the capital intensity should decrease.

The provision of the enterprise with fixed assets is determined by the level of labor capital. The latter is calculated as the value ratio of the fixed assets to the number of employees.

According to Korneva N.O: “The Factor of the real value of fixed production assets in the property of the enterprise is defined as the ratio of the value of fixed production assets (less the amount of their depreciation) to the value of the property of the enterprise. If the ratio of the real value of fixed production assets in the property of the enterprise reaches a critical mark (0.2 - 0.3), the real production potential of the enterprise will be low and it is urgent to seek funds to remedy the situation” [17].

The state of the fixed production assets is explained through the following ratios:

- depreciation of fixed assets;
- suitability;
- updates;
- disposal (increase) of fixed assets.

The depreciation ratio explains the share of the value of fixed assets, which is written off against production costs in previous periods. The depreciation ratio is interpreted as the ratio of the amount of depreciation of fixed assets to the book value of fixed assets.

$$K_3 = \frac{Z_o}{\Phi_K}, \quad (1)$$

where  $K_3$  - depreciation rate of fixed assets;

$Z_o$ - the amount of depreciation of fixed assets;

$\Phi_K$  - book value of fixed assets.

The ratio of suitability shows what part of the fixed assets is suitable for operation in the course of economic activity.

Renewal and disposal rates are calculated by the formulas:

$$K_o = \frac{\Phi_y}{\Phi_K}; \quad (2)$$

$$K_B = \frac{\Phi_B}{\Phi_K}; \quad (3)$$

where  $K_o$  -the rate of renewal of fixed assets;

$\Phi_y$ - the cost of fixed assets for the reporting period;

$K_B$  - disposal rate of fixed assets;

$\Phi_B$  - of property, plant and equipment for the reporting period. The value of output of fixed assets for the reporting period.

According to Mnykh E.V: “The ratio of renewal of fixed assets characterizes the intensity of commissioning of new fixed assets. It shows the share of fixed assets entered for a certain period in the total value of fixed assets at the end of the reporting period. The disposal ratio shows the intensity of disposal of fixed assets, that is the degree of disposal of fixed assets that are either obsolete or worn out and unfit for further use. A positive situation in the enterprise activity is when the value of fixed assets put into operation, exceeds the value of disposed fixed assets. To do this, calculate the growth rate of fixed assets” [19].

$$K_p = \frac{\Phi_y - \Phi_B}{\Phi_K}; \quad (4)$$

Indicators that describe the efficiency of the use of fixed assets: return on assets, profitability of fixed assets, profit per hryvnia of fixed assets.

The most complete indicator, which describes the effectiveness of the use of fixed assets, is the return on assets.

$$\Phi_B = \frac{B_{\pi}}{\Phi_K}; \quad (5)$$

where  $\Phi_B$  - return on fixed assets;

$B_{\pi}$  - the cost of products produced during the reporting period;

$\Phi_K$  - the value of the carrying amount of fixed assets at the end of the reporting period.

An indicator of the relative effectiveness of the use of fixed assets is profitability. This indicator is calculated by the formula:

$$P_{\phi} = \frac{\Pi_{\phi}}{\Phi_{\kappa}}; \quad (6)$$

An indicator of the absolute effectiveness of the use of fixed assets is the amount of profit per hryvnia of fixed assets.

An indicator of the effectiveness of the use of fixed assets is still an indicator of the weight of the specific active part of fixed assets in their total amount.

According to Agres O.G: “Non-current assets are an important element for the functioning of any enterprise. Condition, as well as rational and efficient use in the future affect the final results of economic activity of enterprises” [1].

Let's analyze in more detail the sources of formation of non-current assets of the enterprise.

There are own and involved sources of formation of non-current assets. Own sources of formation include:

- authorized capital;
- additional capital;
- depreciation deductions;
- net profit of the enterprise.

The authorized capital of the enterprise is the initial amount of funds invested by the founders (owners) in the joint venture for the purpose of the organization, as well as the right to conduct business is assigned to them.

Momot T.V considers that: “Additional capital - displays promotion in the value of non-current assets. Additional capital is essentially part of the equity of the enterprise and it includes the amount of fixed assets for the valuation of capital construction and other tangible assets of the organization with a useful life of more than 12 months, which is carried out in the prescribed manner, as well as the amount, received in excess of the nominal value of the placed shares (issue income of the joint-stock company), and other similar amounts” [20].

Depreciation deductions represent the financial result of a fixed transfer of the value of fixed assets, representing for the company additional sources of own funds used to finance activities.

Semenov A.G and Yusypchuk L.A claim: “Net profit - the amount that will remain at the disposal of the enterprise after reimbursement of expenses of production, taxes and other payments. It is customary to include internal production reserves (internal economic) as own sources of financing - these are the sources introduced by the enterprise to increase the efficiency of activities. To cover the need for fixed assets in specific situations for the company there is a need to turn to borrowed sources. This need may occur due to external reasons that do not depend on the company. These can be unreliability of partners, emergencies, reconstruction and technical re-equipment of production, lack of necessary start-up capital, seasonality in production, procurement, processing, supply and sale of products, etc.” [32].

According to Shchepit T.G: “Borrowed capital, or so-called borrowed sources of non-current assets - is attracted to finance the development of the enterprise on a revolving basis, cash and other property. Fixed capital plays a huge role in all areas of

the economy, actively participates in modern transformations in all sectors of the economy related to the economic and political environment, as well as the technological level and organizational structure. The formation of non-current assets is a set of tangible assets that operate in the field of material production and non-productive sphere. Non-current assets are the property of the enterprise and form its main part. It should be concluded that fixed capital is primarily considered as part of the financial resources of the enterprise invested in all types of non-current assets, used for the implementation of production and economic activities for profit” [39].

Thus, by studying the sources of non-current assets, you can find an important difference between them. At the time of receiving the loan capital, the company clearly knows how much and when it will have to give money, as well as what additional percentage of return on funds received it must pay. When receiving equity, owners (shareholders) may not know how much money the capital will bring them in the future. Thus, the company in the process of its activities can use all available sources (own, borrowed), while ensuring its financial stability, development, and increase profits.

The effectiveness of industrial and economic enterprises depends on the structure and intensity of their fixed assets. Thus, the key area of work in the field of financial enterprise is the explanation and selection of appropriate sources of funding for the acquisition and use of fixed assets, assessment of performance of their use, the generation of effective depreciation and investment policy.

Mocherny S.V states that: “Nowadays, conditions of most small and medium-sized enterprises are largely losing their positions due to outdated technology, as well as significantly depleted production capacity. One of the main problems at such enterprises is the lack of high-quality and timely renewal of intangible assets, which in turn would increase the productivity of their activities. Effective management of non-current assets at the enterprise, in addition to increasing competitiveness, allows you to create a strong foundation for the enterprise and the conditions for its effective development in the future. It is necessary to plan and analyze in detail each of the indicators of the balance sheet of the enterprise, as well as pay attention to their comparison with each other” [21].

Brovko L.I and Iterman G.A emphasize that: “Non-current assets management policy is a system of actions based on clearly formed principles, which determine the direction and amount of financing of non-current assets, form the necessary funds from available sources of financing using various methods and forms of financing to ensure the optimal structure of resources, creation of conditions for effective implementation of trade and technological processes both in the long-term and in the short-term periods of activity” [16].

Blank I.A. insists that: “Operating non-current assets formed at the initial stage of the enterprise's activity require constant management. This management is carried out in various forms and various functional divisions of the enterprise. Part of the functions of this department is entrusted to financial management” [5].

Podderogin A.M in turn states: “The main tasks of non-current assets management are: identification of possible forms of renewal of fixed assets on a

simple and extended basis; determining the need for non-current assets to increase production; ensuring the effective use of previously formed and newly introduced fixed assets and intangible assets; formation of the necessary financial resources for the reproduction of non-current assets and optimization of their structure” [23].

Also, Mazurkevich I.O notes: “Regarding the organization of assets by sources, an important rule should be noted: sources of current assets should be short-term liabilities, and sources for non-current assets - long-term liabilities. This rule is explained by the fact that non-current assets by definition belong to the category of low-liquidity assets, whose payback is often longer than the payback of current assets, therefore - they should not be financed by short-term borrowed funds. Non-current assets are quite diverse in their composition, so they can be classified depending on many characteristics. For example, there are active and passive fixed assets (components of non-current assets), productive and non-productive assets, and so on. Non-current assets are harmoniously combined with current assets in the process of enterprise operation (in production and in general economic activity); in addition, some items of non-current assets even resonate with items of current assets (long-term receivables, long-term financial investments, etc.). But like current assets, non-current assets also have their advantages and disadvantages” [18].

The key components of the assets of non-current enterprises will be considered on Figure 3.

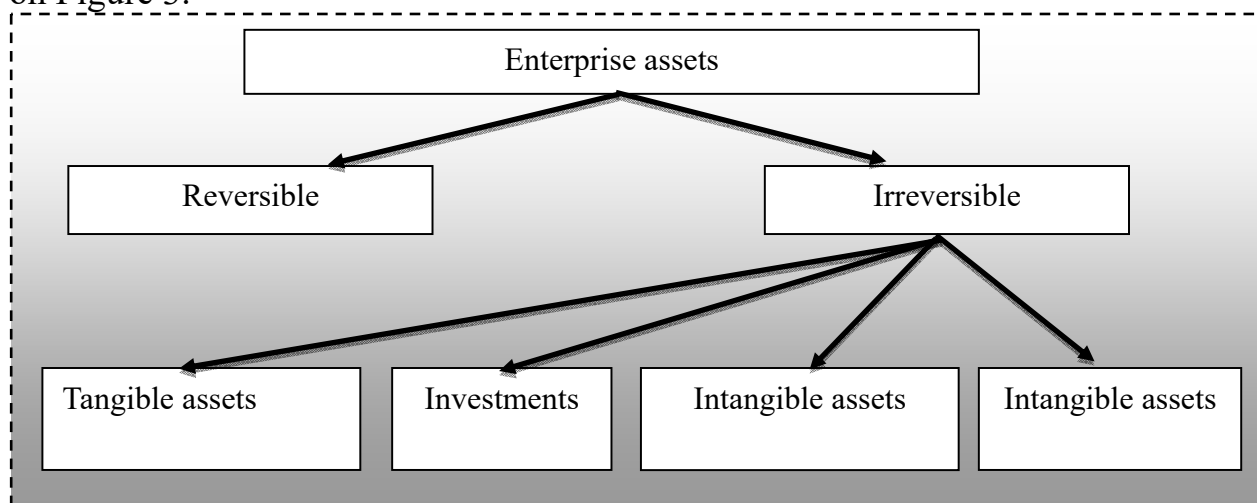


Fig. 3. Key components of non-current assets of the enterprise

While developing a general strategy of a financial enterprise in creating a timely recovery and effective use of non-current assets, it is important to form a policy for managing non-current assets, which generates the following stages:

- analysis of non-current assets of enterprises;
- optimization of the volume and composition of non-current assets at the enterprise;
- ensuring the correct depreciation of the accrual;
- optimization of forms and sources of financing of non-current assets.
- ensuring timely renewal of non-current assets and their effective use.

The analysis is carried out to study the dynamics of the total volume and

composition of non-current assets, the degree of their suitability, the intensity of recovery and efficiency.

The main stages of management of operating non-current assets of the enterprise will be considered on Figure 4.

Among the main reserves- the increase of the production use of non-current assets over time and the increase of the production use of non-current assets by capacity.

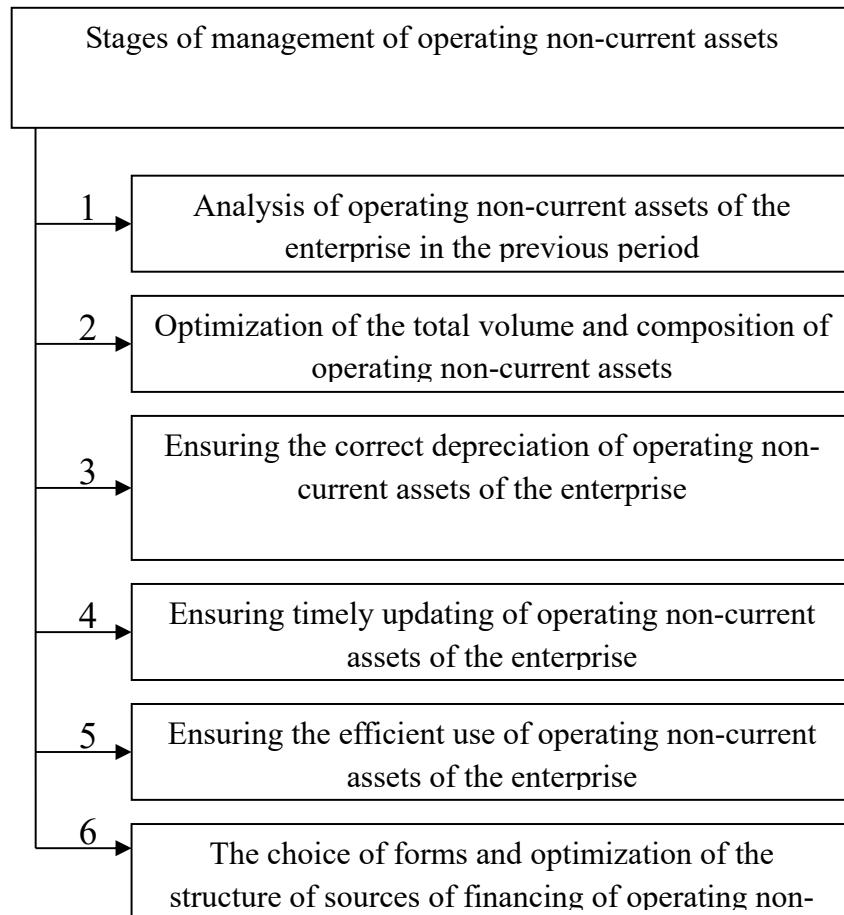


Fig. 4. The main stages of management of operating non-current assets of the enterprise

Depreciation is charged over the useful life of the corresponding asset. An important role in ensuring the accrual of depreciation is played by the compliance of the selected depreciation methods with the policy of formation of financial resources for recovery of these assets.

Romanenko M.A notes: "Given the depreciation of non-current assets, it is necessary to ensure their recovery in time. For these purposes, the company needs the level of intensity of recovery of certain groups of operating non-current assets, calculates the total amount of assets to be restored in the future, sets the basic forms and cost of recovery of various groups of assets" [30].

Consistency of management decisions on renewal of non-current assets is shown in Figure 5.



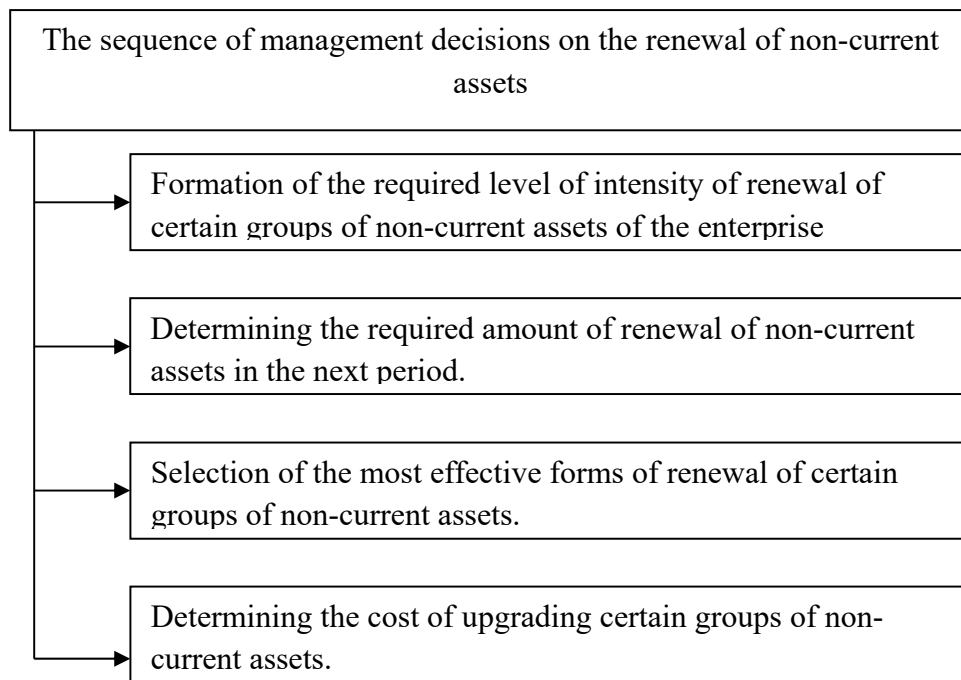


Fig. 5. Consistency of management decisions on renewal of non-current assets

Shvets V. emphasizes: “Ensuring the effective use of non-current assets of the enterprise is to develop a system of measures aimed at increasing the coefficients of profitability and production return of non-current assets. Increasing the efficiency of the use of non-current assets reduces the need for them, because there is an inverse relationship between these two indicators” [37].

According to Ivanilov O.S: “In the system of management of non-current assets of the enterprise one of the most important functions of financial management is to ensure their timely and effective renewal. In a market economy in the process of updating operating non-current assets must take into account the negative impact of inflation on this process. In economic practice, there are two methods of counteracting the negative effects of inflation: periodic indexation of fixed assets and the use of accelerated depreciation” [15].

Management decisions on the renewal of non-current assets are implemented in 4 stages. The first stage is the formation of the required level of intensity of recovery of certain groups of non-current assets of the enterprise, which is determined by two main factors: their physical and functional (moral) depreciation.

The depreciation policy of the enterprise is an integral part of the general policy of management of non-current assets. In the process of forming the company's depreciation policy, the following factors are taken into account: the amount of operating fixed assets and intangible assets, methods of reflecting their real value, the actual useful life of these assets, inflation, depreciation methods permitted by law and more.

Hetman O.O states: “The next step in making a decision- is to determine the required amount of recovery of non-current assets in the future. Restoration of non-current assets of the enterprise can be carried out on a simple or extended basis, reflecting the process of simple or extended reproduction. At this stage, the decision

is influenced by such factors as the presence of non-current assets in the enterprise at the moment and their compliance with the needs of the enterprise, the degree of their wear, the company's strategy and more. The third stage is the selection of the most effective forms of recovery of certain groups of non-current assets. Specific forms of recovery of certain groups of assets are determined taking into account the nature of their planned reproduction. Simple reproduction is carried out in the forms of current or overhaul and acquisition of similar fixed assets, advanced reproduction - construction of new, reconstruction or modernization of existing fixed assets" [8].

The last step is to determine the cost of recovering certain groups of non-current assets in terms of its various forms. Methods of determining the cost of reimbursement of non-current assets are differentiated by individual forms of recovery.

The final results of the above management decisions allow to form a general need to restore the existing non-current assets of the enterprise in terms of their individual types and various forms of future recovery.

Savitska G.V notes: "Financing of non-current assets of the enterprise is carried out according to the following options: use of capital of the enterprise, use of borrowed capital and mixed financing. The choice of the appropriate option of financing the restoration of non-current assets of the enterprise as a whole is made taking into account the following main factors: the sufficiency of their own financial resources to ensure the economic development of the enterprise in the future; the value of a long-term financial loan in comparison with the level of profit generated by renewable types of non-current assets; the achieved ratio of the use of equity and debt capital, which determines the level of financial stability of the enterprise; availability of long-term financial credit for the enterprise" [31].

In the process of financing the restoration of certain types of non-current assets, one of the most difficult tasks of financial management is the choice of alternatives - the acquisition of these assets for ownership or lease of these assets.

Also, Savitskaya G.V draws attention to the fact that: "An alternative to acquiring non-current assets is leasing them. The main advantages of leasing are: the ability to use new equipment without significant one-time costs; no need to start payments immediately; no need for additional guarantees, as the security of the agreement is the equipment itself, etc. The criterion for making management decisions on the purchase or lease of certain types of fixed assets, along with the assessment of the above advantages and disadvantages of leasing and their significance for the company from the standpoint of financial management, is a comparison of total payment flows for different forms financing recovery of property" [31].

Leasing transactions are conducted on the basis of a leasing agreement in the form of a multilateral or bilateral agreement. The scheme of leasing operations is given in Figure 6.

Summing up, we note that non-current assets in the enterprise are the basis of its operation. Their management determines the success of each business entity and the prospects for its further development.

Rational management of non-current assets in the enterprise in accordance with theoretical principles is carried out through a number of stages. Timely renewal of non-current assets and selection of optimal forms of their financing allows the company to be competitive.

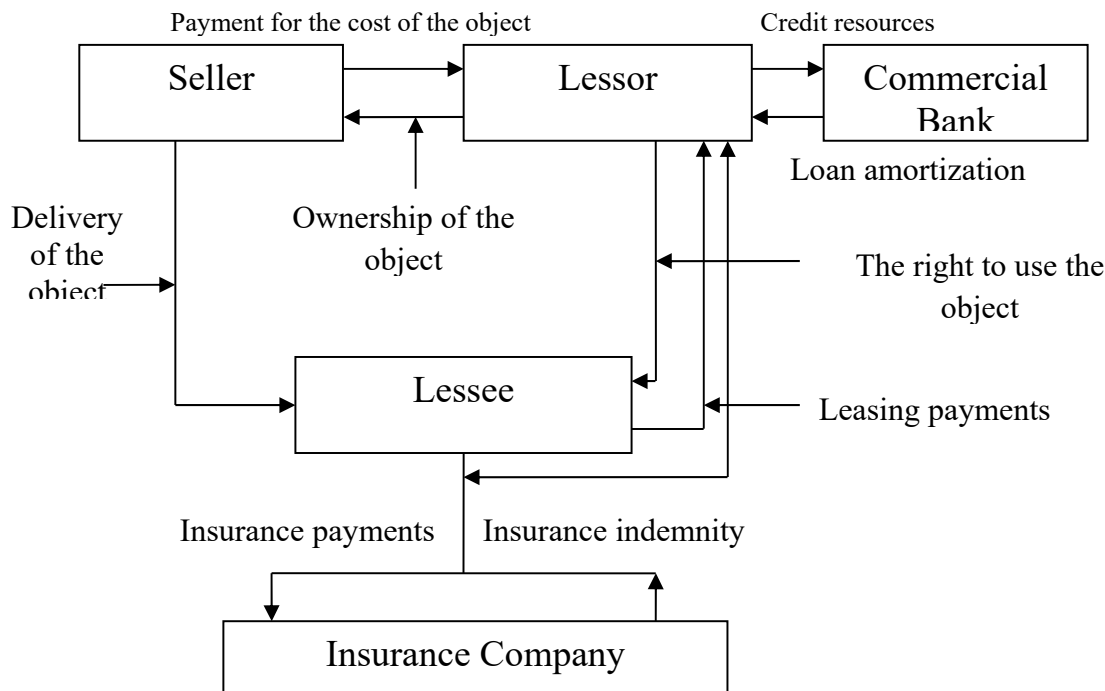


Fig. 6. Scheme of leasing operations

Thus, in the system of asset management of non-current enterprises, one of the most important functions of financial management is to ensure their timely and effective renewal. In a market economy in the process of updating existing non-current assets must take into account the negative impact of inflation on this process.

In market conditions, the problem of financial support for the reproduction of fixed assets of agricultural enterprises becomes particularly relevant. Economic transformations in Ukraine have led to a deterioration in the quality of fixed assets of agricultural enterprises. The formation of the optimal structure of sources of financing the reproduction of fixed assets is a prerequisite for increasing the competitiveness of agricultural enterprises, so the problems of forming sources of reproduction of fixed assets of enterprises deserve special attention.

Arefieva O.V notes: “To increase the degree of economic efficiency of agricultural enterprises, as well as the intensive conduct of agricultural production, it is necessary to ensure the continuous reproduction of fixed assets. It is known that the sources of simple reproduction of fixed assets in the enterprise are depreciation and profit. But most agricultural enterprises do not use profits to reproduce fixed assets, so the main and only internal source of funding for the renewal of fixed assets is the depreciation fund” [3].

The nature and functions of depreciation deductions operate through a number of components, the interaction of which determines the content of the depreciation policy of the state and the enterprise. The main components of the depreciation policy of the agricultural enterprise are presented at Figure 7.

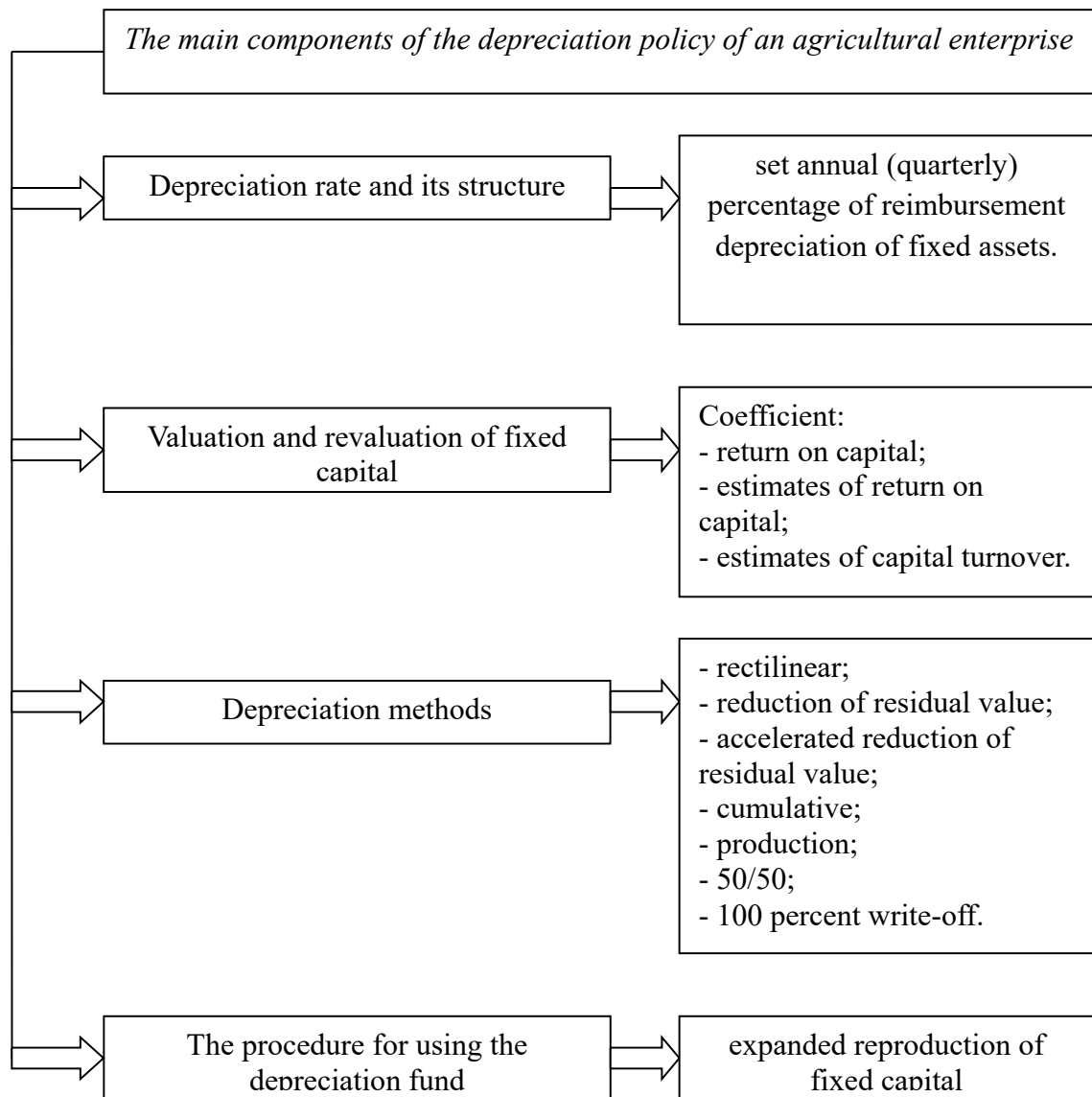


Fig. 7. The main components of depreciation policy

Depreciation of fixed assets determines:

- the process of depreciation and gradual transfer of the cost of fixed assets to the manufactured product with their participation;
- cost element, to which is added the amount of depreciation of accrued fixed assets and intangible assets;
- component of corporate income taxation.

Gorodyanska L.V states: “Analyzing the components of depreciation policy, it should be noted that depreciation deductions are carried out according to certain rules that characterize the annual number of deductions as a percentage of the book value of fixed capital. The depreciation rate is the main lever of depreciation policy, it refers to long-term economic standards that constitute the tools of economic methods of management. Due to the depreciation rate the rate of turnover of fixed capital is regulated, the process of its reproduction is intensified, the technical and production policy at the enterprise is implemented, the acceleration of scientific and technical progress in the means of labor is regulated” [11].

It is difficult to overestimate the importance of efficient use of non-current assets and production facilities. Solving this problem means increasing production, increasing the return of the created production potential and greater satisfaction of employees' needs, improving the balance of enterprise equipment, reducing production costs, increasing profitability.

According to Bradul O.M: “Improving the use of non-current assets also means accelerating their turnover, which greatly contributes to solving the problem of reducing the gap in terms of physical and moral depreciation, accelerating the recovery of non-current assets. Finally, the effective use of non-current assets is closely linked to another key task - improving the quality of products, as market competition is sold faster and high-quality products are in demand” [7].

The activity of the enterprise takes place in the conditions of insufficient development of the investment process. Therefore, there is a problem of rational use of available resources, that is increasing their intensification. To solve this problem requires a systematic analysis of the current state of affairs at this stage of production, on the basis of which it will be possible to develop specific proposals for the use of existing fixed assets and methods of attracting new means of production.

According to Dyba V.M: “When assessing the structure of fixed assets, it is necessary to take into account that their structural elements differ significantly in their functional role in the production process, and therefore do not affect the final results of management with the same activity. Other things being equal, higher results are achieved by those enterprises that are better equipped with the so-called active fixed assets: power and working machines, vehicles, productive livestock, perennial crops” [14].

The structure of fixed assets varies both in dynamics and depending on the specialization of the enterprise. Therefore, the company should establish the optimal level of capital and rational structure of these funds in accordance with its production direction, the achieved level of intensity of the basic industry, and local natural conditions.

According to Momot T.V: “The current assets play an important role in improving the efficiency of fixed assets. The efficiency of the use of fixed assets is reduced due to lack of working capital, such as spare parts, fertilizers, feed, etc. It is important to find a rational relationship between fixed and current assets, as only their optimal combination can increase management efficiency. Acceleration of scientific and technological progress is most clearly manifested in the quantitative growth and qualitative improvement of fixed and working capital, which together with labor and land resources form the basis of agricultural production” [20].

Romanenko M.A emphasizes that: “Quantitative growth and qualitative improvement of fixed and current assets, their concentration in leading industries contributes to the deepening of the technological division of labor, the development of intersectoral and inter-economic relations, has a revolutionary impact on the content of agricultural labor, characterizes the depth and scale of production. In this role, fixed and current assets are a material factor of agricultural production, as well as a factor in improving social relations” [30].

The urgency of the problem of the ratio of fixed and working capital is determined by the dynamics of public and private production, deepening specialization and expansion of intersectoral ties, reforming the agro-industrial complex, inflation, and the entry of the Ukrainian economy into market relations. Methodological issues of optimization of the ratio of fixed and working capital, methods and means of analysis of the processes of formation and use of production assets, their rationing and forecasting require scientific justification.

The key measures to improve the use of fixed assets should be the timely replacement of obsolete equipment and accelerated introduction of new equipment, improving maintenance of machinery and tractor fleet, the use of such forms of new equipment, especially leasing, attracting both investment domestic and foreign.

The accumulation of production volumes is a key sign of increasing the efficiency of fixed assets. On the other hand, the volume of production depends on the capital fund of labor and the efficiency of labor use. Efficient use of equipment during the working day and fullness of the working day, full-fledged work at all times contribute to increased productivity and, consequently, increase production.

Thus, there are two main forms of improving the efficiency of fixed assets - extensive and intensive.

The form of extensive renewal characterizes the growth rate of fixed assets in operation.

Intensive - aimed at replacing existing funds with more efficient ones. Among the large areas: - reduction of downtime, which involves the formation of optimal levels of raw materials; quality maintenance of equipment, etc.; - reducing the number of unused equipment by renting, selling; - expansion of the fleet of machines and equipment if necessary. The main intensive areas are: - increasing the level of mechanization and automation of production; - replacement of obsolete equipment and machines, their modernization; - application of progressive forms of organization and management of production, etc.

The practical implementation of these measures will intensify production and, as a consequence, increase the efficiency of fixed assets. This, in turn, will reduce production costs and increase labor capital and, consequently, labor productivity. This will increase the profitability of production.

According to S.M Firsova: "The effective use of the resource potential of agricultural formations is an objective necessity and an important prerequisite for the development of the agricultural sector of the economy. Reformation transformations in agriculture have not given the expected socio-economic return, enterprises are in a difficult position, the resource potential of the industry is collapsing. In the structure of the resource potential of agricultural formations the main share is occupied by land resources - 60.4%, fixed assets and human capital are respectively 15.2 and 24.4%" [34].

Antish O.M notes: "Today one of the most urgent tasks facing a modern enterprise, which has a complex expensive to maintain equipment, is the need to ensure its safety and at the same time cost-effective operation. An important point in solving this problem is the introduction of management systems for production assets

and assets of the enterprise, which are an integral part of the production process and increase production capacity through the use of modern information technology without resorting to new equipment. An important point in solving this problem is the introduction of management systems for production assets and assets of the enterprise” [2].

Atamas G.P draws attention to the fact that: “The volume of production of goods and services and the related final results of the enterprise's activity crucially depend on the equipment of the enterprise with fixed assets and their effective use, first of all on the efficient use of fixed assets. The main sign of increasing the level of efficient use of fixed assets of an enterprise is the growth of production or services. The successful operation of fixed assets and production facilities depends on the extent to which extensive and intensive factors of their best use are realized. An important indicator of the use of fixed assets is the return on assets - with increasing return on assets increases the efficiency of use of fixed assets” [4].

Hetman O.O notes: “The main areas of improving the efficiency of use of fixed assets by the company are as follows:

1. Installation, assembly and commissioning of fixed assets, if possible, simultaneously.

2. Increase in capital investment in the active part of the fixed assets of the enterprise.

3. The maximum possible use of productivity and capacity of the equipment available at the enterprise.

4. The maximum possible use of the calendar fund time in accordance with the technical characteristics of the equipment.

5. Ensuring proper maintenance and compliance with the necessary operating conditions of the equipment.

6. Timely renewal of fixed assets of the enterprise.

7. The use of a combined method of organizing production processes at the enterprise.

8. Inclusion in the production of unused production assets.

9. Even loading of fixed assets during the working day.

10. Improving the professional qualification level of the staff serving the main production assets” [9].

The effective work of fixed assets and production capacity depends on how the extensive and intensive factors of their best use are realized. Comprehensive improvement of the use of fixed assets and production facilities means: firstly, increasing the operating time of basic equipment, and secondly, increasing the share of existing equipment in the total amount of equipment available at the enterprise.

Extensive ways to increase the use of fixed assets are presented at figure 8.

According to Cherep A.V.: “The key prospects in increasing the operation time of the equipment are:

- reduction and liquidation of internally variable downtime by increasing the level of organization of production (full and timely provision of jobs with tools, materials, semi-finished products, details);

- improving the quality of equipment maintenance;
- reduction of round-the-clock downtime of equipment, increasing the coefficient of variability of its work” [36].

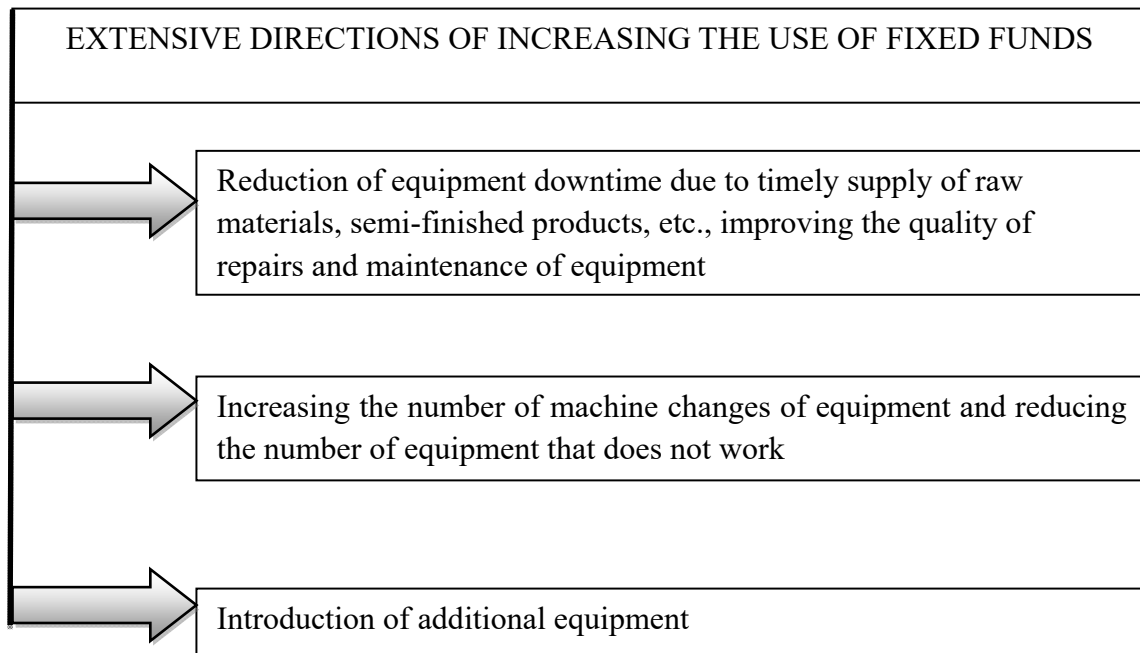


Fig. 8. Extensive ways to increase the use of fixed assets

An important way to increase the efficiency of the use of fixed assets is to reduce the amount of inactive equipment, decommissioning surpluses and rapid involvement in the production of uninstalled equipment. It should be noted that a significant improvement in the use of fixed assets and production capacity, although not implemented to date, still has limitations. Intensive improvement of the use of fixed assets and production capacity, which involves increasing the degree of loading of equipment per unit time, has much more scope. Intensive directions for improving the efficiency of the use of fixed assets are given in figure 9.

Significant reserves for better extensive and intensive use of fixed assets and production capacity are to improve the structure of fixed assets. Since the increase in output is achieved only in the leading main collections, it is important to increase their share in the total amount of fixed assets.

The increase in fixed assets of ancillary production leads to an increase in capital intensity of production, because it does not directly increase production, but even without a proportionately developed ancillary production, the main shops cannot function fully efficiently.

Ivanilov argues that: “It is necessary to establish the optimal production structure of the enterprise - an important area for better use of fixed assets. An important reserve for the best extensive and intensive use of fixed assets and production facilities - rapid development of design capacity, commissioning of new technological lines, units, equipment. Practice shows that the average actual period of development of production capacity is five to six years or more. At the same time,



technically and economically sound calculations confirm the real possibility of achieving the project indicators in one or two years, depending on the industry and type of enterprise" [15].

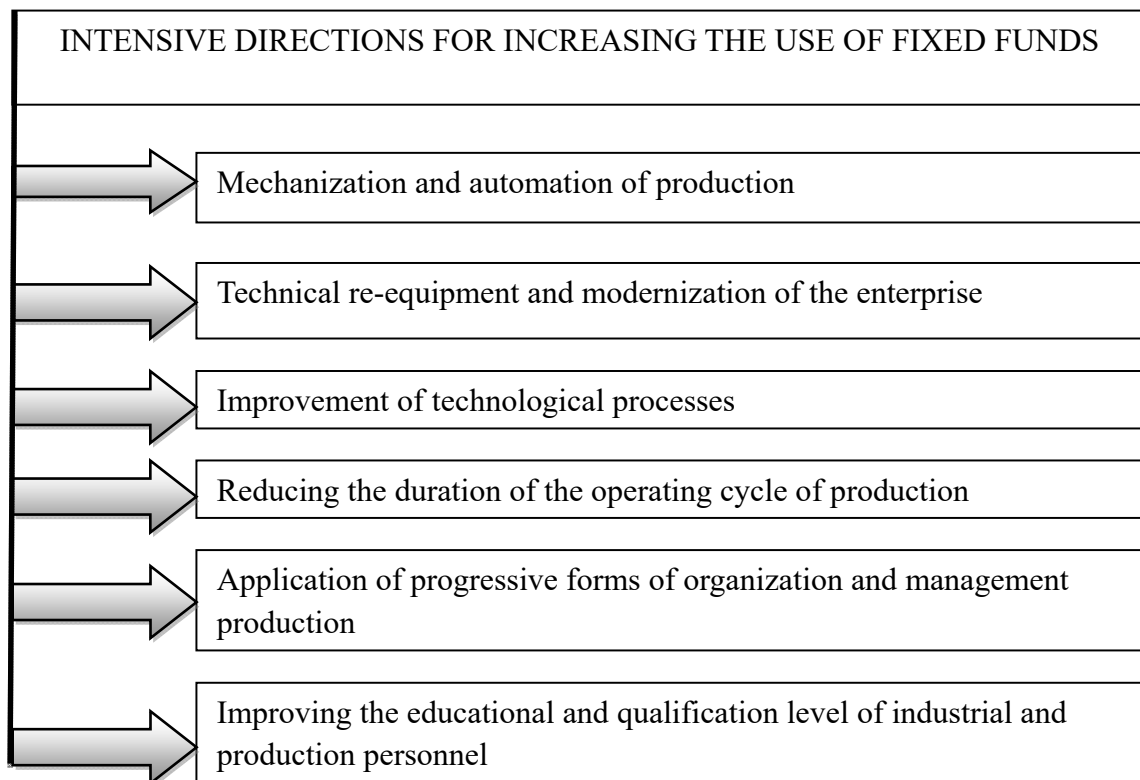


Fig. 9. Intensive areas to improve the efficiency of fixed assets

In modern conditions it is necessary to introduce and implement the following main directions of intensification of reproduction of fixed assets:

- radical improvement of the entire organization of works and its economic justification at all stages of the reproduction process (design - production - distribution - implementation - operation of new equipment);

- compliance of each enterprise with its strategy of technical, organizational and economic development;

- reorientation of investment policy to the maximum technical re-equipment and reconstruction of existing production facilities; immediate significant increase in the scale of decommissioning of technically obsolete and economically inefficient machines and equipment, the transition from the practice of one-time replacement of used tools to a systematic comprehensive update of the technical and technological base of interconnected production units of enterprises;

- formation of organizational and economic system at the national level, able to ensure the constant interest of all parts of the research and production complex in the implementation of the most effective processes of reproduction and perception of scientific, technical and organizational innovations (innovations).

According to Cherep A.V.: "The practical implementation of these main areas of intensification of reproduction processes requires not only active engineering and production activities of the enterprises themselves, but also the mobilization of own

financial means. It is fully possible under the condition of, above all, constant state support, direct participation of many institutions of market infrastructure and foreign capital. The main sign of increasing the level of efficient use of fixed assets and production capacity of an enterprise is the growth of production. The number of manufactured products for the existing size of the production apparatus depends, on the one hand, on the time of productive operation of machinery and equipment during the relevant period, and on the other on their degree of use of tools per unit of time” [36].

At the modern stage of economic development, most agricultural enterprises are acutely short of cash, which is part of current assets. The main reason for this phenomenon was the lack of an effective asset management system in general. Effective asset management is important to ensure the functioning of the enterprise, as an effective asset management policy will ensure the continuity of the production process of enterprises, the establishment of a system of cash flow management and receivables.

Hetman O.O notes: “In the process of diagnostic work, it is necessary to obtain the most objective assessment of the state of assets in order to further develop the enterprise. Diagnosis of assets allows you to identify key problems and ways to overcome negative situations in the enterprise, which will ultimately allow you to identify and improve the efficiency of their management. Carrying out diagnostics of the state of assets will give the chance to strengthen competitiveness of the enterprise both in the internal, and in the foreign markets” [9].

A model of diagnostic analysis of enterprise assets has been formed. It is advisable, to note that scientists pay little attention to determining the effectiveness of asset management. This issue is practically not considered in the literature. For diagnosis, it is useful to use those indicators that are the information basis for making management decisions about asset management. The practical value of this principle is obvious, given the fact that it is often unclear what criteria are used to value assets and what ratios underlie the analysis. An important point for the company's management is to determine the effectiveness of asset management, which will find problems in management.

According to Hetman O.O: “The main purpose of the diagnostic analysis of the effectiveness of asset management is their comprehensive assessment, based on the results of which, management will be able to calculate the effectiveness of asset management and respond in time to changes in the management of the enterprise. Data processing can be done manually, in automated or partially automated. But preference should be given to automated systems that improve the quality of analysis. At the first stage of asset analysis, it is important to identify a system of evaluation indicators that allow to diagnose the condition of assets and propose measures to avoid errors, deviations, distortions of information, strategic decisions to prevent and protect the subject from internal and external factors of crisis” [9].

For the purpose of more exact understanding and importance of use we will make a graphic kind algorithm of diagnostics of assets of the enterprise which is presented on figure 10.

Let us consider in more detail each member of the sequence of analysis of assets within the diagnostic analysis of the enterprise.

Cherep A.V. singles out the 1st stage and explains it as follows: “Asset management analysis - analysis of asset management policy in terms of their types, current and non-current, which are actually available at the time of assessment. The source of information is the reporting of the enterprise. Also, at this stage the main indicators of the state and efficiency of asset management are analyzed. The company needs to conduct an analysis of such indicators as: - horizontal and vertical analysis of assets; - analysis of liquidity indicators; - analysis of financial stability indicators; - analysis of profitability; - analysis of the availability of current assets; - analysis of the efficiency of current assets” [36].

According to Grabovetsky B.E: “Analysis of the effectiveness of the use of current assets helps to assess the availability of current assets in the enterprise, their excess or lack of. Based on the results of the analysis, an appropriate conclusion is made about the state and efficiency of asset management and the transition to the second stage” [12].

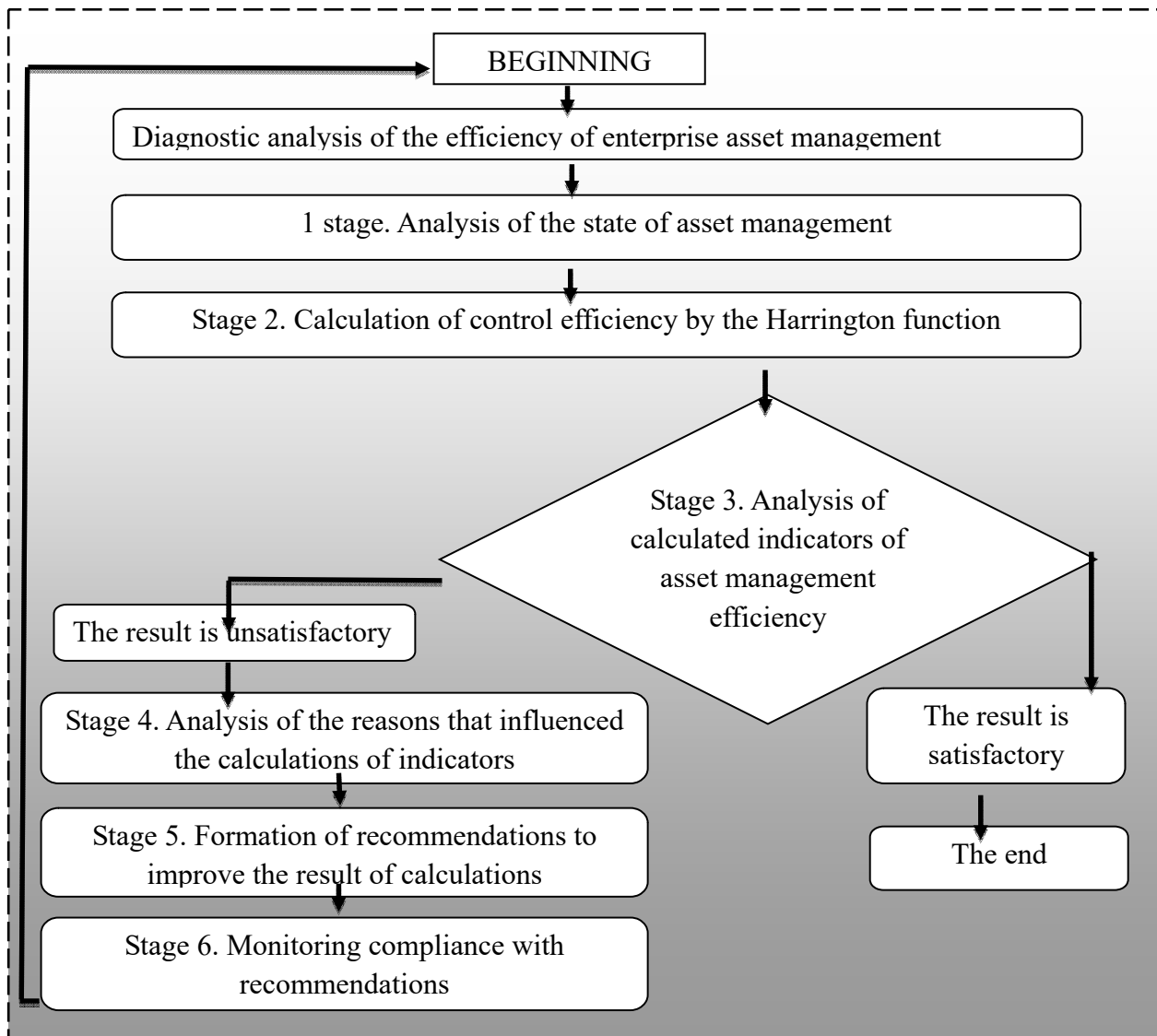


Fig. 10. The algorithm of diagnostics of assets of the enterprise

2nd stage. Calculation of efficiency management using the Harrington function. At this stage, the cumulative indicator is calculated according to the Harrington function.

$$S = \sqrt[n]{A_1 \times A_2 \times A_3 \times \dots \times A_n} \quad (7)$$

where  $A_1, A_2, A_3, \dots, A_n$  - indicators that are acceptable for analysis during the analysis of management effectiveness.

The result of such calculation will be the final coefficient of usefulness, it will indicate the level of efficiency: high, sufficient or low. Being at this stage, the company must divide the indicators according to certain criteria.

The scale for assessing the effectiveness of asset management of the enterprise is presented in table 1.

Table 1

The scale for assessing the effectiveness of asset management of the enterprise

Evaluation of effectiveness	The value of the generalizing indicator	Characteristic
High	8.0-10.0	The result of the diagnosis is characterized by the dynamics of positive indicators for all indicators
Sufficient	2.0-7.9	Indicators may have a temporary negative dynamic
Low	0, -1.9	It is characterized by a significant decrease in indicators for all components

The separation criteria are:

1. It is important to calculate the indicator of integrated assessment of the effectiveness of management of non-current assets.

Homyak R.L proposes: "In order to assess the effectiveness of management of non-current assets, it is proposed to be guided by such indicators as depreciation ratio, capital efficiency, return on assets, suitability ratio of fixed assets, renewal and disposal ratios, profitability of fixed assets. The above indicators make it possible to assess the degree of management of non-current assets" [35].

The efficiency of non-current asset management is low with decreasing dynamics.

2. The indicator of integrated assessment of the efficiency of current assets management is calculated.

In order to assess the effectiveness of current asset management, it is proposed to be guided by such indicators as profitability of sales, the average maturity of receivables, inventory turnover, the average maturity of accounts payable. The above indicators allow us to assess the degree of management of current assets. The assessment of current assets management is positive with declining dynamics.

3. Using the expert scale, the above indicators are converted into scores, they are also assigned weight values that allow to obtain integrated levels of various components when assessing the effectiveness of asset management of the enterprise.

It is important for the company's management to determine whether they are satisfied with this result or not. If so, the analysis ends, if not - go to the stage of subsequent analysis of the reasons for this result.

Based on the generalization of the values of these levels, the highest score of the scale of each indicator (10 points) should be used to generate a scale of performance management of enterprise assets based on the integrated indicator and its graphical interpretation.

Stage 3. Analysis of the calculated indicators of asset management efficiency. At this stage, based on the results of determining the level of management efficiency, the company comes to the appropriate conclusion. If the level of efficiency is high, the result satisfies the management, then the analysis is complete. If the result is low or sufficient, go to the fourth stage.

4th stage. Analysis of the reasons that influenced the calculations of performance indicators. Based on the results of the analysis, the analysis of the reasons for the impact on the selected evaluation indicators is performed. It is possible that the selected indicators do not clearly reflect the whole picture or the influencing factors are chosen incorrectly. After this analysis, we move on to the fifth stage.

5th stage. Formation of recommendations for improving the result of calculations. At this stage, the persons responsible for diagnosis form the necessary set of recommendations to improve the result of calculations.

6th stage. Control over compliance with recommendations - monitor the correction of indicators

So, summarizing, we note that research has shown that in the process of diagnostic work it is necessary to obtain the most objective assessment of the state of assets in order to further develop the enterprise. Diagnosis of assets allows you to identify key problems and identify ways to overcome negative situations in the company, which will eventually identify and improve the efficiency of their management. Carrying out diagnostics of the state of assets will give the chance to strengthen competitiveness of the enterprise both in the internal, and in the foreign markets. For diagnosis, it is useful to use those indicators that are the information basis for making management decisions about asset management. The practical value of this principle is obvious, given the fact that it is often unclear what criteria are used to value assets and what ratios underlie the analysis. An important point for the company's management is to determine the effectiveness of asset management, which will find problems in management. The priority of increasing the efficiency of fixed assets is to reduce the number of inactive equipment, decommissioning of excess and permanent inclusion in the production of uninstalled equipment.

The main purpose of diagnostic analysis of the effectiveness of asset management is their comprehensive assessment, the results of which management will be able to calculate the effectiveness of asset management and respond in a timely manner to changes in enterprise management. Data processing can be done manually, in automated or partially automated.

In the process of diagnostic work, it is necessary to obtain the most objective

assessment of the state of assets in order to further develop the enterprise. Diagnosis of assets allows you to identify key problems and identify ways to overcome negative situations in the enterprise, which will ultimately identify and improve the efficiency of their management. Carrying out diagnostics of the state of assets will give the chance to strengthen competitiveness of the enterprise both in the internal, and in the foreign markets.

Summarizing the results of the study on financial management of non-current assets of the enterprise and finding ways to improve it, it is established that the value of non-current assets of the enterprise depends on the number of financial resources it has. The structure of coverage of assets by sources of formation directly affects the financial condition of the enterprise. Optimally formed non-current assets due to a certain structure of financial resources allow the company to continuously carry out its activities, maintain a sufficient level of its solvency.

The main measures to improve the use of fixed assets should be timely replacement of obsolete and materially obsolete equipment, accelerated commissioning of new equipment, improvement of maintenance of machinery and tractor fleet, use of new forms of new equipment, including leasing, attracting investment from both domestic and foreign.

Increasing production is one of the signs of improving the efficiency of fixed assets. On the other hand, the volume of production depends on the capital stock of labor and the efficiency of labor use. Efficient use of equipment uses the working day and the fullness of the working day, full-fledged work for all time helps to increase productivity, as well as increase production.

In modern conditions it is necessary to implement the following main directions of intensification of reproduction of fixed assets: - radical improvement of the whole organization of works and its economic substantiation at all stages of the reproduction process (design - production - distribution - implementation - operation of new equipment); - adherence to its own strategy of technical, organizational and economic development; reorientation of investment policy to the maximum technical re-equipment and reconstruction of existing production facilities; immediate significant increase in the scale of decommissioning of technically obsolete and economically inefficient machines and equipment, the transition from the practice of one-time replacement of used tools to a systematic comprehensive update of the technical and technological base of interconnected production units of enterprises; formation of the organizational and economic system at the national level, capable of ensuring the constant interest of all levels of management of the research and production complex in the implementation of the most effective processes of reproduction and perception of scientific, technical and organizational innovations (innovations).

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#### **4.3. TOOLS AND METHODS OF MANAGEMENT USED IN FORMING A STRATEGY TO INCREASE COMPETITIVENESS OF AN ENTERPRISE**

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Globalization and internationalization of socio-economic processes, scientific and technological progress, mobility of labor and capital, informatization of society have led to profound changes in the economy. All this places new demands on the management of organizations. The need to quickly respond to changing factors in the external and internal environment, adapt to new market conditions, generate new ideas and implement them in real practice required the management and managers of enterprises to master modern management methods and tools. Their use is necessary, first of all, to ensure competitiveness and search for competitive advantages of the organization.

Within the framework of existing conceptual approaches (marketing, resource, dynamic capabilities of the company, etc.), various scientific views on the problem under study are substantiated, which largely predetermines a wide range of strategies proposed by domestic and foreign scientists to increase the competitiveness of an industrial enterprise. However, these theoretical approaches are insufficiently developed not only in methodological terms, but also at the level of forming an instrumental base for solving this problem. In addition, they do not reflect the features of the actual practice of the functioning of Russian industrial enterprises.

All this requires clarification of certain theoretical provisions and substantiation of methodological approaches to the formation of a strategy for increasing the competitiveness of an industrial enterprise based on the methods and tools of modern management.

Among foreign researchers, I. Ansoff, J. M. Keynes, J. B. Clark, T. Konno, F. Kotler, J. J. Lambin, M. X. Mescon, R. Morgan, F. X. Knight, W. Petty, M. E. Porter, D. Ricardo, A. Smith, A. A. Thompson, R. S. Russell, F. A. Hayek, S. Hunt, K. Haxaver, P. Heine, J. A. Schumpeter and others.

Despite a significant number of works devoted to the problems of

competitiveness, many issues have not yet been reflected in research. Thus, a number of theoretical and methodological aspects of the formation of a strategy for increasing competitiveness in an innovative economy remain insufficiently developed. Scientific publications devoted to the problem of competitiveness management practically do not take into account the peculiarities of the functioning of Russian enterprises in the context of economic reforms. Thus, the need to develop theoretical provisions and methodological approaches to the development and implementation of a strategy for increasing the competitiveness of industrial enterprises determined the choice of topic, setting the goal and objectives of this scientific study.

The purpose of this study is the development of theoretical provisions, as well as the development of methodological and practical recommendations for the formation of a strategy for increasing the competitiveness of an industrial enterprise based on the use of management tools and methods.

The theoretical and methodological basis of the study was:

- fundamental and applied research of domestic and foreign scientists in the field of competitiveness management;
- publications in periodicals on this issue;
- materials of international, all-Russian and regional conferences and seminars devoted to theoretical issues and practical aspects of the use of management tools and methods in the formation of a strategy for increasing the competitiveness of an industrial enterprise.

In the course of the study, methods of system and structural analysis, synthesis, SWOT analysis, portfolio analysis, statistical, economic-mathematical, graphical methods, etc. were used.

The information base of the study was:

- materials of the statistics service;
- reference and methodological materials;
- reporting data of enterprises;
- results of the collected and processed materials on the studied enterprises.

The development of the concept of competitiveness is based on the theory of comparative advantages of national economies: rich natural resources, favorable geographical, climatic, infrastructural factors, etc. In the course of post-industrial development, new competitiveness factors arise in the market environment based on the achievements of scientific and technological progress, innovations at all stages of the chain creating product value. Comparative advantages given by nature are static, not eternal and non-reproducible, while competitive advantages are dynamic, associated with innovation, the development of human capital, intelligence, and by their very nature are limitless.

Despite the variety of domestic and foreign approaches to the study of the category of "competitive advantage", there is currently no definition that reflects its specific features. The systematization of different points of view on the essence of competitive advantage made it possible to formulate the author's definition of this category. The proposed interpretation is based on an axiological approach, according to which the realization of a competitive advantage is based on the essential nature of

value, depends on its content, origin, form of manifestation, scale of distribution and other conditions.

Therefore, competitive advantage is the possession of a certain value that gives an enterprise superiority over its competitors for a certain time. The methodological basis for identifying competitive advantages can be our proposed generalized classification (table 1), which allows us to determine the role of a particular competitive advantage in developing a strategy to increase the competitiveness of an enterprise.

Table 1

Classification of competitive advantages of an enterprise

Classification sign competitive advantage	Types of competitive advantages
By the period of formation and implementation	a) strategic; b) tactical
In relation to the product (according to the content of the factor benefits)	a) price characteristic; b) differentiation; c) market position
According to the source of occurrence in relation to the industrial enterprise	a) resource; b) technological; c) cultural; d) innovative; e) global; f) natural and climatic; g) socio-political; h) economic
Depending on the formation environment in relation to the industrial enterprise	a) External; b) internal
Depending on the ability of enterprises to influence their formation	a) Genetic; b) created
According to the content of the advantage factor	a) the quality of the goods; b) the price of the goods; c) expenses of the consumer of goods; d) product service quality
How to get the benefit	a) by inheritance; b) training; c) introduction of innovations; d) moving
Where the benefits are realized	a) workplace; b) organization; c) region; d) industry; e) country; f) the world community
By the type of effect obtained from the realization of the advantage	a) Scientific and technical; b) ecological; c) social; d) economic
By time of existence	a) Long-term; b) short-term

The presence of competitive advantages for an enterprise in comparison with others producing similar goods is the most important condition for increasing

production efficiency and increasing the value of an enterprise.

There are the following types of competitive advantages:

low-order advantages - cheap: labor, material resources, buildings and equipment, financial resources (low prices);

high-order advantages are unique: products, technologies, personnel, resources, connections, brand [3, p. 171].

If an industrial enterprise has low-order competitive advantages, i.e. can use cheap production resources, this allows him to sell his goods at lower prices than his competitors, and thanks to this win in the struggle for buyers. But such advantages are usually short-lived, as these resources can either rise in price or be outbid by richer competing firms. Competitive advantages of a high order obtained due to unique knowledge, abilities, technologies are more stable in time. Using these advantages, the company can successfully sell its products not only because it is cheaper than competitors, but also because it is more in line with the requirements of buyers.

Modern domestic industrial enterprises in terms of competitiveness are significantly inferior to foreign ones, as evidenced by numerous studies. With all the variety of scientific approaches, methods for assessing and managing competitiveness, they are not systematized and do not always take into account the specific features of the object of study.

In this regard, the author's classification of methods for assessing the competitiveness of an industrial enterprise is proposed (Table 2). It allows you to systematize them depending on the form and content, the method of determining competitiveness, as well as the method and source of obtaining information. The most structured and widely used in real practice is the first group of methods, which includes quantitative, qualitative, descriptive and mixed methods for assessing competitiveness. When forming a competitive strategy of an enterprise, you can use the whole variety of the presented methods. Analysis of the situation in industrial enterprises and competition in it involves a thorough study of competition, identifying its sources and assessing the degree of influence of competitive forces.

Systematization of competitive forces, analysis of the nature of competition can be carried out on the basis of M. Porter's factor models, in particular, the model of the five forces of competition.

A more sophisticated method for assessing competitiveness is the marketing strategy impact assessment model (PIMS), the essence of which is to calculate multiple regressions of return on invested capital (ROI) and cash flow for various factors. ROI is calculated as the ratio of income to the book value of assets. The factors explaining the change in ROI and cash flow include the entire set of indicators characterizing the development of the market, the production capabilities of the enterprise and competitors, the development of macroeconomic processes, etc.

The PIMS model makes it possible to calculate the average level of industry and market development, conduct a sensitivity analysis of the strategy by varying the value of one or more factors, and solve the problem of choosing the best combination of controlled factors in terms of profitability.

Table 2

## Classification of methods for assessing the competitiveness of enterprises

Methods for assessing competitiveness	
By type of methods	
Quantitative	A) Economic and mathematical B) Statistical B) Rating D) Forecasting methods E) Methods using the theory of effective competition E) Complex methods
Quality	A) matrix B) Graphic C) Evaluation in terms of comparative advantage D) Evaluation from the standpoint of the theory of equilibrium E) Evaluation based on the analysis of key success factors
Descriptive (based on development strategy development)	A) Benchmarking B) Factorial models of M. Porter B) PIMS model D) LOTS analysis E) GAP analysis
Mixed	A) Functional cost analysis B) Matrix I. Ansoff "product-market" C) Use of positioning scheme
According to the method of determining competitiveness	
1. Analytical	2. Parametric
3. Expert	A) individual B) Collective
Statistical	Combined
Depending on how information is obtained	
1. Measuring.	2. Registration. 3. Estimated.
4. Experimental	A) According to the degree of materialization of the object of study B) By the nature of the environment C) By type of distribution channels used D) According to the degree of awareness of the participants E) According to the logical structure of the proof of the hypothesis E) Venue G) On the subject of research H) According to the scale of the task
Depending on the source of information	
1. Traditional	3. Organoleptic
2. Expert	4. Sociological

Benchmarking is a management method aimed at improving quality and achieving superiority in the competition and allowing for a comparative assessment of competitiveness (competitive benchmarking). As an interaction marketing tool, benchmarking provides the following benefits in managing the innovative potential of an enterprise:

- allows you to determine the best technologies and resources that can be used to create products;
- ensures the harmonization of the interaction of business partners through the exchange of information and focus on the best experience;

- forms a base of new knowledge (constant monitoring of advanced designs and technologies), which allows you to create fundamentally new products.

All listed and presented in Table. 2 methods are used in the analysis of the competitiveness of an industrial enterprise, assessment of its competitive potential and determination of its impact on the effective functioning and growth of the value of the enterprise, and are also used in the formation of a strategy to increase its competitiveness.

An important management tool, which is also the most important competitive advantage of an industrial enterprise, in modern conditions is becoming innovative activity, with the help of which the nature of the innovative activity of an enterprise is assessed.

Innovation activity has the following features: strategic character and manageability; efficiency and timeliness. At the present stage of economic development, innovations are becoming the most important tool of competition, but innovation competitiveness in the scientific literature is still not given due attention.

The term "innovative competitiveness" is used in scientific and practical works. However, there is no consensus on this concept and its strict formulation; domestic enterprises do not calculate the level of innovative competitiveness, which does not allow an objective assessment of their innovative activity.

Based on the systematization of the key provisions of the theory of competition and the theory of innovation, it is proposed that innovative competitiveness be understood as the creation of competitive advantages from the introduction of innovations, where innovation is a materialized result obtained from capital investment in new equipment or technology, in new forms of organization of production, labor, service and management, including new forms of control, accounting, planning methods, analysis techniques, etc.

In other words, this is the ability of economic entities to compete with their rivals based on the intensification of innovative activity. The level of innovative competitiveness allows you to establish the compliance of the strategy of an industrial enterprise with global development trends and provide a reliable foundation for development for the future. Innovations used to improve the innovative competitiveness of an enterprise, depending on the goals set, can be of various types: technological, industrial, organizational, social, etc. Competitive advantages for industrial enterprises are manifested mainly in the new, higher quality of products, in its unique properties, production technologies, etc. The analysis of the innovative competitiveness of certain enterprises was carried out according to the relevant EU methodology by the ranking method based on the calculation of the integral indicator according to the eight most significant criteria. Analysis of private indicators of innovative competitiveness allows us to identify the strengths and weaknesses of the innovative activity of the enterprise.

Agro-Oven Corporation occupies a leading position in the following indicators: 4th - in terms of "the share of sales of products that are new to this market, from the total turnover of the enterprise" and "the share of sales of products that are new to the enterprise, but not for the market from the total sales"; 6th - according to the indicator

"share of workers with higher education"; 9th - according to the indicator "share of expenditures on innovations from total turnover (in percent)"; 10th - in terms of "the share of patents attributable to this enterprise." In a number of positions, the enterprise under study is significantly inferior to other cable enterprises. It ranks 23rd in terms of the "share of the enterprise's costs for education and training of personnel related to innovations in the volume of shipped products", 22nd in terms of the indicator "share of used new trademarks attributable to the enterprise out of the total number of new trade marks". brands in the industry", 19th – in terms of the share of registrations of parts of the project attributable to this enterprise in the total volume of registrations. These areas are problematic in innovation.

Control over the state and dynamics of the main indicators and factors of innovative competitiveness is carried out on the basis of an effective system for monitoring the innovative competitiveness of an enterprise. Such a system not only allows you to quickly and efficiently manage its innovative activities, but also has a wide multiplicative effect on a set of socio-economic indicators and processes, in particular, it allows you to choose the optimal ratio between internal and external innovations and adjust it with various changes in the external and internal environment. .

Evaluation of competitors was carried out on the basis of an analysis of their prices, the quality of raw materials and materials used, and marketing research. Its results indicate that in the markets of Ukraine and the CIS it has sufficient potential to produce new import-substituting products that meet international standards and can compete with leading domestic and foreign manufacturers of similar products. As a result of assessing the situation in the market of agricultural products, the main competitive advantages of products were identified:

- lower cost, allowing you to set prices lower than those of competitors;
- compliance of product quality with international standards;
- environmental safety of both products and technology of its production.

In addition, competitive advantages were identified for the main nomenclature groups. An assessment of the enterprise's potential led to the conclusion that the combination of its fixed, working and human capital, information technology and competitive advantages in the fields of science, engineering, technology and management potentially provides it with a fairly high level of competitiveness.

However, the focus of an enterprise exclusively on low-order competitive advantages - low prices, cheap labor - can lead to absorption by other, larger, competitive companies.

In order to increase the competitiveness of an industrial enterprise based on the identified competitive advantages, it is necessary to form its competitive strategy, which is understood as a set of enterprise actions aimed at providing the buyer with great values. It is also a decision-making process on the goals and priority areas for the development of an enterprise based on the identification and effective use of competitive advantages. Its development is carried out on the basis of the use of analytical information, marketing research and assessment of the human, material, technological and financial resources available to the enterprise.

Thus, the strategy of the enterprise depends on the goals and the chosen method of achieving a competitive advantage. Based on the basic growth strategies and competitiveness strategies, the enterprise forms its development strategy based on the market share and the level of production diversification. The structure of a strategy for increasing the competitiveness of an industrial enterprise can be in many respects similar to the main sections of a business plan and include: the general goal and basis for developing this strategy, an executive summary, a list of managers and performers, principles and methods of development and implementation, measures for the introduction and development of new information, resource-saving and other technologies, tactical and strategic marketing, pricing policy formation.

For the enterprise under study, as a competitive strategy, the most preferred strategy is customer focusing, which allows you to determine the set of key competencies that guarantee satisfaction of the needs of a certain group of actual and potential customers.

The customer focus strategy includes:

1) customer focus (in contrast to customer (market) orientation, which takes into account already known requests and needs, it is aimed at identifying not only real, but also potential demand, thereby eliminating the risk of becoming dependent on the client);

2) a comparative analysis of the competencies of an industrial enterprise and competitors, allowing to evaluate their technological developments, which reduces the unpredictable risk in the market for a new technology;

3) identification of the requests of selected groups of customers and their implementation in competitive products, which initiates secondary innovative activity.

Thus, the customer focus strategy allows an industrial enterprise to use its resource strengths in those market segments where it has a competitive advantage. This strategy provides higher innovative activity, and also creates a consumer innovative environment.

The quality of the strategy for increasing the competitiveness of an industrial enterprise is proposed to be assessed by an expert method by analyzing the level of its scientific validity, structure, completeness and objectivity of the forecasts and calculations made for each section.

Thus, the main conclusions and proposals for the study are as follows. On the basis of an axiological approach based on the essential nature of value, the interpretation of the concept of "competitive advantage" has been clarified and a generalized classification of the competitive advantages of an industrial enterprise has been developed. The determining role of a reasonable level of innovative competitiveness among other competitive advantages of an enterprise is proved. The proposed competitive strategy is a strategy of focusing the clientele, according to which the company uses its strengths, due to the available resources in those market segments where it has a competitive advantage. Proposals have been formulated for the implementation of a strategy for increasing competitiveness at an industrial enterprise based on the Lean Production system, in connection with which three types



of business processes have been identified: management processes (CP); main processes (OP); supporting processes (software). Their interconnections and interactions are shown. Process map OP-1 "Contract analysis. Marketing" was developed using the PDCA "Plan-DoCheck-Act" cycle for the enterprise under study. The presented conclusions and recommendations can serve as a basis for further research in the field of theory and practice of managing the competitiveness of an industrial enterprise, and have also been tested in other industrial enterprises in the formation of their strategies to increase competitiveness.

Given that the definition of a business model relies on the concept of "routine", which is also considered as operational capabilities, the concept of competition based on a business model is complementary to the concept of dynamic capabilities. Creating conditions for extracting economic benefits in the 21st century requires the management system to respond quickly to market changes, innovation and maximum proximity to customers [4].

Summarizing the provisions of the concepts discussed above, we can draw the following conclusions regarding the sources of enterprise competitiveness that are "inside" it:

1. The internal source of competitive advantages are the specific properties of the enterprise management system, manifested in operational and dynamic capabilities, business models, or a combination of them.

2. The functional areas of management that have the potential to be a source of competitive advantages include logistics, strategic management and marketing. The opportunities they provide to create a competitive advantage at any given moment are largely determined by the characteristics of the assets and the development path that the enterprise has adopted or inherited.

The development trajectory is understood as aspiration, which is a consequence of the presence or absence of the factor of increasing income, the choice of strategic alternatives available to the enterprise and the accompanying trajectory dependencies. The competition between technologies is under the influence of the factor of increasing incomes. The increase in income due to the adoption of new products by the market enhances the trajectory dependence of the development of the enterprise. This phenomenon is characterized by the fact that technologies and products based on these technologies become more attractive to the enterprise as they are more and more accepted by users.

The investments made impose restrictions on the future behavior of the enterprise. The assessment of resources/capabilities is made in terms of their value, rarity, difficulty of copying, possibility of deriving economic benefits. Particular attention is paid to the management of human resources, finances and organizational knowledge.

3. Competitive strategy from reactive (i.e., dependent on the actions of competitors) becomes pro-active, therefore, in each functional area, the ability to develop a timely response to a change in the serviced need, as well as rapid and flexible innovations, develops. From this it follows that when assessing the competitiveness of an enterprise in each functional area of management, it is

necessary to identify the ability to obtain information from the external environment, coordination / integration, training, transformation / reconfiguration.

Internal and external organizational processes and incentives demonstrate a high degree of coherence, so the efficiency and rationality of enterprise coordination can act as its distinctive feature, providing a strategic advantage. When this is the case, the reproduction of organizational processes will be difficult, since it requires a systemic change in the organization, its business model. Partial imitation or reproduction of a successful model by another enterprise may bring zero benefits.

The processes of collecting and processing information, coordinating the interests of customers and product developers, interacting with suppliers and intermediaries are examples of specific organizational coordination processes that provide differences in the results of activities of different enterprises.

Learning is the process by which organizational skills are created and disseminated to solve problems better and faster. The learning process is social and collaborative in nature, and therefore requires generally accepted methods of communication and coordinated procedures for finding successful examples.

Individual skills are assessed for their application in specific organizational situations and are transferred both through imitation and competition and through collaborative efforts to understand and solve complex problems. The organizational knowledge thus gained is anchored in new ways of doing things or in a new vision.

The potential for reconfiguration and transformation is itself an organizational skill acquired through training. To successfully adapt to a changing external environment, an enterprise must be able to recognize the need to reconfigure assets and implement the necessary internal and external transformation. Since change is costly, an enterprise must be able to recognize the need for change and reconfigure and transform ahead of the competition.

4. An external source of competitive advantage is the relationship that is formed by the enterprise when interacting with consumers and other market participants.

Thanks to external sources, reputational, market and institutional assets of the enterprise are formed, however, they reflect the result of the specific abilities of the enterprise in interacting with customers, suppliers, intermediaries (intermediate customers) to a greater extent.

Therefore, when assessing the competitiveness of an enterprise, it is necessary to consider such a functional area as relationship management.

5. The sustainability of competitive advantage is determined by the possibility of its reproduction and imitation. Replication involves the transfer or transfer of competencies from one particular economic setting to another; the reproduction of competencies is difficult because it cannot be achieved by simply transferring information.

Because productive knowledge is built into the organization, communication ensures that core competencies are reproduced only when all relevant knowledge is fully understood. This is not so common, many sources are implicit or so complex that the enterprise itself does not understand them. Replication may also be hindered

by the fact that some competencies are associated with regional or local forces. There are examples of businesses replicating their capabilities in settings where they are unacceptable (Nestle's use of developed country baby food marketing techniques in third world countries).

Imitation means reproduction by a competitor. The same factors that make reproduction difficult also make imitation difficult. Therefore, if the competence is characterized by implicit productive knowledge, imitation may not be possible. As an obstacle to imitation, there is a system of intellectual property rights that protects explicit productive knowledge in a formalized form.

6. Competitive advantages can be classified according to appropriability of economic benefits/difficulty of imitation – strong appropriation advantage (hard to imitate) and weak appropriation advantage (easy to imitate). The sign of persistence over time, used by many authors, does not quite adequately reflect the properties that ensure the preservation of competitive advantage in retrospect. The persistence of the advantage over time is ensured by its difficult to copy.

7. Competitive advantages can be classified on the basis of inertia. Not all benefits can be generated in a limited time frame. For example, the benefits associated with reputational assets take a long time to develop. Other advantages, for example, in the field of information technology, are created quite quickly.

8. Competitive advantages can be classified according to the clearness of ownership. Many sources of competitive advantage are so complex that the enterprise itself is not aware of their presence [17, p. 167]. Many organizational capabilities are by their very nature rather implicit, or their commercial value has not yet been recognized. For example, a combination of resources is used that allows the enterprise to function, but the enterprise does not realize the prospects of its market use. The problem of managing the competitiveness of an enterprise, as a result of the presence of competitive advantages, has worried and continues to worry more than one generation of scientists. At present, many scientific approaches to managing the competitiveness of an organization have been formed, starting from the classical scientific schools of the twentieth century, where the management of competitiveness has not yet been singled out as a separate category, and ending with modern research, where the concept of competitiveness in management theory and practice is assigned a dominant role. The effective functioning of management systems of organizations (enterprises) in a competitive environment should be ensured by technologies and methods of a sufficient degree of formalization, models of management decisions and practical measures, confirmed by scientific justifications and recommendations [2].

The basic principles of understanding the term "competitiveness" are the following:

- can appear only in the market;
- the concept of "competitiveness" can be extended to the object of market relations - goods, services, and the subject -enterprises, industries, countries;
- takes into account the quality of goods (services) both on the part of the producer and on the part of the buyer;
- the competitiveness of the manufacturer is determined by economic,

technological and other parameters, as well as its share in the free market;

- the competitiveness of objects and business entities has a dynamic, constantly changing state;

- Competitiveness is governed only by competition in a particular market.

In the broadest sense, competitiveness means the ability to win the competition. In the case of the economic sphere, in its most general form, it is the possession of properties that create advantages for the subject of economic competition. Competitiveness is a multilateral economic category that can be considered at different levels, because the subjects of competition can be different in nature objects: goods, enterprises, industries, individual countries. Next, it is necessary to define the concept of "competitiveness", what we will understand and in what aspects to consider this category.

In most cases, competitiveness is studied only in terms of the influence of market and production factors, but is not considered on the other hand - the reverse effect of competitiveness on the production activities of the enterprise.

This view requires the study of competitiveness from the standpoint of general management theory, ie. consideration of competitiveness as a management object affecting the internal state of the enterprise. Consideration of this category from this point of view will turn it from a dependent object into a manager, which in turn will provide a basis for creating methods and tools for rapid adaptation of the enterprise to changing market conditions. The status of competitiveness as a management entity is confirmed by the fact that it must cover indicators that reflect both external and internal factors. As an indicator of the company's market position and financial condition, it can be used as a sensor of management actions that can be used to influence various aspects of the enterprise, including the impact on one of the most important components of the enterprise - working capital.

Under the management of competitiveness, we mean a constant, systematic, purposeful process of influencing factors and conditions at all levels, ensuring the creation of products of optimal quality and its full use. Competitiveness management is considered as a corrective process of formation of production and consumption of products in order to bring an already competitive product to the market and reduce the influence of random, local and subjective factors.

Competitiveness management can be considered as an organic part of the overall production management and one of its branches of the goal tree. From this definition it follows that the final stage of production of competitive products provides for the direction and regulation of all stages of the life cycle: technical preparation of production; input control; organization, motivation and remuneration; accounting and financial activities; quality control of work and products; after-sales service in operation.

It is necessary to single out the main tasks of competitiveness management: study of the sales market; study of national and international requirements for manufactured products; development of methods and means of influencing the processes of research, design and production; collection, analysis, storage of information about product quality. Management is based on the following interrelated

categories: object, subject, goals, strategy, tactics, strategic policy, functions, methods, means, etc. The essence of control lies in the development of control decisions and the subsequent implementation of the control actions provided for by these decisions on a specific control object.

When managing the competitiveness of an enterprise, the direct objects of management, as a rule, are the processes on which the quality of products, the personnel of the enterprise, financial resources, and production capabilities depend. The development of one or another control decision depends on the correspondence between the actual state of the process and its characteristics specified by the control program. The subject of management is the governing bodies of all levels and responsible persons, designed to ensure the achievement and maintenance of the planned state. The purpose of competitiveness management is to ensure the release of products that meet the specified requirements of competition in the market while minimizing costs, taking into account the interests of the consumer and the requirements for safety and environmental friendliness of products. Competitiveness objectives are translated into performance indicators for the relevant processes. The achievement of these goals is managed on the basis of the plans of the departments implementing the processes, by establishing performance and (if necessary) efficiency indicators in these plans.

To ensure the greatest efficiency of the organization of the management process, a strategy is developed, the responsibility for the development of which lies with middle managers. Along with the strategy, tactics for managing the competitiveness of the enterprise are being developed. Tactics is a purposeful activity that increases sales through the sale of competitive products (per employee).

Competitiveness goals to improve customer satisfaction. Technical competitiveness indicators and measures to achieve them. Indicators of competitiveness in terms of economic aspects and measures to achieve them. Indicators of competitiveness in terms of the implementation of contracts and measures to achieve them are determined for the short term. Tactics determines the ways that ensure constant approximation to the specified quality parameters. The policy in the field of competitiveness is one of the constituent elements of the general policy of the enterprise.

There are several main factors that most influence the formation of a policy in the field of enterprise competitiveness:

- competitiveness of products;
- fight against competitors;
- the possibility of implementing advanced technologies;
- situation in the sales market;
- the state of affairs within the enterprise;
- investment within the enterprise.

The implementation of many of these areas and their interaction is decided by the competitiveness management system.

The competitiveness management system is developed taking into account the specific activities of the enterprise and ensures the implementation of a certain policy

in achieving the goals set. The scope of the competitiveness system should correspond to the objectives and goals of competitiveness. Thus, the competitiveness management system of an enterprise is a way of organizing effective interaction between managing and executive departments and specific individuals involved in the creation, manufacture, use and service of products in order to give them properties that ensure the satisfaction of certain needs and consumption requests with a minimum expenditure of all types of resources and funds. Each of the approaches includes various techniques, technologies, methods, observations, recommendations for managing the competitiveness of enterprises. However, in our opinion, these approaches are not a simple set of prescribed guidelines, but rather a way of thinking aimed at determining the best ways to solve managerial and organizational problems.

The system approach consists in considering objects as multicomponent systems, representing a set of interrelated and interacting elements that contribute and influence the result of the functioning and use of the object.

The essence of the innovative approach to management lies in the orientation of the development of production towards the intensification of innovative activity in the field of basic science-intensive technologies, which are the engines of the development of the production system. Factors of production and investment should be the means of science-based innovation, not its end. When applying an integrated (interdisciplinary) approach, technical, environmental, economic, organizational, social, psychological aspects of management and their interrelations should be taken into account. If one of the aspects of management is overlooked, the problem will not be completely solved.

The global approach is implemented through the development of new information technologies, which has greatly simplified international integration and cooperation. In this regard, the solution of most management problems must meet the requirements of consistency, consistency, and complexity within the global community. The marketing approach provides for consumer orientation of the control subsystem in solving any problems. When applying the marketing approach, the priorities for choosing management criteria will be the following: improving the quality of the object in accordance with the needs of consumers; saving consumer resources by improving the quality of products, services and other factors; saving resources in the production process through the implementation of economies of scale, scientific and technical progress and improvement of the management system.

The essence of the exclusive approach to competitiveness management lies in the acquisition by the subject of management of the exclusive right to use, at its own discretion, an innovation in any field of activity or a competitive advantage. The object for the implementation of the exclusive approach are: competitive personnel, patent, trademark, new information technologies. Exclusive value can be formed through the use of modern scientific approaches, methods and technologies for managing various objects.

The process approach considers management as a set of basic management functions: organization, planning, motivation and control.

A structural approach to the problem of managing competitiveness is to

determine the importance of priorities among the factors of competitiveness in order to establish the rationality of the ratio and increase the validity of the allocation of resources. Before applying the structural approach, it is necessary to structure the problem, to identify the elements that form this structure.

The situational approach focuses on the fact that the use of various management methods is determined by a specific situation. Since the number of factors influencing the organization is large, there is no single way to best manage the facility. The most effective in a particular situation is the method that is most suitable for this situation.

The behavioral approach is based on helping the employee to realize their own capabilities and abilities based on the application of the concepts of behavioral sciences. The goal of this approach is to increase the efficiency of the organization by increasing the efficiency of human resources.

The logical approach is based on the principles of dialectical and formal logic as the science of thinking and the mathematical and logical basis of economic cybernetics and informatics [7, c. 328].

Reproductive-evolutionary is focused on the constant renewal of the production of an object to meet the needs of a particular market with lower (compared to the best similar object in this market) total cost per unit of useful effect.

Integration is aimed at researching and strengthening the relationship between: individual subsystems and components of the competitiveness management system; subjects of management horizontally - stages of the life cycle of the object of management (strategic marketing, organizational and technological preparation of production, production, etc.); vertical management levels (global community, country, region, city, firm, its subdivisions). Virtual - is based on the implementation of links of control actions through integrated and local information systems and telecommunications, which allows you to create virtual organizational structures with geographical dispersion of participants.

The idea of a standardization approach is implemented, firstly, by choosing the optimal ratio between standard and individual solutions in the formation of objects, and secondly, by developing and implementing a system of standards of the corresponding category.

The essence of the functional approach is to consider the need as a set of functions that must be performed to satisfy it. Functional cost analysis serves as a tool for applying the functional approach.

The normative approach consists in establishing management standards for subsystems and important elements of the management system. The directive approach is based on methods of coercion, which are based on a system: legislative acts of the country and region; normative-directive and methodical (mandatory for application) documents of the company and the higher organization; plans, programs, tasks.

Optimization - consists in the transition from qualitative to quantitative assessments using the methods of research operations, engineering calculations, economic, mathematical, statistical methods, etc. The application of the business

approach is based on knowledge of previous scientific approaches and taking into account the cultural and psychological characteristics of the individual. It is largely based on the code of honor of a business person and generally accepted principles of doing business [2].

The classification of various approaches to competitiveness management could be continued, but those considered above give sufficient reason to conclude that the methods and technologies used within the framework of individual approaches not only complement each other, but sometimes overlap or overlap. This does not detract from the value of each of them, but indicates that the variety of management systems and tasks correspond to different ways of their formation and study, formulation and solution. At the same time, it should be noted that, in our opinion, the marketing approach in combination with a systemic and process approach is fundamental for the formation of a system for managing the competitiveness of an enterprise in the conditions of developing competition.

Competitiveness of Ukrainian enterprises in the dynamically developing world market is currently a key problem for Ukrainian enterprises to enter the world economic community. in the framework of dumping or illegal agreements.

Less than 1% of Ukrainian goods and services are recognized as competitive on the world market. In addition, the outdated production base of most Ukrainian enterprises does not allow them to produce products, the quality and level of costs meet international standards. It would be archival to assume that after Ukraine's independence, it will be welcomed in international markets with open arms. Entering the world economy has been painful. The shaky Ukrainian economy has joined the trade race as a clear outsider. And the situation is still not in our favor, because, unlike the countries of Central and Eastern Europe, Ukraine still remains an exporter of mainly raw materials and semi-finished products. That's why we have to catch up with rivals on the tortuous sine wave of world raw material prices.

The process of capacity assessment is considered as a procedure for expert modeling of poorly formalized fragments of the description of the problem situation. The proposed method is based on data from standard reporting and the use of methods for organizing expert assessments to build a mathematical model of multicriteria selection.

Today, in conditions of uncertainty of the external environment, every company wants to consolidate its position in the market and develop successfully. To do this, it tries to maintain for a long time some of the advantages it has achieved in a competitive market. In a competitive market, competitiveness acts as a means, and competitive advantage acts as a result. On the one hand, competitiveness is the ability to meet the needs of consumers and make a stable profit. On the other hand, the competitiveness of an individual enterprise in a particular segment of the commodity or regional market acts as a generalized assessment of its competitive advantages in terms of resource potential, quality of consumer demand and thus achieved efficiency of the economic system. ]

An urgent problem of modern domestic theory and practice of the enterprise is the management of its competitiveness. International competition, globalization of



markets, large-scale penetration of foreign goods into the Ukrainian market make the problem of managing the competitiveness of the enterprise among the priority management tasks, the successful solution of which will ensure the survival and development of enterprises in the new environment.

The low competitiveness of the potential of producers of goods and services is due to a number of factors.

First, Ukrainian products are extremely energy-intensive due to the depreciation of fixed assets and outdated technologies. Ukraine's GDP consumes 5.5 times more energy than the countries of Central and Eastern Europe, and 12 times more than the countries of the Organization for Economic Cooperation and Development.

Second, meager domestic demand sharply limits the use of available production capacity - resulting in increased unit costs.

Third, many large enterprises keep on their balance sheets huge mobilization capacities and objects of the social sphere (kindergartens, houses, hospitals, sanatoriums, etc.). This increases the cost of the final product. Therefore, it is not surprising that the prices for certain types of Ukrainian products are 30-70% higher than the prices of international markets.

Fourth, existing export financing schemes are still far from perfect. High interest rates on the credit market of Ukraine, limited access to "long" loans lead to the fact that for Ukrainian exporters financial resources today are 6 to 10 times more expensive than for their Western competitors.

Fifth, the efficiency of enterprise management clearly does not meet the standards of modern management - a convulsive adaptation to the current economic situation replaces the long-term development strategy. It is still difficult to talk about effective mechanisms for promoting products on foreign markets, diplomatic and political support for our exporters due to limited resources. Plus, an extensive network of sales and service centers abroad is almost non-existent.

Today, many Ukrainian companies seek to restructure their business processes. At the same time, it is important to objectively assess the real state of enterprises in their production and economic environment, as well as the potential opportunities of enterprises to implement the directions of its development. To assess the company's ability to fulfill the expected portfolio of orders, it is necessary to obtain a qualitative assessment of the enterprise, based on a comprehensive analysis of the enterprise, which will help identify critical points, choose an effective direction of restructuring.

When conducting a comprehensive assessment of the potential of the enterprise it is necessary to perform the following stages of analysis of its activities:

1. Defining the model of production - management activities. This is a representation in theoretical - set and graphical form of the basic elements and their relationships, in order to identify processes and their structuring.

2. Defining the goals of the management process. At the same time it is necessary to consider possible ways of achievement of the purposes.

3. Determining the success factors of production - management activities.

4. Determination of indicators for assessing the potential of the enterprise. The

selection and determination of indicators for assessing the potential of the enterprise, which characterize the production and management activities, are two aspects: goals and success factors.

The main components of the overall potential of the enterprise are:

- market potential (potential demand for products and market share occupied by the enterprise, the potential volume of demand for products, the ratio of enterprise and market factors of production);
- production potential (volume of production, opportunities for fixed assets, opportunities to use raw materials, etc.);
- financial potential (financial indicators of production, investment opportunities).

The components of the company's potential are assessed on the basis of a number of indicators that are interrelated. Potential indicators reflect the use of different types of resources in the implementation of certain aspects of the activities and management of the enterprise. Therefore, to assess the components of the potential it is necessary to consider the types of resources and aspects of the enterprise. After determining all the indicators of the components of the total potential, the task of their evaluation arises. There is a need to use weights that reflect their level of significance. The process of capacity assessment is considered as a procedure for expert modeling of poorly formalized fragments of the description of the problem situation. The proposed method is based on data from standard reporting and the use of methods for organizing expert assessments to build a mathematical model of multicriteria selection.

To objectively assess the potential of the enterprise, the subject of evaluation can use significant values of indicators. But most of these indicators may be interdependent, and some indicators are irrelevant for research purposes. Therefore, as a result of systematization of assessment factors, it will lead to a rapid assessment, which will identify the strengths and weaknesses of production - management activities.

Today, tough competition conditions force companies to look for new forms of organization in order to increase competitiveness.

To successfully manage the competitiveness of the enterprise must: - focus on the conditions and factors that shape it;

- improved competitiveness processes (planning, research, development, manufacturing);
- draw appropriate conclusions.

Structural restructuring of Ukraine's economy, focused on the use of intellectual resources and development of high-tech industries as opposed to material and energy-intensive industries, involves creating conditions for continuous updating of technologies and products, increasing education and improving governance through innovation based on the latest scientific knowledge.

Innovations here should be understood not only as new technologies, types of services, products, but also new organizational and technical solutions of production, administrative, financial and other nature, the lack of which not least determines the

low competitiveness of Ukrainian products. Despite the small scale of innovation, the positive impact of implemented innovations on economic performance is obvious: more than 90% of enterprises that implemented innovations were able to gain product growth, increase its competitiveness and expand markets.

The main causes of the innovation crisis are the lack of funds, the imperfection of the legal framework, as well as the so-called policy of non-interference by government agencies in innovation. Assessing the potential of certain sectors of Ukraine's economy to increase competitiveness allows us to identify key sectors and industries that should take a leading role in economic development, and eventually take key places in its structure.

For Ukraine, these are, first of all, the processing industries of the material production complex (metallurgical, chemical, construction materials), science-intensive and high-tech industries of mechanical engineering and defense technology, as well as light and food industries. Many companies in these industries have already established themselves as competitive players in the foreign market, but their position there is not very strong due to domestic problems and fluctuations in the world market. Strengthening competitive positions in key industries can be achieved only with a significant increase in investment opportunities and the accumulation of innovation potential.

Despite significant losses of resources, scientific, technological and human resources and time, Ukraine still has prospects for achieving international competitiveness of the national economy, provided the implementation of its own strategy.

Among the priority areas of innovation in terms of increasing the competitiveness of Ukrainian enterprises in the modern world market should also be noted:

- 1) resource-saving technologies, new materials and energy sources;
- 2) increasing the competitiveness of engineering and radio electronics products, expanding their exports and occupying new niches in the world market;
- 3) import substitution of production;
- 4) information technology;
- 5) telecommunications and communications;
- 6) processing and storage of agricultural products;
- 7) environmental protection.

The developed method of comprehensive assessment of the state of the enterprise using the examination procedure can be used not only in strategic management in conditions of uncertainty, but also as an element of the procedure of diagnosis and forecasting the potential of the enterprise.

Ukraine's current position in the foreign market indicates a very low competitiveness of Ukrainian enterprises in the world, due to the raw material structure of Ukrainian exports. To increase the competitiveness of Ukrainian products, the state needs to become an active participant in the global technology market. Ukraine remains a technological power, and its scientific and technological potential can be a major factor in overcoming the crisis. To do this, the state must

adopt and implement a new innovation policy based on the supremacy of STP in economic development. The activities of enterprises themselves in the field of innovation should be based on intersectoral technological exchange and venture investment in new progressive developments

The transition to a new stage of innovation development is impossible without an innovation policy that could ensure the creation of a favorable innovation climate in Ukraine, necessary for successful investment in the Ukrainian economy.

Such a policy should combine science, technology, production, consumption, the financial system, education, and should focus on the use of intellectual resources, the development of high-tech industries, and the priorities of the economy. The overall effect of this for the country as a whole will be much greater than for an individual company or producer.

As the main directions of the state activity in the system of support of realization of achievements of STP at the enterprises it is necessary to allocate, first of all, the following: development of insurance system of innovative projects; development of information system on advanced technologies and the state of their markets; implementation of venture projects; qualified engineering, consulting and auditing; encouraging enterprises to pursue a global strategy for development prospects, efficiency, competitiveness and export expansion; continuous development and improvement of infrastructure - transport, telecommunications, communications, education, health and science. In addition, it is important to create an appropriate level of standardization, metrology and certification, an effective patent system that protects the rights to the results of intellectual work.

The mechanism for implementing innovative areas also involves the use of various regulators: preferential taxation in the scientific field, subsidies, preferential long-term lending to developers and consumers of scientific and technical products, stimulating the work of scientists, training. An important aspect of the state's innovation policy is the development of scientific and technical cooperation with foreign countries. In addition, it is necessary to establish an effective intersectoral exchange of innovations within the industrial complex of Ukraine. It should be taken into account the fact that such an exchange provides more than 60% of applied technologies in developed countries. To follow the world scientific and technical thought, to catch trends in the field of new technologies, to predict both close and more distant trends in the innovation process - this is primarily the work of manufacturers themselves, closer to their field of activity than the state.

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#### **4.4. PROSPECTS FOR THE USE OF BLOCKCHAIN TECHNOLOGY AND CRYPTOCURRENCY VIRTUAL ASSETS IN THE INSURANCE MARKET**

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Summary. Prospects for the use of blockchain technology and the use of virtual assets, as well as the regulation of cryptocurrency in the insurance market are considered. The cyber risk insurance market is analyzed. The main trends and the most important directions of development of the information sector of the digital industry are identified. A study of the legislative regulation of underwriting and insurance protection of risks on the cryptocurrency exchange was conducted. The scope of use of blockchain assets as a financial instrument of the stock exchange has been established.

**Keywords** : blockchain, bitcoin, virtual assets, transaction, insurance, cryptocurrency

Over the past 5 years, blockchain technology has been rapidly spreading in the insurance market - it is a shared, immutable ledger designed to record transactions, account for assets and build trust relationships. Recently, financial technologies have been developing rapidly, within which Blockchain began to be used. Basic research by leading scientists is underway to determine essence of cryptocurrency,

opportunities to use blockchain technology as an innovative business process technology in the economy. The research of this problem is devoted to the works of such scientists as Melnichenko O.V., Korneev V.V., G.M.Tarasyuk, but the question remains debatable and unresolved, in particular, in terms of opportunities and risks of using cryptocurrencies and blockchain technology in the field of insurance. Recently, many domestic and foreign companies have devoted their works to the study of blockchain technology. scientists and practitioners such as: S. Bila, D. Bryzgalov, N. Bricheeva, R. Vakulin, M. Datsko, A. Zhmurkevich, I. Kiselyov, O. Makovoz, T. Perederiy, V. Tkachuk and others, who mostly considered opportunities and prospects for the application of blockchain technology in various fields of human activities.

This technology has been used not only in digital financial systems, but also in other sectors of the economy for several years. Moreover, programmers, financial analysts, and economists agree that the prevalence and demand of Blockchain will grow in geometric progress. The most optimistic experts even say that this technology is one of the most important inventions of mankind after the creation of the World Wide Web. Many domestic and foreign scientists and practitioners devoted their works to blockchain technology research, who mostly considered the possibilities and prospects of using blockchain technology in various spheres of human activity. In addition, blockchain is a software product, which allows you to store any data using the Internet in a secure and transparent way, without having a central government body [4],and avoids intermediaries in financial, economic and economic activities. The basis of blockchain technology is in distributed storage of information, which allows storing open and safely important information simultaneously on many servers.

Schematically, blockchain technology is shown in Fig. 1

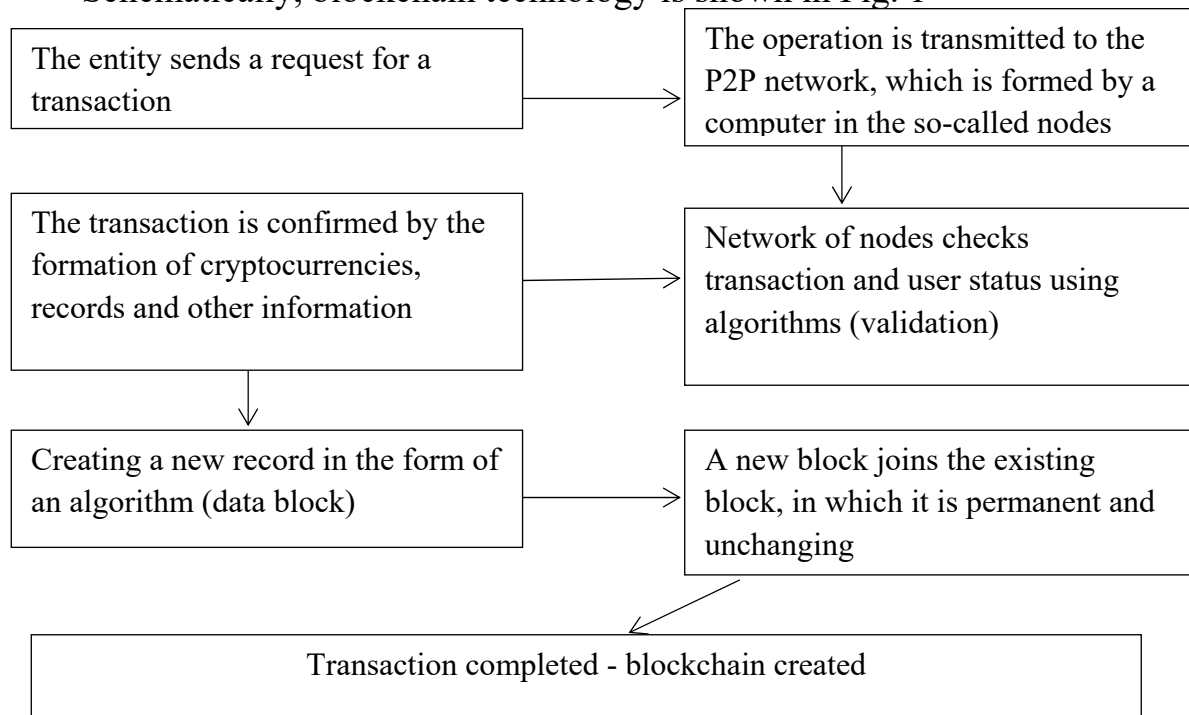


Fig. 1. Scheme of blockchain technology [4]

Creating a new transaction confirmation data block may include cryptocurrencies, contracts, records or other information. Subject sends a request for transaction Transaction completed New block joins the existing chain, the blocks in which it is a constant and unchanging. Validation – a network of nodes checks the transaction and user status using well-known algorithms. The operation is transmitted to the P2P network, which is formed by computers called nodes. Blockchain technology is one example of such innovations, the use of which allows reducing the time spent on individual business processes of the insurer reduce the degree of risks of insurance and financial transactions, as well as ensure a high degree of trust between partners in conditions of maximum transparency. Now this technology is a database for faster exchange of information with a high degree of protection, that is why financial institutions are interested in using it. The table presents the views of researchers on the essence of the concept of «blockchain».The use of blockchain technology in the insurance business allows not only to optimize operations, but also to effectively build relationships with partners (other insurers, reinsurers and their associations, banking institutions, travel agencies, companies that lease housing, cars and equipment, medical institutions, vehicle maintenance stations, etc.) and state authorities. Blockchain technologies have the following properties [8]: the use of cryptocurrencies (there are more than 2000 types, the most common is bitcoin);availability of computing infrastructure; use of the transaction platform; use of decentralized database; availability of distributed registry; application development platform; open source software; trading platform of financial services; P2P networks; trusted server infrastructure. In addition, using blockchain technology as a public database of all transactions ever made on the Bitcoin system allows each blockchain user to know how much Bitcoin belonged to any particular recipient at a given time. Prospects for the use of blockchain technology in the field of insurance are possible in the following areas:

- certification of agreements without intermediaries and the implementation of electronic accounting;
- making payments and remittances faster and with a lower fee (especially in incoming and outgoing reinsurance transactions);
- increase the level of cybersecurity of the insurer by checking the data received (transmitted), which is a guarantee of reliability (authenticity) of their sources of origin and prevent the interception of information at an intermediate stage;
- participation in trading on stock exchanges, in making investments in various types of securities, defined as assets that can be represented by insurance reserves;
- implementation of the mechanism of individual microinsurance, in which the blockchain acts as a third party (guarantor);
- obtaining certificates and other documents, confirming the fact of the insured event, from the competent authorities (police, medical institutions, etc.) and companies that provide various assistance services (medical, technical, legal);
- decentralized use of cloud storage for data storage. The classic insurance business model, which is influenced by digital innovations, is gradually being transformed into an innovative business model based on innovative products and innovative coverage,



which can potentially be transformed into an innovative breakthrough implemented through two methods: digital and insurance innovation. . In addition, the evolution of insurance products is quite confident: from traditional to innovative, digital and online. Such restructuring is observed in different directions: by types of risks, by types of products, by sales and distribution channels, by target audience, etc. Thus, the usual property insurance against damage caused by fire, theft and intrusion, turns into insurance of "smart homes" using sensors and warning systems. The insurance innovative business model requires the insurance company to innovate insurance products with the principle of payment per use (Pay per Use), which will provide customers with a paperless service, and will offer new distribution channels. Standard distribution channels (agents, call centers, specialty products, sales and service) will be gradually supplanted by innovative (direct Internet channel, mobile technologies) switches to "smart home" insurance using sensors and an alarm system [16, p.178].

Distributed Registry (DLT) technology means that all network members have access to a distributed registry and a fixed transaction record. The common registry implements a one-time transaction record, in addition to the duplication of effort typical of traditional business networks. Once the transaction has been recorded in the general register, none of the participants can change or falsify it. If an error is detected in the transaction record, a new corrected transaction must be added, and both transactions will be visible. A set of rules (smart contract) is used to speed up transactions, which is stored in the blockchain network and is executed automatically. A smart contract can determine the terms of the transfer of corporate bonds, add criteria for the payment of travel insurance and much more. Anyone can join the public blockchain network (Bitcoin). Disadvantages of such a network include high computing power requirements, low transaction confidentiality, and weak security. These criteria are important when using blockchain in corporate environments. The private blockchain network, as well as the public blockchain network, is a decentralized peer-to-peer network, with the significant difference that the network is managed by one organization. This organization determines who can join the network, execute the consensus algorithm, and administer the shared registry. Depending on the scenario of use, this approach can significantly increase the reliability and reliability of information transmitted between participants. A private blockchain network can be behind a corporate firewall or even in a local environment. Responsibility for blockchain administration may lie with several organizations. These pre-selected organizations establish access rights to execute transactions or access data. A blockchain consortium is an ideal solution for companies where all participants have permits and are collectively responsible for the blockchain.

The Verkhovna Rada passed the bill «On Virtual Assets» in the first reading. Prior to the second reading, the document changed, but financial regulators criticized the updated bill. Subsequently, the text was updated again to take into account the comments, and the Committee on Digital Transformation recommended that the bill be adopted. Due to the unregulated financial market, all financial transactions with assets are in the shadows. Because of this, international exchanges cannot enter

Ukraine. No transaction is taxed. Thanks to the adopted law, such issues will be resolved. Conditions will be created that will allow the budget to receive taxes and entrepreneurs to feel protected. Also, the adoption of the bill will allow companies operating with such virtual assets to register in Ukraine. In total, three countries have legalized cryptocurrencies in the world, Germany, Luxembourg and Singapore, the minister added. The Ministry of Finance added that Ukrainian and foreign cryptocurrencies will now be able to officially operate in Ukraine. Banks will be able to open accounts for crypto companies, and income can be declared in virtual assets. In particular, companies providing crypto services will be required to disclose the ownership structure and conduct financial monitoring.

But the bill passed by the Council will not be able to launch the market of virtual assets in Ukraine. This will be possible after changes to the tax code, said the Ministry of Finance. "The adopted bill is basic. We are currently working on a bill to amend the Tax Code. It regulates the taxation of participants in the virtual assets market. After its adoption, we will be able to launch the virtual assets market." According to the document, virtual assets (VA) are recognized as intangible assets. They are divided into secured and unsecured. They are not a means of payment in Ukraine and cannot be exchanged for property or services. Market participants received the right to judicial protection of rights to VA, to open bank accounts for settlements on transactions with virtual assets, and independently determine and establish the value of virtual assets in the course of operations. They are also required to comply with anti-money laundering and anti-terrorist financing laws. The document introduces the definition of financial virtual assets, the issuer of which must be a resident of Ukraine. They can be backed by currency values - in which case the circulation is regulated by the National Bank, as well as securities or derivatives - are regulated by the National Securities and Stock Market Commission.

Uncontrolled proliferation of virtual assets, especially stablecoins, carries the risk of national currency substitution and parallel money circulation, which will negatively affect the National Bank's ability to pursue monetary policy effectively, ensure hryvnia stability and threaten the country's monetary sovereignty. The basic principles of monetary policy for 2022 and the medium term determine that in order to minimize risks, the National Bank will take a principled position on preventing the narrowing of the hryvnia as the only legal tender in Ukraine or creating opportunities to circumvent the current state regulation. For the first time, publications "NBU Policy in the Field of Virtual Assets Circulation" among other risks are, in particular, the risk of using virtual assets to circumvent current state regulation and supervision, for example, bypassing currency regulation and uncontrolled flow of capital abroad, which may increase threats to the stability of the foreign exchange market. The National Bank also draws attention to the risk of evasion from financial monitoring requirements in preventing and counteracting the legalization of criminal income, as well as the risk of the flow of part of bank deposits into virtual assets and the displacement of traditional banking.. Therefore, the National Bank of Ukraine within its competence intends to pay attention to monitoring and minimizing the risks of the spread of virtual assets for monetary policy and financial stability, as well as to

establish effective control over their circulation, the document says. At the same time, it emphasizes that currently, due to the limited prevalence of cryptocurrencies and their high price volatility, they do not have a significant impact on monetary policy and financial stability. The National Bank also recognizes that technological innovations related to virtual assets can open up many promising opportunities: improving access to financial services, increasing competition in the payment services market, and promoting investment. Therefore, the National Bank supports the need to create civilized conditions for the development of the virtual assets market in Ukraine [10, p.105].

It has recently been impossible to insure against losses and bankruptcies in the digital industry, but now it has become a reality. There are more and more companies that are ready to offer damages to the crypto market. In December 2017, The New York Times published a major article about bitcoin millionaires Winklevoss brothers. It revealed details of how two major investors are protecting their digital assets. Cameron and Tyler use only cold wallets, print the keys, then divide them into several parts, put them in envelopes and send depository branches around the country. This is just one way to preserve digital assets, which, however, does not guarantee 100% protection. Investors can be given great confidence that investing in cryptocurrency will not lead to bankruptcy. This is a new area in the digital industry, which is gaining momentum quite quickly. Previously, cryptocurrency insurance was of interest only to large owners of digital coins, those who had financial surpluses, they could be used to protect against potential risks. Today, the number of crypto market players has grown significantly, the volume of digital assets has increased many times. Therefore, not only cryptocurrency millionaires began to think about insurance. What can be insured in the digital industry The most popular and understandable, from the point of view of insurers, area - cryptocurrency insurance. Due to frequent hacks and large-scale hacking attacks, the founders of such sites are forced to look for ways to compensate for losses in the event of an emergency. After hackers withdrew more than \$ 40 million from the large Bithumb site, several South Korean exchanges united in a blockchain association. At the end of 2018, Upbit, Bithumb, Korbit and Gopax agreed to make account insurance a necessary requirement for the operation of cryptocurrencies within the country [4].

The Coinbase platform and the Gemini exchange have joined the US Federal Deposit Insurance Corporation's (FDIC) insurance system, which provides cash compensation of up to \$ 250,000 to each client in the event of a cryptocurrency platform shutdown. However, this program protects only the funds of US residents and does not apply to owners of "hot" wallets. Therefore, exchanges enter into contracts in parallel with several insurance companies to cover all risks. Last May, the actions of representatives of BitGo, which provides encryption services, were actively discussed. Specialists traveled to several countries and met with 75 insurers in search of the most profitable and reliable offer. The company bought the insurance in 2015, but a year later abandoned it due to unreasonably high prices. After numerous meetings with insurance agents, BitGo representatives said that most insurers are well versed in the digital industry, adequately assess the risks and ask

very specific questions. In addition to insurance of exchanges and cryptocurrency companies, another area would be in great demand - insurance against fraudulent actions of ICO organizers, but insurers have not yet been able to figure out how to avoid major risks in this situation. However, there are a few firms that are willing to insure ICO investments, but in a slightly different format. For example, there are projects that offer to hedge the risks of changes in the value of tokens after the ICO, ie, ready to insure investors against the fall of the new asset. Classic insurance in the digital industry is also gaining proliferation. In essence, these are the usual services of insurance companies, but using blockchain and smart contracts. Thanks to new technologies, companies are trying to increase the speed of insurance payments, make the process of regulating insurance cases more transparent and try to avoid paperwork altogether. However, the work of such companies has many nuances, mostly related to the law. Insurance companies have very strict regulations, as they are regulated by the Central Bank. Therefore, if insurers use smart contracts and refuse official documents, they will have to make payments from profits instead of the insurance fund, which is extremely unprofitable. But there is a way out of this situation: companies that do not use insurance licenses now offer their clients insurance instruments, but do not call them insurance [13].

Consider which companies offer insurance services. In June this year, one of the largest insurance brokers Aon formed a group of European insurers (company names were not disclosed) to protect against the risks of users of hot and cold wallets Metaco, a company specializing in digital asset storage. According to Aon, they cover almost everything. From natural disasters and breakdowns of "cold" storage to hacking online wallets. In 2018, Aon, according to the company's management, occupied more than 50% of the crypto insurance market. The names of such insurers in the cryptocurrency industry as Marsh & McLennan, Chubb, XL and the British insurance company Lloyd's of London are known. There are no large insurance companies specializing in digital assets in Russia yet, mainly due to the fact that the status of cryptocurrencies has not yet been determined. However, the issue of insurance of the domestic digital industry has been raised repeatedly. A popular cryptocurrency insurer in Ukraine is Cryptoins.io. However, she works in the country under the license of a foreign insurer. The user can insure in the company any cryptocurrencies stored on certain exchanges. If there are problems in the exchange and the investor cannot withdraw the cryptocurrency from the platform within 30 days, the company reimburses the losses. The B.Sure project works in much the same way: a trader acquires a digital coin on the exchange, then he can send a token to the B.Sure smart contract at any time and automatically insure his funds. The amount of the insured coin must be multiplied by 40 from the current price on that cryptocurrency platform, indicated by the investor. If the exchange closes or stops working, the funds will be automatically reimbursed in the amount that was in the account. The development of cryptocurrency insurance will largely depend on the actions of regulators and the status of digital coins in Russia and in countries where this issue has not yet been resolved. But sooner or later insurance must become a certain standard of quality, as has happened in the traditional financial market [5,

p.167].

One of the key problems for cryptocurrency owners and their heirs is the inability to access digital assets for technical (loss of code) or physiological reasons (death of the owner). The New York Times estimates that more than \$ 140 billion has been blocked in such cryptocurrencies by the beginning of 2021. Most often, not only his relatives but also his clients suffer from the sudden death of an investor operating in the cryptocurrency market. The most famous case is the death in 2018 of the founder of Canada's largest cryptocurrency exchange Quadriga CX Gerald Cotton, as a result of which 115 thousand customers lost access to their funds. "Renaissance Life" Insurance Company has signed a cooperation agreement with the founder of the Independent Decentralized Finance SmartBank & Ecosystem (InDeFi SmartBank) businessman Alexander Lebedev. The InDeFi SmartBank project envisages the development, implementation and provision of a customer death confirmation service and the use of such information to implement the mechanism of inheritance of digital rights and assets. Based on the intentions of the parties, InDeFi SmartBank will undertake the development of smart contracts and launch the inheritance procedure. This will allow the customer in case of death to transfer the disposal of their digital assets to the beneficiary specified by him. "Renaissance Life" Insurance Company, in turn, will act as an "oracle" to confirm the death of the client. The unique cooperation of the insurance company, which has a high reputation and trust among customers, with the DeFi project should solve one of the main problems of the modern crypto industry. Expected that the number of users of this service will be at least 500 thousand people in the coming year. The Opium Protocol's DeFi project has integrated rental insurance for real estate purchased in parts on the RealT platform, the project said. RealT is a progressive technology platform that offers investors the opportunity to buy real estate in parts on a blockchain basis. For about \$ 50 you can buy one token (or as much as you want to invest) property. Investors are then paid a percentage of the tenant's rent, depending on their investment in the USDC through Ethereum or the xDai network. Ethereum-based Opium Protocol is a decentralized protocol hosted on the Polygon network. One of the main options for using Opium is protection (decentralized insurance).

Currently, all real estate, offered by RealT is insured by standard insurance to protect it from property-related disasters such as fire and water damage. What is not insured is occupancy (monthly rent). For example, in the event of a fire, repairs and renovations can take three months. Repair costs are covered by property insurance; but if the tenant has to move, he does not pay the rent during that time. This means that the rent will not be allocated to this property during these 3 months. Insurance offered through the Opium protocol will continue to distribute rent payments when the tenant does not pay. Opium protection provides RealT cash flows. To take advantage of the offer, the user must block the insurance premium in the smart contract, which is calculated based on the value of the share in the property. In case of interruption of lease payments, the protocol will continue to pay rent throughout the insurance period. Compensation for losses of users is provided by sellers (stakeholders), who contribute funds to the appropriate pools. If the lease payments

are interrupted, they are unable to obtain the assets and may lose all collateral. For accepting risks after the end of the insurance period, they receive a bonus and tokens that remain in the pool. The more stakes in the pool, the longer the break in the rent can be covered, and the lower the profitability of each participant.

The global cyber insurance market will reach \$ 20.6 billion through the pandemic by 2025. According to GlobalData, the cyber market has already reached \$ 7 billion in gross premiums as the COVID 19 pandemic forced companies to digitize processes and implement remote work methods.

In particular, the cyber risk insurance market recorded growth of 33.5% in 2020 and is expected to approach 27.3% in 2021. The cyber insurance market has been expanding rapidly in recent years, with customers enjoying high limits of insurance coverage, fixed rates and great opportunities as insurers sought to capture business in a highly competitive market. Despite lower coverage limits and increased premiums, GlobalData expects that the cyber insurance market will continue to grow until 2025 compared to the previous year.

The need for reliable cybersecurity and insurance is becoming apparent to businesses of all types and sizes as the time and severity of cyber attacks continues to grow. COVID-19 has also led to irreversible changes in the way businesses and consumers work: remote work methods will be retained, and consumer digital channels will be used more than before the pandemic. This steady shift in behavior will increase the demand for both commercial and private cyber insurance in the coming years. On the other hand, the loss of the cyber insurance industry last year jumped by 22% points to a record level of 67%. Analysts attribute this to an increase in the severity of claims under insurance programs, including increased costs of responding to incidents and claims. The studied segments showed the highest loss rates since the start of collection in 2015, at the same time, individual cyber-policies recorded an increase of 25.7 percentage points (from 47.1% to 72.8%), and package cyber-programs by 16.4 percent (from 42.3% to 58.6%) ). The increase in losses in 2020 is probably primarily due to the increase in the severity of claims, as the average payment increased by more than 50% from \$ 48,709 in 2019 to \$ 74,354 in 2020. However, the frequency of claims remained stable during 2020, averaging 5.62 claims per 1,000 policies compared to 5.61 claims in 2019 [2,3].

According to a study by the World Economic Forum The Global Risks Report 2021, cyber risks in recent years are firmly in the top five most obvious threats to business after infectious diseases, economic crisis and extreme weather events. Cyber risk protection programs, which are now offered not only by insurers but also by other tech companies, help protect businesses in the event of unauthorized debiting of money from the account and downtime as a result of a cyber attack. Insurance companies compensate for losses incurred within the insured limits. At the same time, the cost of an insurance policy that will help protect against various cyber risks is incomparably less than the potential losses of the company from cyber attacks. Cyber risks are becoming more real not only due to the organic growth of the use of digital solutions, but also because of the effects of the coronavirus pandemic. As a result of the pandemic, many companies have switched to remote operation and

remote channels of interaction with customers. Against the background of the related growth of cybercrime is increasing demand for cyber risk insurance. According to insurers, this trend will continue in the coming years, and in the future protection against these risks will become common practice for Ukrainian business [12, p.154].

According to the latest Global Insurance Market Index, published by reinsurance broker Marsh, world prices for commercial insurance rose by 15% in the third quarter of 2021. Analysts note the 16th consecutive quarter of growth, but the pace remains moderate in many areas of business and most geographic regions, suggesting that prices may have peaked in the fourth quarter of 2020 - 22%. Exceptions to this trend are the United States, where tariff growth has shifted from 12% to 14% between Q2 and Q3, and cyber insurance, where prices have risen much more than in other areas due to the growing threat of extortionate programs. . . In the US, prices rose by 96% compared to 56% in the second quarter, and in the UK by 73% compared to 35% in the second quarter, due to the frequency and seriousness of applications for extortion programs. «Although the risk and insurance situation remains difficult around the world, we expect tariffs in most areas to continue to decline», said Lucy Clark, president of Marsh Specialty and Marsh Global Placement. "However, the pressure on the cost of cyber insurance is likely to continue. Solution development in this segment remains a top priority. Rising prices in most regions slowed in the third quarter due to slower growth in property insurance and the responsibility of directors and officials (D&O).

The United Kingdom, where aggregate price growth was 27% (compared to 28% in the second quarter of 2021), and the Pacific region with a growth of 17% (compared to 23% in the second quarter of 2021) continued to determine the global composite rate. Growth rates in Asia were 6% (stable compared to the previous quarter), 2% in Latin America (down 4%) and 10% in continental Europe (down 13%). The only exception was the United States, where rates rose by 14% due to a significant increase in cyber insurance rates and a moderate increase in property and accidents. Cyber insurance is projected to grow because it has been largely lucrative for insurers and is considered by reinsurers to be insurable, despite the fact that ransomware attacks are accelerating, said participants in the 2021 Joint Industry Forum discussion. New York. The forum also called on governments to play a more important role in the cyber insurance sector, especially through a wider exchange of information. By 2026, insurers will receive \$ 28 billion in signed gross cyber insurance premiums. Insurers will continue to offer cyber insurance because it was generally profitable. Reinsurers are committed to the cyber sector and view risk as insurance. Aon sees that several new reinsurers are considering entering the market on a limited basis. According to her, reinsurers have also made some adjustments to the capacity, as they clarify their understanding of the sector. While cyber insurance has been lucrative for the insurance industry, rogue programs are very lucrative for attackers. We are seeing a significant increase in attacks using extortionist programs, because they are profitable, they are a good business for cybercriminals. Cybercriminals also use more automated methods, which increases the number of potential attacks and, consequently, damage. The government has more information

than any company and conducts intelligence operations that no company can match or reproduce. The government could play a role in these efforts by helping to create a central source of aggregate data. Actuaries need more information to make more informed decisions about cyber risks and underwriting [7,8].

Digital asset inflows fell 52 percent to \$ 88 million last week as crypto markets declined. According to a CoinShares report, cryptocurrency inflows for the week ended Dec. 10 were up from \$ 184 million the previous week. Bitcoin, the largest cryptocurrency, accounted for the bulk of the week's \$ 52 million inflow. Last week, Bitcoin funds had an inflow of \$ 145 million. Bitcoin has fallen 26% over the past 30 days, suggesting that investors continue to view price weaknesses as an opportunity to buy, but at a slower pace. For the first time in six weeks, Ethereum-focused funds, the second-largest cryptocurrency by market capitalization, witnessed an outflow. Ethereum's outflow last week was \$ 17 million. The CoinShares report notes that this week's inflow consisted of very mixed asset flows. Solana (SOL), a blockchain-based smart contracts platform, saw an inflow of \$ 17 million. SOL fell 35% from a month after reaching a record high in November. Tron (TRX) saw an inflow of \$ 15 million. According to the report, crypto funds focused on a multi-purpose blockchain platform now have a total asset management of \$ 92 million, which is higher than Cardano's \$ 68 million [11].

Wells Fargo and HSBC Bank said Monday they would use the blockchain-based product to address matching currency transactions. The two banking giants have agreed to use the general ledger to process transactions in US dollars, Canadian dollars, British pounds and euros with plans to expand the process to other currencies in the future. The blockchain-based settlement system uses HSBC's patented technology, built on CORE Baton Systems distributed registry technology, a HSBC spokesman said. The announcement comes as other major Wall Street banks, such as Goldman Sachs, reportedly seek to integrate blockchain technology into their regular processes. JPMorgan is also looking for software engineers to focus on «Accompanying Blockchain Tokening» and is expanding its Onyx division, which was set up to oversee the development of JPM, the bank's wholesale payment token [16, p.81].

Major players in technology and crypto-ecosystems are participating in a new blockchain-based standardization team. Six global corporations have teamed up to begin standardizing the IEEE Blockchain Identity of Things. The Institute of Electrical and Electronics Engineers (IEEE) is an international non-profit association of technical professionals, a world leader in the development of standards for radio electronics, electrical engineering and hardware for computer systems and networks. According to Dr. Xinxing Fang, Chair of the IEEE Working Group on Identification, researchers from Lockheed Martin, Ericsson, Lenovo, Huawei, Bosch, IoTeX and the Chinese Academy of Information and Communication Technologies are developing global standards for decentralized blockchain identification in a two-year effort back. After two years of research, six major global companies have presented proof of the concept of decentralized identification (DID) based on the blockchain for IoT devices, which Dr. Fan launched in 2019 with the World Wide Web Consortium



(W3C). IEEE is a non-profit organization that has developed standards for common technological needs related to wireless devices, networks and services. According to a press release, blockchain compatibility is critical to the success of the Internet of Things (IoT), people and businesses. It can promote global trade, economic development and the development of local communities around the world by removing technological barriers and enabling various organizations to interact with global standards [17, p.33].

Munich Re continues to see «favorable» prospects in the reinsurance market, with cyber risks, data analytics and artificial intelligence identified as the most important growth areas for the sector. Discussing the trend towards digitalization of the industry, reinsurer Munich Re said that future insurance would "radically change" traditional insurance. This will lead to the emergence of new areas of risk that require insurance solutions. Munich Re has already laid the foundations for profitable growth through its numerous digital and innovative projects. Identifying future trends and partnering with the risks of new technologies is at the heart of Munich Re's strategy, but cyber risk remains a major challenge and opportunity for the sector. The economic importance of cyber risks and, consequently, the demand for cyber insurance, will grow significantly in the coming years, especially due to the sharp rise in cyber so after the transition to telecommuting due to pandemic constraints. Given the growing number of losses, cyber insurance prices have risen sharply, and insurers have limited their capabilities, leading to a huge demand for insurance and service solutions. The growing number of ransomware attacks is seriously affecting the economy. The insurance industry is helping companies become more resilient to cyberattacks and reduce losses in the event of an incident.

However, some systemic risks can only be managed by the state in cooperation with the insurance industry. These risks range from terrorist or politically motivated attacks to cyber warfare and are largely covered by pools. Moreover, it is in the general interest to clarify the amount of insurance coverage through appropriate wording. For its part, Munich Re keeps growing losses from extortionist programs at a manageable level, thanks to the stabilizing effect of rising prices in a competitive market environment. Thus, the reinsurer adheres to its plan of profitable growth, based on the current market share of about 10%. Considering the wider possibilities of data analysis and artificial intelligence, Munich Re still sees the potential to optimize sales processes, interact with customers, settle claims and underwriting. The growing use of machine learning and artificial intelligence technologies in business has also led to a dynamic market environment with many new areas of risk and the need for new insurance solutions.

One of the promising areas related to digital technologies for insurers is the use of cryptocurrencies as assets for the placement of free reserves, and in the future, subject to their legalization, and insurance reserves [3].

The most interesting prospects of blockchain technologies are implemented in the insurance industry when working with customers and partners, which requires intensive constant exchange of large amounts of information (Table 1).

Table 1

## Application of blockchain technology in the insurance industry

Digital technologies	Content and its application
Smart contracts	Smart contracts are a set of program codes - triggers that are activated in the event of circumstances that require insurance payments. Smart contracts save a significant amount of time required for the analysis of insurance cases and prompt payments, and blockchain technology will ensure a sufficient degree of transparency for customers, government and supervisors.
Insurance telematics	The use of blockchain technologies in the analysis of insurance risks for car owners will allow in exchange for access to the history of fines, analysis of driving style and other factors to obtain an insurance product at the best price.
Register of protected data in health insurance	When translating medical data and registers into a blockchain format, the patient gets the fullest opportunity to control their own medical data and allow certain individuals and organizations to have access to them. Each patient will be able to control which medical facilities will have access to his or her medical history and to observe who uses this access and how. Thanks to blockchain technologies, such registers will be protected from hacking and data forgery. By being able to access this data, insurance companies can significantly reduce the cost of a health insurance policy for a client, because now the insurance company is forced to take the client at his word and make risks in the cost of the policy, or send him for medical examinations.
Internet of Things (IoT)	This technology involves devices to perform certain actions without human intervention. All devices in homes, cars, on the user perform information processing, analysis and exchange with each other, while remaining private. This will increase security and privacy when using devices connected to the Internet and, depending on the results, make decisions and perform certain actions.
P2Pinsurance	The technology is designed for customers who want to insure, unite in similar groups and form a general insurance fund from which payments will be made in the event of insured events. P2P insurance companies earn on the commission they charge for their services. The attractiveness of the service for the client is provided by the ability to return part of the funds intended for payments for insurance cases. The fewer insured events, the more money a P2P service client can return.
Microinsurance	In the implementation of individual microinsurance insurance services, blockchain acts as a third party (guarantor).

Thanks to the use of the blockchain in insurance it is possible to achieve:

- strengthening the interest of customers in insurance products;
- updating the list of services;
- increase efficiency, growth in developed markets;
- transition to digital technologies as following the world trend;
- cost reduction through process automation;

- creation of decentralized cloud storage with a high level of protection for data storage. Blockchain technology is able to bring innovative solutions that provide high speed, complete control and transparency to all sectors of the insurance market. Its introduction will bring about revolutionary changes for an industry that has not

changed for a long time. Thus, we can conclude that the development of the insurance market is increasingly dependent on the introduction of new technologies in the digital economy that affect the insurance industry. Thus, the blockchain already helps insurance companies save time, increase the transparency of insurance services, prevent insurance fraud, follow the rules and develop the best insurance products [6].

Let's consider three options for using the blockchain in the insurance industry. According to the FBI, insurance fraud in the United States costs more than \$ 40 billion a year. The good news is that insurance companies can improve their claims processing three times faster and five times cheaper using blockchain technology. Blockchain technologies have entered the international insurance market - large-scale projects have launched several major alliances. Blockchain has become popular in various industries. Its key advantage is the ability to secure the data stored in it. This information cannot be accessed from a single node, and the data is cryptographically protected. Therefore, the blockchain is much harder to break and make retrospective corrections. Today, the blockchain is actively used to exchange information, usually in multilateral business processes. Previously, in order to coordinate all actions and documents, each of the participants had to integrate into each other's information systems. Now it is enough to make edits in the link of a chain. A survey of about 143 American insurance companies, conducted by the American Association of Insurers and FICO, showed that insurance fraud accounts for 5-10% of all insurance claims. Blockchain using decentralized systems can reduce the share of such fraudulent claims to almost zero. One of the effective ways to ensure maximum security, ease of submission and processing of requirements for consumers is the use of a blockchain, which will help to seamlessly combine multiple data points from different sources (depending on location and analytics). This can lead to a significant reduction in the number of fraudulent claims. Insurance companies can connect to a distributed blockchain registry, which is responsible for distributing multiple streams of information and documents. This may include third-party reports, evidence from the scene, police comments, and so on. Some vital steps in filing claims can be fully automated. For example, an accident can quickly initiate the creation of a new settlement case, when sending signals to the medical support service or the police, everything happens at the same time [5]. Blockchain can simplify the processing of risk reinsurance data, as well as keep it in a distributed register. This ensures that reinsurers receive verified data in real time without any falsification due to the influence of third parties. Getting accurate real-time data is crucial, whether you're investing in stocks or making risky investments online. In other words, they can obtain data directly from the original source without the need to involve insurers. Blockchain technology also facilitates faster and more efficient allocation of capital to help meet future claims. In most cases, insurers deal with several reinsurers who may be interested in a single reinsurance contract. In this case, reinsurers are expected to exchange data with each other, which complicates operations and further complicates the reinsurance process. Smart contracts offer a quick solution to this problem. The problem of reconciling premium and loss transactions between the insurer and reinsurers is minimized (or eliminated) because the database will always

be up to date. According to several studies, the blockchain could halve operating costs by reinsuring the sector by \$ 5-10 billion. Some insurers, such as Allianz, AIG, Aegon and Swiss Re, are already implementing these innovations in the blockchain, forming the B3i corporate consortium. P2P insurance is not a new concept that has been used for a long time. Peer-to-peer insurance companies whose customers can directly influence the services they use. Such insurance companies do not have offices, marketing budgets or intermediaries, so the costs are lower. The principle of mutual insurance means that consumers of insurance services instead to pay for insurance to a professional corporation, they form a community and form their own mutual aid fund, from which payments are made to victims of adverse events. At the same time, the classic P2P insurance involves the absence of any intermediaries and the implementation of mutual insurance on a non-commercial basis. If in classic professional insurance in case of breakeven of clients all profits go to the insurance corporation, in P2P-insurance a positive result is either shared among community members (returned), or directed to the goals predetermined by the community. Development of smart contracts that will simplify damages due to bad weather conditions, which may cause property losses is one of the exclusive obligations of insurance companies. These contracts are designed taking into account all types of measurements, including weather readings and sensor data, depending on the circumstances.

The goal is to make these statements less subjective and reliable. Today, smart contracts are really smart because they are now fully used in the P2P insurance markets. Blockchain made this possible by ensuring that such high-tech insurers could collect higher insurance premiums compared to traditional insurance contracts. The insurance market has long been little interested in blockchain, other technologies were used to digitalize the business. It goes without a request to use smart contracts to automate the payment of insurance ins refunds and the creation of p2p platforms, on which insurance was carried out without intermediaries. However, the implementation of such projects faces a number of difficulties, and not only of a technical nature. For example, automation of insurance reimbursement payments should exclude unreasonable refusal of payment. But such cases are already automated. Then the question is how much blockchain is cheaper. The opportunities promised by the new technology made the introduction of distributed registlasses in the industry only a matter of time. For the insurance market, the fight against fraud is critical — the registration of insurance contracts retroactively. Here blockchain allows you to completely eliminate the possibility of forgery of documents by unscrupulous partners and agents. Swedish blockchain company Haidrun was founded in 2019 to develop the next generation blockchain technology. As a result, a corporate blockchain platform has appeared that combines powerful blockchain technologies of private distributed registry (DLT), with artificial intelligence (AI) mechanisms to ensure high transaction speed, security and scalability, interaction with existing systems and significant cost reduction.

The advanced features of the Haidrun platform reveal the real business advantages of blockchain and can be deployed locally or blockchain solutions as a

service. Haidrun's blockchain platform for insurers eliminates suspicious and repetitive transactions by reliably and chronologically registering each event, document or transaction. After checking the action, the data is cryptographically encrypted into data blocks and become unchanged, which allows you to verify the authenticity by providing records. Haidrun can also create personalized smart contracts for fast and secure processing of insurance claims, payments and reimbursement of expenses. Regarding insurance and re insurance, blockchain technology can provide accurate calculation of reserves based on current contracts, to provide a deeper understanding of how claims are paid. This ensures that high-precision data is received that help to insure and balance the risks of taking into account specific risks with a much greater degree of confidence. The Haidrun platform is a flexible and scalable private blockchain without open source, built on advanced architecture, using artificial intelligence mechanisms. It eliminates most of the complexity of public blockchain, and unlike public blockchains, where there is no responsible person and everyone can interact with the blockchain, private networks retain control, eliminate illegal activities, ensure a high level of regulation and avoid variable costs and performance fluctuations associated with public platforms, the company said in a statement.

Starr Insurance and Liberty Mutual, leading property and accident insurance companies (P&C), have helped NYDIG, a provider of cryptocurrency technology and investment solutions, raise \$ 100 million in additional capital for growth. Insurers have joined existing investors such as New York Life and MassMutual. At the same time, NYDIG announced the appointment of Mike Sapnar, CEO of Trans Re, global head of insurance solutions. In his new role, Sapnar will oversee NYDIG's insurance business, helping to accelerate cryptocurrency-based innovation in the global P&C industry. Sapnar is joined by NYDIG Chief Insurance Officer Matt Carey, who will focus on cryptocurrency solutions for U.S. life insurance providers and annuities. Prior to joining NYDIG, he was a co-founder and CEO of Blueprint Income, a leading online annuity market recently acquired by MassMutual at Stone Ridge. NYDIG is owned by Stone Ridge, a holding company that also controls Stone Ridge Asset Management, an investment manager focused on alternative risk premiums, managing a number of mutual and private insurance (ILS) securities and reinsurance fund strategies. Many experts see the potential of the cryptocurrency insurance market and believe that the blockchain will take the insurance industry to a new level, as it will eliminate intermediaries in the entire chain of the process. While the legal status of cryptocurrencies is not uniform around the world, and investing in cryptocurrencies carries great risks, pioneers of blockchain insurance have to take into account many nuances in working in a new market. But despite the difficulties, cryptocurrency insurance is taking the first sure steps by offering new products and services to the market. ICO investments can be insured in different formats, depending on the legal status of the ICO in a given country. For example, if the legal definition of a token falls under the category of "goods", the insurance can be engaged in a company that has a license to work directly with the property. If the digital currency is recognized as a means of payment, then this case is not about

insurance, but about various stock mechanisms, such as hedging. This hedging mechanism is already in place on many cryptocurrency exchanges in the form of margin trade, where a bidder can buy or sell ("stand in a short position") cryptocurrency, including not having it in its assets in full ("with a shoulder"). But the high volatility of cryptocurrency quotes now makes such a decision difficult to apply. ICO fraud insurance is not yet used on the market. Affected investors, as a rule, go to court on their own. The cryptocurrency insurance market offers more services than the ICO insurance market. It is worth noting that exchanges are the most popular place to store cryptocurrencies. Inside the exchange you can convert, trade and spend. But the danger of these sites is that they are periodically "feverish". At this stage, investors are not considering little-known and clearly suspicious exchanges, the withdrawal of funds from which usually eats everything that has been traded. Large and reliable trading platforms are also at risk. They are a tasty morsel for hackers. Moreover, the more popular the exchange, the more actively they try to break it. On the positive side, it can be said that large exchanges often return stolen assets to users, the reserve fund account. But it may be that no fund will be enough to cover the losses. It is possible that cryptocurrency insurance in the future may become one of the most popular services among investors.

The insurance company has to create a large enough fund for insurance payments and in the current realities of the market no one will go. There may be surrogate insurance products, small print papers, which do not give any guarantees. The only way to save money is to trade on decentralized exchanges. Traditional cryptocurrency insurance is a combination of insurance services and smart contracts. In essence, this is a classic insurance of household goods, but with the use of blockchain technology. Belay and Rega.Life blockchain projects offer services in this direction. Belay is working to increase insurance transparency and optimize paperwork. Rega.Life also uses smart contracts, blockchain is responsible for the transparency of processes, and financial transactions are in cryptocurrency and have no territorial boundaries and fees. Prospects for cryptocurrency insurance largely determine the future of the insurance market, which depends entirely on the regulation of the crypto market - in Ukraine in particular and in the world in general. Determining who will work in the market - licensed insurance companies or fintech and insurance tech companies, will allow only the right status of cryptocurrencies: goods or money. In the near future, the crypto community can reasonably expect the issuance of default insurance (CDS - Credit Default Swap), when a certain amount is paid by smart contract in the absence of payment to the owner of insurance from third parties (issuers) and insurance against illegal actions cryptocurrencies and depositories. Crypto market insurance can give a serious impetus to its growth and development. After all, the higher the quality of the ICO, the more coverage should be expected from the insurance company, says the founder of the rating agency for the Assessment of Digital Assets of DigRate Arseniy Poyarkov. And this will allow users and the market to get more liquid and successful blockchain projects in the near future. Starr Insurance and Liberty Mutual, which are among the leading insurance companies dealing with property and accident insurance (P&C), helped NYDIG, a

supplier of technologies and investment solutions for cryptocurrencies, to attract 100 mln. dollars of additional capital for growth. Insurers have joined existing investors such as New York Life and MassMutual. At the same time, NYDIG announced the appointment of Mike Sapnar, CEO of Trans Re, global head of insurance solutions. In his new role, Sapnar will oversee NYDIG's insurance activities, helping to accelerate cryptocurrency innovation in the global P&C industry [14, p.542].

Recently, interest in cryptocurrency is growing, the impetus for this is the rapid growth of its rate in the global financial market, which made this type of electronic money quite popular, especially in early 2017. Cryptocurrency is a digital currency, the unit of which is a coin that is protected against counterfeiting, in fact it is encrypted information that cannot be copied. Cryptocurrency is issued directly in the network and is in no way related to any currency or to the state currency system [9]. The first type of cryptocurrency appeared in 2009, its value was \$ 0.3. USA. Today, there are 796 popular cryptocurrencies in the world, which differ in the method of cryptography, ie their own unique data encryption [15].

The most popular of them are Bitcoin, Ethereum, Dash, Bitcoin Cash, Litecoin. In May 2016, the first Ukrainian cryptocurrency appeared - Karbovanets (Ukrainian Karbowanec or KRB). As of August 15, 2016, its value was 2.5 hryvnias. According to some investment market experts, investments in cryptocurrency are quite promising, due to the constant growth of its exchange rate. The attractiveness of Bitcoin lies in the ever-increasing rate: the first investors to buy Bitcoin in 2011-2012 received millions of dollars. Those who bought Bitcoin between 2013 and 2016 earned hundreds and tens of thousands of dollars. And in early 2017, investors at least doubled their investments. According to statistics, the Bitcoin exchange rate as of February 1, 2016 was \$ 377.6. USD, and as of 02.01.2017 - already 948.2 dollars. USA. The rapid growth of Bitcoin took place in the second quarter of 2017, and as of 01.08.2017 the value of Bitcoin was \$ 4,701.5. USA., And as of 17.05. 2018 - \$ 8,327.03 USA. Experts predict an increase in demand for Bitcoin, as their issuance is limited to 21 million coins, and sold on the market 16 million, leaving 5 million coins [10]. In addition, more and more developed countries are legalizing cryptocurrencies, they are being used by banks and investment funds, which leads to a significant influx of financial resources into the crypto market. Yes, O.O. Poplavsky found the following dependence: the use of cryptocurrencies, including Bitcoin, is allowed in countries with high insurance densities and developed insurance industries.

The position of cryptocurrency is illegal in those countries where the high share of the shadow economy and the low percentage of coverage of the insurance field [11, p. 179]. However, each investor in the case of investing in cryptocurrency must take into account a number of risks that may arise and be realized in the process of such investment. The main advantages of using cryptocurrency as an innovative means of payment include:

- 1) low cost of transfers, which is especially true for microtransfers and microinsurance;
- 2) the relative velocity of money between different users and countries;
- 3) simplicity and flexibility for the user with a simultaneous security system;

4) public registration of transactions and pseudonym of accounts ensure both transparency of the system and its secrecy;

5) impossibility of confiscation of funds;

6) independence from the banking system for capital movements;

7) reduction of bureaucratic obstacles [12, p. 179]. In addition, cryptocurrency operates without any supervisory authority or central bank; and transaction processing and issuance are carried out collectively by network members, which allows to conduct any operations anonymously, without user identification [11]. The thesis that insurance companies objectively have an investment function does not need to be proved. It has long been thought that the main task of the insurance company is to provide insurance services directly, and investing plays a secondary role, but in modern conditions, insurance transactions can be considered as a way to accumulate funds for further investment, i.e. the functioning of insurers as institutional investors. foreground. In order to increase the efficiency of investment activities, the insurance company should first determine its most profitable areas (types of assets in which to invest investment resources). Investments in cryptocurrency show a high rate of return, but at the same time are characterized by high volatility, so insurers must determine the maximum allowable losses and forecast financial results for changes in investment policy. Activities related to the use of blockchain technologies and cryptocurrencies in the insurance business are constrained by a number of circumstances, the main ones being:

- imperfection of legal regulation of cryptocurrency issuance and circulation;
- non-transparency of insurance activities;
- low capitalization of domestic insurers;
- high loss of insurance activities for the most popular types of insurance, which requires covering the losses of insurance activities with income from investment and financial;
- lack of sufficient resources free from obligations (own funds);
- fear (distrust) of the latest technologies and tools;
- lack of competition.

The use of blockchain technology in the field of insurance service will allow insurers to achieve positive financial results by reducing costs, especially liquidation and collection, and increase the efficiency of the company as a whole. In order to give the investor the right to choose to invest in cryptocurrency, a SWOT analysis of such investments was conducted, in particular Bitcoin, which establishes a link between the most characteristic opportunities, threats, prospects and disadvantages for the investor. The results of SWOT analysis can be used to form and choose a strategy for investing in cryptocurrencies. It does not contain complete information for making a final decision, but it allows you to streamline the process of considering all available information using your own ideas and beliefs. Active development of cryptocurrency relations requires legal regulation. Now a legal vacuum has formed in Ukraine. According to the current legislation, cryptocurrency cannot be used for mutual settlements, therefore, crypto as a means of payment is insolvent. Therefore, citizens and legal entities that use cryptocurrency conduct operations and conduct



business at their own risk, without any guarantees from the state. In addition, the difficulty in the practical implementation of blockchain technology is that it involves a change of management paradigm and the transition from a hierarchical model to a flat one, in which decisions are made decentrally, and the whole process is transparent to its participants. Obviously, this entails the need to rethink business processes, approaches to managing and protecting the information of financial service providers.

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#### 4.5. DEVELOPMENT OF THE AGRARIAN LOGISTIC SYSTEM OF UKRAINE IN THE CONDITIONS OF DIGITAL TRANSFORMATION OF THE ECONOMY

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**Summary.** The article is devoted to the research the efficiency of the development of the agrarian logistics system of Ukraine, its problems and prospects development. The purpose of the study is to analyze the main indicators of development of the logistics system, to determine the relevance of modern information technology in the field of logistics and agribusiness, to identify the main logistics trends in the part of the digital transformation in Ukraine. The international ratings of logistics infrastructure are considered. The integrated assessment of the transport and logistics potential of the country is carried out. The main indicators of foreign economic activity and the dynamics of freight traffic, which reflect the level of development of agrarian logistics in the country, are analyzed and evaluated. Realization of powerful logistic potential through introduction of innovative technologies and digital transformation will promote development of agrarian sector of economy of Ukraine. Analysis of the development of the logistics system of Ukraine in the context of digital transformation of the economy is a very important issue. Next research should be aimed at specifying the tools, methods and necessary resources that will identify and model the country's agrarian logistics strategy.

**Keywords:** information technologies, digital transformation, logistics system, agrarian logistics, agricultural sector, foreign economic activity, LPI.

The agricultural sector is one of the priority areas in Ukraine's development

strategy and plays the important economic role. Its share in the gross domestic product is about 9%. In 2020, more than 14% of the population was employed in agriculture [3]. The share of the agricultural sector in the consolidated budget of Ukraine in recent years averages 12%, and in the commodity structure of exports is about 45%.

Ukraine is a world leader in grain producers and exporters. However, due to an underdeveloped and uncoordinated logistics system, the agricultural sector loses up to 1/3 of the annual volume of agricultural production. This requires to form the modern model of agriculture, improve the conditions for doing business, conduct qualitative changes in the transport and logistics system, to implement the modern information technologies. But as a result of negative events in the sociopolitical system of the country, the logistics market of Ukraine, like the whole country, is going through difficult times. Transport capacity in Ukraine is underutilized. The infrastructure and services are lower than the standards available in EU countries, and the costs of end-user logistics are high. Improving the efficiency of interaction of all participants in the logistics process in the agricultural sector is also not possible without the implement of IT-innovations and a well-developed telecommunications network. Therefore, the digital transformation of agrologistics in Ukraine is an important and urgent issue.

Agrologistics is the new applied direction of logistics, which is associated with the implementation of its methods and provisions in the field of agro-industrial production. In Ukraine, agrologistics is at an early stage of development. However, many logistics approaches are quite effectively used in agricultural enterprises in the United States, Western Europe, Canada, Australia.

The research of the development of the logistics and the impact of innovations on the logistics sector is devoted in the works of many foreign and domestic scientists, among them: Velychko O., Velychko L., Pfohl, H., Yahsi B., Kurnaz T., Grytsenko S., Grigorak M. and others. The problems of agrologistics and directions of its application in the agrarian sector of the economy of Ukraine were studied by the following scientists: Glukhova Yu., Danylenko A., Potapova N., Yaremchuk O., Sumets O., Kormyshkin and others.

The main normative documents in the field of regulating the development of the agrarian logistics system are: 1) National Transport Strategy of Ukraine until 2030 from 30.05.2018 № 430-p [6], which determines the areas of improving the quality of transport services, bringing the level of their provision and the level of infrastructure to European standards, improving the level of transport safety, etc.; 2) Strategy of sustainable logistics to 2030 from 01.06.2018 [6], which determines the directions of increasing the speed of delivery of goods, the implement of modern technologies in transport, more efficient use of transit potential of Ukraine; 3) Law “About stimulating the development of the digital economy in Ukraine” №1667-IX, 15.07.21 [6]); 4) The concept of the State target program for the development of the agricultural sector of the economy for the period up to 2022, adopted by the Cabinet of Ministers of Ukraine on 30.12.2015 № 1437 [6].

The analysis of the development of the logistics system in the country should

be conducted on the basis of the most well-known and objective ratings with the criteria for assessing the effectiveness of foreign trade management (Table 1).

Table 1

International ratings for evaluating the effectiveness of logistics systems

Rating name	Rating subject	The essence of the rating criterion
Logistics Performance Index (LPI)	World Bank	Efficiency and Transparency of Border Control, Customs Administration and FEA Procedures.
Global Enabling Trade Index (ETI)	World Economic Forum	Index calculation based on information from more than 800 of the world's largest logistics companies.
Doing Business World Trade Index (WBI)	World Bank	Simplicity and ease of doing business, including in international trade (time and cost of foreign trade enterprises)
Emerging Markets Logistics Index (EMLI)	Research Institute "Transport Intelligence" (United Kingdom)	The degree of attractiveness of the foreign investment logistics market.

According to research on transport costs, the leaders are the UK, USA, Canada and France (45-48%), warehousing costs – Germany, Italy, UK, Russia (27-34%), stocks and accounting costs– Benelux, USA, Russia (35-47%) (Table 2). In Ukraine, 70% of logistics costs are transportation costs (7 billion), 25% of storage costs (2,5 billion) and about 5% are for managing logistics flows (\$ 0,5 billion). For example, the cost of transporting the main export commodity (the grain) from Ukrainian agricultural enterprises to the ports of the Black Sea is about 40% higher than the cost of similar services in Germany and France.

Table 2

Structure of costs for logistics in the developed countries of the world [7]

Country	Cost, %		
	transport	stocks and accounting	of warehouse
France	45	31	24
Benelux	31	47	22
Germany	37	30	33
Italy	38	28	34
UK	48	24	28
USA	45	35	20
Russia	38	35	27

One of the most well-known international indicators that reflects the key conditions for doing international trade is the Logistics Performance Index. According to World Bank researches, 160 countries are ranked in six key aspects of trade: 1) efficiency of the clearance process; 2) quality of trade and transport related infrastructure; 3) ease of arranging competitively priced shipments; 4) competence

and quality of logistics services; 5) ability to track and trace consignments; 6) timeliness of shipments in reaching destination within the scheduled or expected delivery time. According to the World Bank, Ukraine ranked 66th (2018) in the Logistics Efficiency Index [7] (Figure 1). The ranking of countries according to the LPI for 2010-2018 shows that Ukraine's has stabilized on the 2012 level.

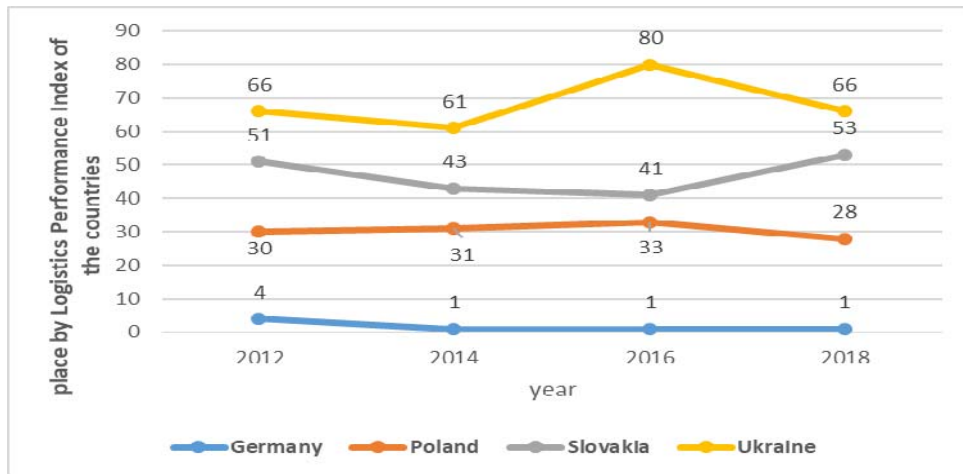


Figure 1. Ukraine's place by Logistics Performance Index of the countries [7]

Ukraine is inferior to the leader of this rating – Germany – by an integral score: 2,83 points against 4,20 points. Ukraine significantly loses to the leader in such key indicators as Infrastructure and Timeless. On these indicators we see negative dynamics (Figure 2). As we can see, Ukraine lags far behind the leading countries of Europe and neighboring post-Soviet countries, but among the countries with low-medium economic development Ukraine is in the top ten.

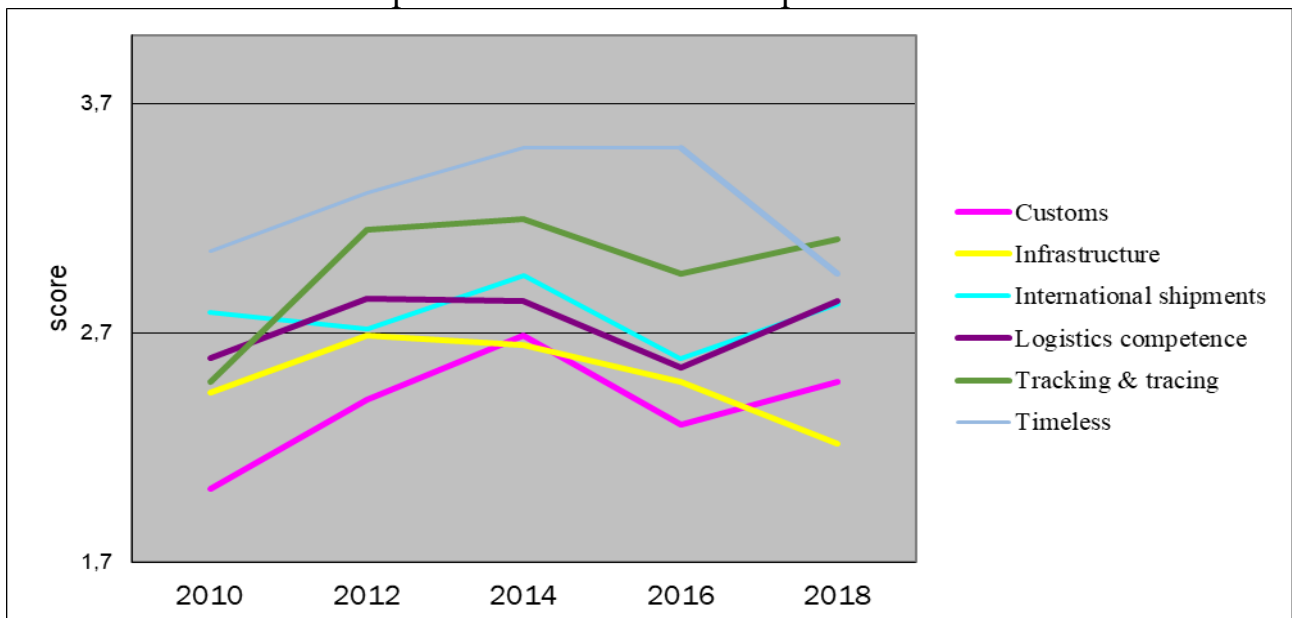


Figure 2. Dynamics of the logistics system in Ukraine by LPI in 2010-2018 [7]

Table 3

The efficiency of the logistics system of Ukraine in 2010-2018 [7]

Pik	LPI, rating	LPI, Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeless
2010	102	2,57	2,02	2,44	2,79	2,59	2,49	3,06
2012	66	2,85	2,41	2,69	2,72	2,85	3,15	3,31
2014	61	2,98	2,69	2,65	2,95	2,84	3,20	3,51
2016	80	2,74	2,30	2,49	2,59	2,55	2,96	3,51
2018	66	2,83	2,49	2,22	2,83	2,84	3,11	2,96

Let's look at Ukraine's position on the Global Enabling Trade Index. It is published in the World Economic Forum's Report. The potential of 138 trade facilitation countries is estimated using 56 indicators broken down into categories: 1) access to the internal market; 2) administrative management at the border; 3) business climate; 4) transport and communication infrastructure. Ukraine has the declining trend in terms of the Index (86th place in 2012, 83rd place in 2014, 95th place in 2016). This indicates significant administrative barriers, imperfection of the regulatory framework for regulation of foreign economic activity of the country, inefficiency of transport and communication infrastructure.

The most authoritative rating for the international investors is the Doing Business rating, which has been held since 2003. The survey is conducted among 190 countries ranked by 10 business indicators [1]. In 2019, Ukraine ranked 71st in this ranking and climbed to 78th place in terms of "international trade". Ukraine has lower ratings than the countries of the Organization for Economic Co-operation and Development on all indicators of international trade "Doing Business-2019". Also our country's ranking in 2018 is the best indicator in the last 12 years (Figure 3).

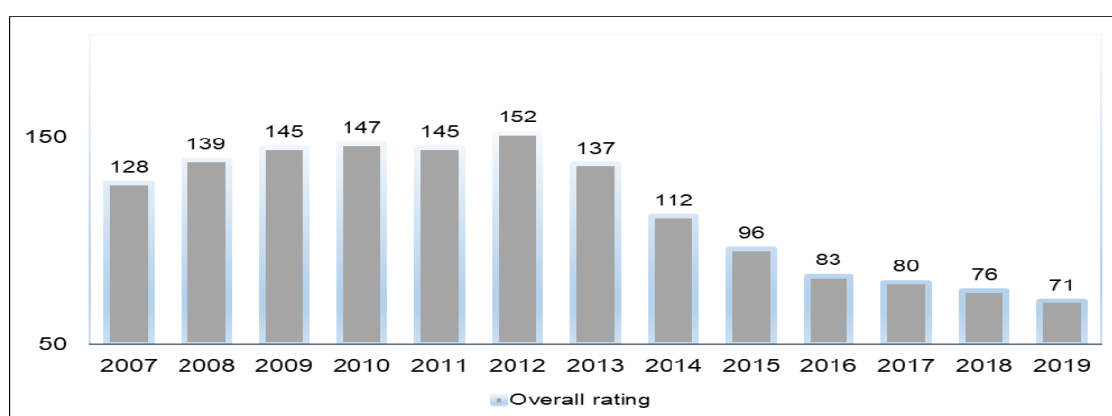


Figure 3. Dynamics of Ukraine's position in the international ranking [5]

According to the report of the research institute "Transport Intelligence", which consists of the logistics index Agility Emerging Markets Logistics Index, in 2018 Ukraine took 35th place (EMLI = 4,27), which shows a decrease in investment attractiveness in 2018 per year (EMLI = 4,14). In particular, Ukraine ranks 30th in terms of accessibility; the size and growth rate of the market – 32nd place, and the total – 34th place [5].

The development of agribusiness in Ukraine is impossible without the developed transport infrastructure. The most important for the agricultural sector are road, river and rail transport. Ukrainian logistics has significant potential due to the favorable geostrategic position of the country. Ukraine has a well-developed transport network (Table 4). The length of public transport communications exceeds 200 thousand km (without pipelines). This creates unique opportunities for the development of foreign economic activity of the country as a whole.

Table 4

Cargo transportation by types of transport in Ukraine in 2015–2020 [3]

	Freight volumes, mln tons					
	2015	2016	2016	2017	2019	2020
Transport	1475	1544	1582	1643	1579	1640
railway	350	344	340	322	313	305
automobile	1021	1086	1122	1206	1147	1232
water	6	7	6	6	6	6
pipeline	97	107	115	109	113	97
air	0,1	0,1	0,1	0,1	0,1	0,1

In general, in 2020 rail transport has the largest impact on the total volume of cargo transportation (56%), at the second place is pipeline transport (22%) and automobile transport (21%). Analysis of the dynamics of freight turnover during 2014-2020 indicates a downward trend [3] (Figure 4).

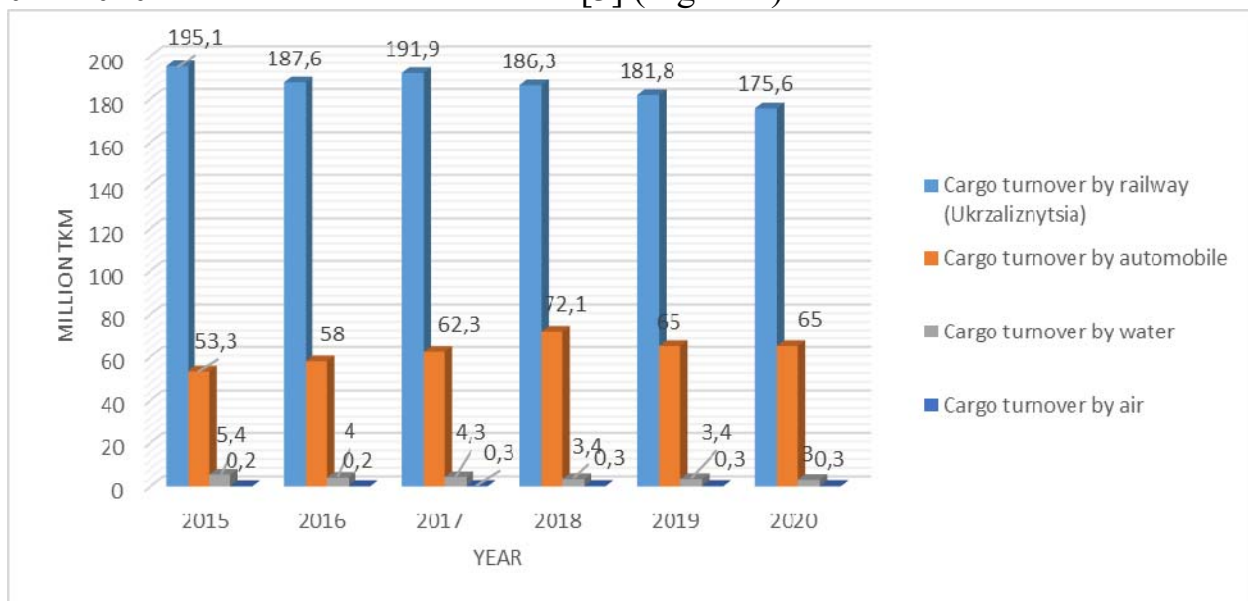


Figure 4. Dynamics of cargo turnover by types of transport in Ukraine in 2015-2020

The development of the logistics system is closely linked to the foreign trade. Therefore, the influence of certain economic indicators (GDP, structure of exports and imports of goods, etc.) is important for the logistics system of Ukraine. Gross domestic product (GDP) in the country has a general upward trend (Table 5). Also in 2011-2015 there was a tendency to increase the ratio of import to export (CCIE). In 2015 alone, the CCIE value exceeded the 1 value, which is critical and safe. That is, the country had a positive foreign trade balance.

Table 5

The main indicators of Ukraine's foreign economic activity in 2011-2020 [3]

Year	EX, billion dol.	IM, billion dol.	GDP, billion dol.	CCIE	CED, %	CID, %	COE
2011	68,4	82,6	163,1	0,83	41,9	50,6	0,93
2012	68,8	84,7	175,8	0,81	39,1	48,2	0,87
2013	63,3	76,9	183,3	0,82	34,5	42,0	0,76
2014	53,9	54,4	133,5	0,99	40,4	40,7	0,81
2015	46,8	42,9	91	1,09	51,4	47,1	0,99
2016	45,1	44,5	93,3	1,01	48,3	47,7	0,96
2017	52,6	55,1	112,2	0,95	46,9	49,1	0,96
2018	57,3	63,5	130,8	0,90	43,8	48,5	0,92
2019	64,1	67,7	153,8	0,95	41,7	44,0	0,86
2020	59,4	60	155,6	0,99	38,2	38,6	0,77

From Table 5, we can see that export and import dependency was also at safe levels in 2011-2020. The export dependency ratios (CED) and import dependence (CID) did not exceed 50%, although they were close to it. Only in 2011 Ukraine's import dependence was 50,6%. It's the dangerous signal for foreign trade. Attention is drawn to the coefficient of openness of the economy (COE). According to the results of the calculations, the coefficient of openness of the economy in Ukraine during the analyzed period was the highest in 2011 (0,93) and the lowest SOE in 2018 (0,38). This situation can be explained by the strategic change in the external vector of Ukraine's development after the Revolution of Dignity in early 2014 and the unstable political situation in the country.

In 2020, total exports of products from Ukraine amounted to \$ 59,4 billion USA, which is 7,3% more than in 2019 [3] (Figure 5).

Exports of the agricultural sector and the food industry increased by \$ 35,2 million (at 0,2%). Recently, the largest share in Ukrainian exports belongs to the products of the agricultural sector and food industry (45,1%). The main partner countries in the export of goods in 2020: EU countries (37,8%), China (14,4%), Russia (5,5%), Turkey (5%), India (4%), Egypt (3,3%) [3].

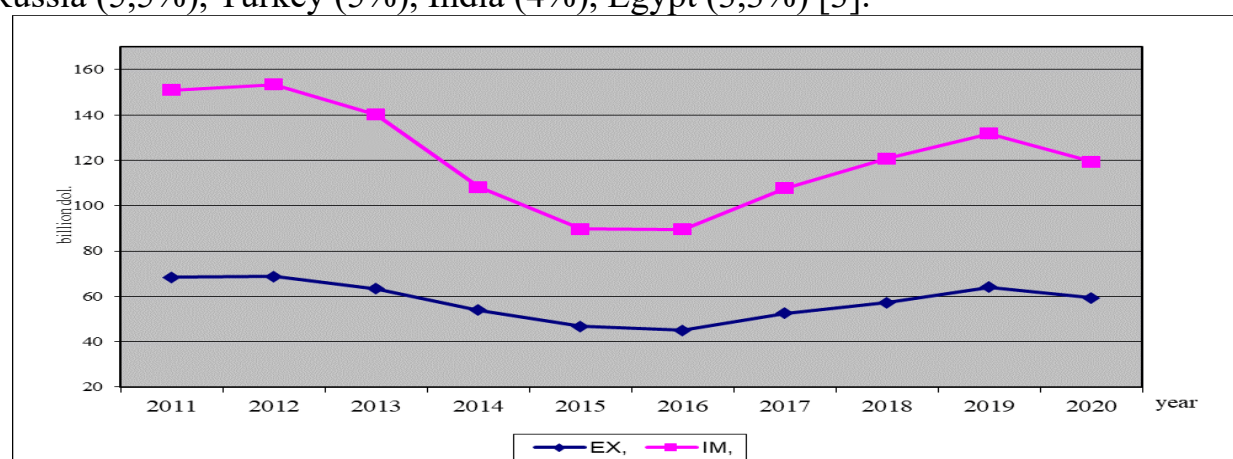


Figure 5. Dynamics of export-import of goods in Ukraine for the period 2011-2020



To increase the Logistics Efficiency Index of Ukraine it is necessary to: increasing the investment attractiveness of the logistics industry; transition to the concept of 4PL (creation of system integrator in the field of logistics) and 5PL (Internet logistics, which is supported by modern network technologies, using the business model of a virtual enterprise); improvement of regulatory regulation of the logistics industry; creation of a system of reliable statistical reporting on logistics indicators; active implementation of modern innovative solutions in the framework of digital transformation.

Processes of the spread of coronavirus infection in Ukraine and the world since 2019 have negatively affected the development of all sectors of the economy. And therefore the introduction of the newest technologies of “Industry 4.0” in agrolistics is actual and perspective.

The application of digital logistics is to reduce time, labor, financial losses associated with data retrieval, and the use of IT applications to form optimal business partnership schemes based on effective modeling of production-economic and trade-economic relations between suppliers.

For the effective development of the agrolistical system, especially in a pandemic, it is necessary: using of information and communication technologies through the Internet; digital skills of staff, using of digital technologies by business, provision of digital services and access to information resources; distribution of digital platforms with progressive business models that allow different stakeholders to interact online. Digitization has a number of innovative advantages: individualization of demand; deepening the relationship with the buyer; technological development; saving transaction costs; growth of business culture; cost reduction, etc.

Today we can identify the following trends in technology in the field of logistics: 1) electronic invoice (e-AWB); 2) big data and machine-learning (demand forecasting, route optimization, risk management, new forecast logistics business model); 3) cloud logistics (cloud transport management systems in real time will be able to cover all logistics processes from procurement to invoicing, which makes the whole process easier and cheaper for businesses; 4) the Internet of Things (IoT); 5) blockchain (full transparency on the entire route of the goods, perform automatic invoicing and payment of bills).

According to the Deputy Minister of Agrarian Policy and Food of Ukraine for Digitalization, Ukraine plans to introduce a two-tier digital transformation in the agricultural sector. The first level will cover the relations and interaction of the state and the participants of the sector (farmers, farms) on the basis of a digital omnichannel platform (the so-called “AgroDia”). Omnix agrolistics will include the introduction and updating of existing information systems to collect information, Big Data, dissemination of Data Driven decision-making methodology, digital development of territories. The second level is the actual digital transformation of agricultural producers themselves, as participants in the process, who actively use digital solutions in management and logistics.

At the startup competitions held in the IT-Corner business forum in 2021 presented the largest catalog of innovative solutions in the agro-sphere [2], in the

areas – logistics, LandTech, RTK-signals, artificial intelligence, data analysis, online maps, robotics and drones, irrigation, satellite monitoring, precision sowing. The study suggests that Ukraine's agrarian logistics system has many problems and lags far behind the EU countries in terms of infrastructure and standards. Only 10% of Ukrainian agricultural companies implement new technologies. However, the Ukrainian agricultural sector has great potential for development.

Among the main technologies that have a significant impact on supply chains today are business intelligence, mobile technology and applications, omnichannel logistics, the use of unmanned vehicles and drones, hydrogen engines, 3D printing, cloud computing technology, e-commerce, automatic identification and collection data. Realization of the strong logistic potential of the country, development of the market of logistic services, stimulation of quality of logistic service through introduction of innovative technologies and digital transformation will promote development of agrarian sector of economy of Ukraine. This will allow the country to take a competitive position in international markets.

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## **SECTION 5. MODERN INFORMATION SYSTEMS AND TECHNOLOGIES IN ACCOUNTING, AUDITING, TAXATION**

### **5.1. INFORMATION TECHNOLOGIES IN THE ECONOMY: THE QUANTITY CAUSES QUALITY CHANGES**

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**Summary.** Contemporary development of economy depends on innovations. It is talking about progressing digital technologies. The World Bank has collected information about its dynamics in different countries. Its data was studied by author of this article to understand how technologies development impacts on industries and how efficiently brings income for national economy. As it was revealed due to conducted analysis, information and computer technology (ICT is further in the text) tendencies is in closest relation with costs and time to start-up business, amounts of online payments and fraction of ICT service export in total export revenue. This article presents results of analysis.

**Keywords:** doing business, digitalization of the economy, online services, branch of the economy, impact on the business activity, scatter diagram, dynamics

Rapid development of information technologies prompts evolvement of each branch of the economy. It caused appearance of such terms as “digital economy” and “electronic business”. Contemporary firms’ activity is impossible without sites where they present information about own products and services, they use various tools for payment via internet, make deals with supplayers online, use collaborative systems for work aims, keep relations with customers thanks to social networks and mobile connection in attempts to predict their behavior with special analytical software and then plan strategy of the next steps for successful development. Digital influence changes economies and ways of business activity in the world. It accelerates development of economy, military and industrial complex, political and social life, and, possibly, it becomes today the next global wave in the cycle of business activity. It involves financial system that use electronic payments and the peculiarity of nowadays is that money may never leave own location from the bank vault, but simply change owner in each case of transfer. Moreover, the appearance of crypto currency, fast rise of its values in virtual environment, absence of law control and the uncertainty in its acceptance or nonacceptance today by some countries as a way of payments can cause the next economic crisis.

To imagine described features of information technologies impact completely, it is worth to have a look at figures. For instance, well known PayPal system, that provides financial transfers online, became such popular that by Raynor de Bests’ words the amount of active registered accounts in the second quarter of 2021 increased “by over 16 percent year-to-year from the second quarter of 2020” [14].

According to the source, number of active PayPal accounts in the world was on the level of 84,3 mln in the first quarter of 2010. But, in the same quarter of 2021 the indicator jumped up to 392 mln. Thus, the annual payments volume raised more than in eight times for the years of 2012-2020 (Figure1).

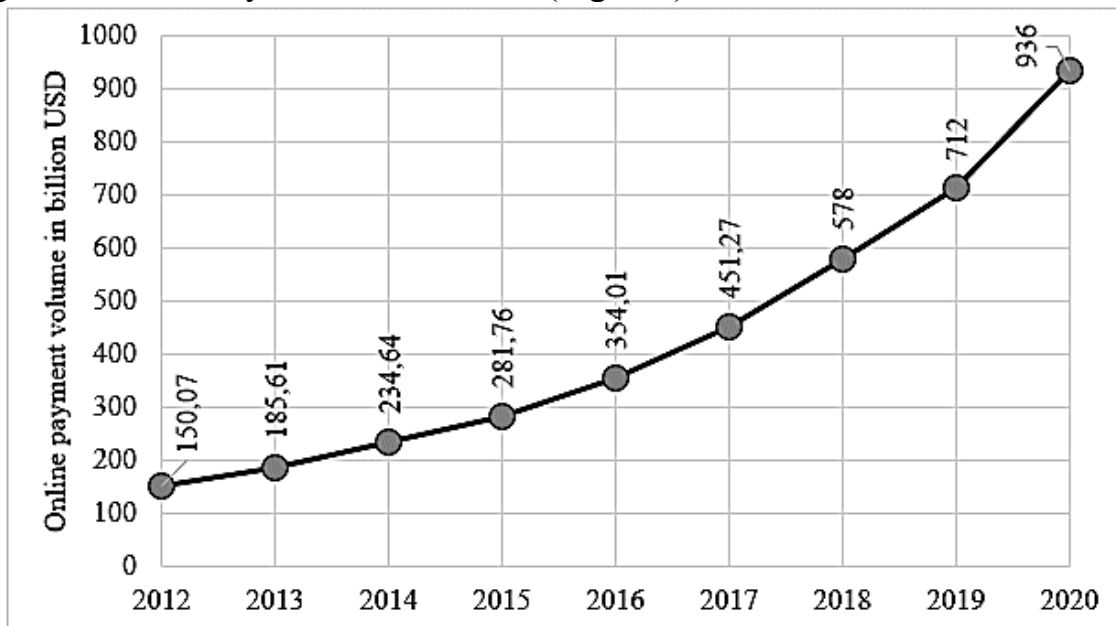


Figure 1. Worldwide PayPal's annual payment volume in billion USD [15]

Besides mentioned payment system, the next indicator that presents involvement of more and more people in virtual environment is mobile communication. As it was published by Statista Research Department in July of 2021 [13], the number of active mobile internet users in the world reached 4,32 bln, while the mobile internet traffic as a part of total global traffic gained to almost 57%. Can such changes in quantity of users cause the quality transformation of economy? Have a look at other figures and assess effect of information technology spread.

The impactness of digitalization on the world economy and development of countries was described by Klapper Leora and Singer Dorothe who analysed advantages of payments with use of the internet technologies [12]. After analysis they concluded that digital way to pay for something both in urban and rural areas becomes favorable. It is attractive by its low cost and velocity of operations. That means that internet is shortening distances between two participants of financial process. To paraphrase authors, thanks to internet the representatives of private sector in economy have got such advantage in doing business as a transparency on the base of diversity, innovation, protection, and cooperation. Diversity gives to business the opportunity to choose bank, partner, investor, supplier on the base of the fast analysis of information collected from various internet sources. Information technologies as innovative tool that built-in ERP, SCM and CRM-systems help make control resources and employers, manage supply chain, and keep relations with clients. Protection is formed by rising security of payments, sendings, and receivings of money. And lastly, internet converted the manner of cooperation with tax organizations and other institutions of government power.

The World Bank issued statistical data with dynamics of internet users in countries and in the world at whole for the period of 1960-2020. They calculated the

number of individuals “who have used the Internet (from any location) independently was it applied via a computer, mobile phone, personal digital assistant, games machine, digital TV, or through something else” [10].

As it can be seen in the diagram (Figure 2), the percent of people who apply the internet technology in everyday life has increased almost in seven times for the last decade starting from 2008-2009. The tendency shows that more than 70% of ukrainian people work with numerous information technologies and handling them in education, industry, agriculture, medicine, communication, and business.

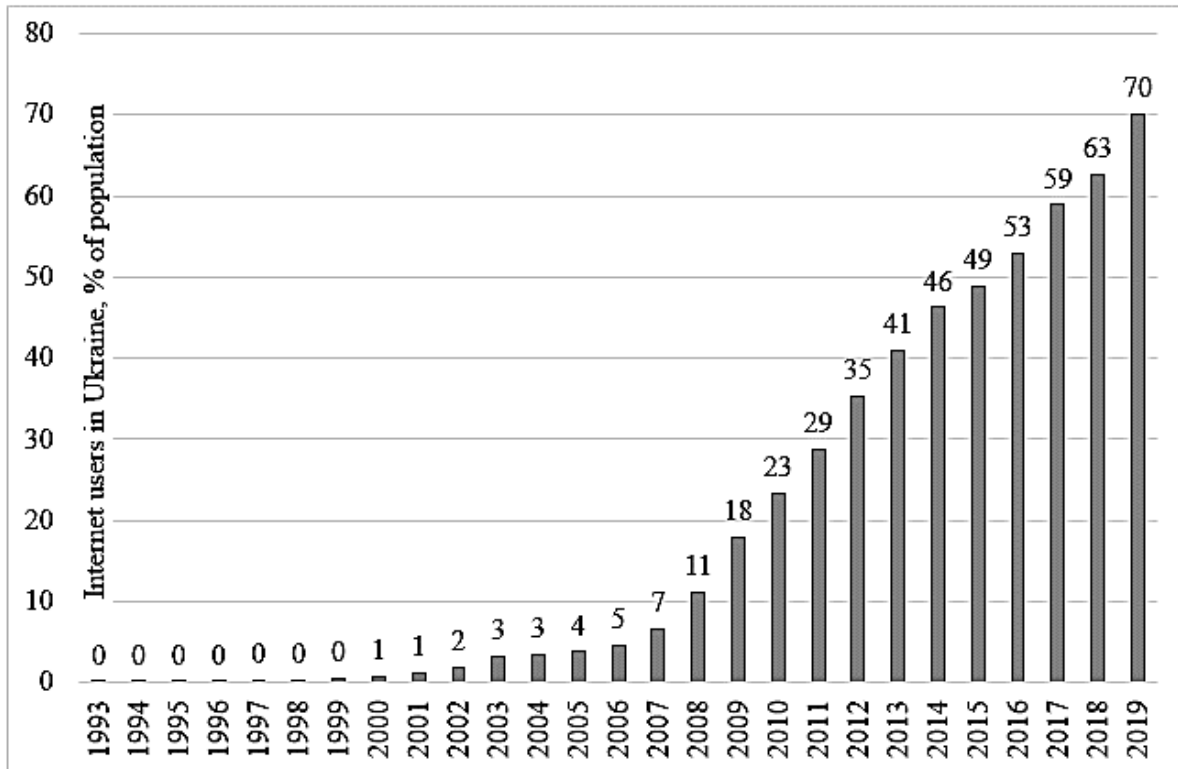


Figure 2. Ukraine internet users, % of population\*

\*Calculated and built by the author based on data [10]

Nevertheless, Ukraine tendency of information technologies development has own features if juxtapose it with other countries. It is visible in the diagram (Figure 3) that in 2000 the tendency of internet technology dissemination in Ukraine had considerable lag. Comparing data of Switzerland as a high-income country, well-developed European countries and developing Ukraine, it can be clearly seen that 47% of Switzerland people had actively used internet in 2000, in Europe this value went up to 7% and in Ukraine this fraction was only 1%. Since 2000 the gap has shortened and in 2019 the share of internet-users was 93% in Switzerland, 79% in European countries and 70% in Ukraine.

Noticeably that the difference in internet usage in Ukraine and European countries becomes smaller. That means that information technologies in Ukraine have efficient implementation in everyday life. In our country contemporary representatives of small, medium, and large business apply online services for registration of own activity, accounting incomes and expenditures, and making different payments. How considerable is the effect of such services applying?

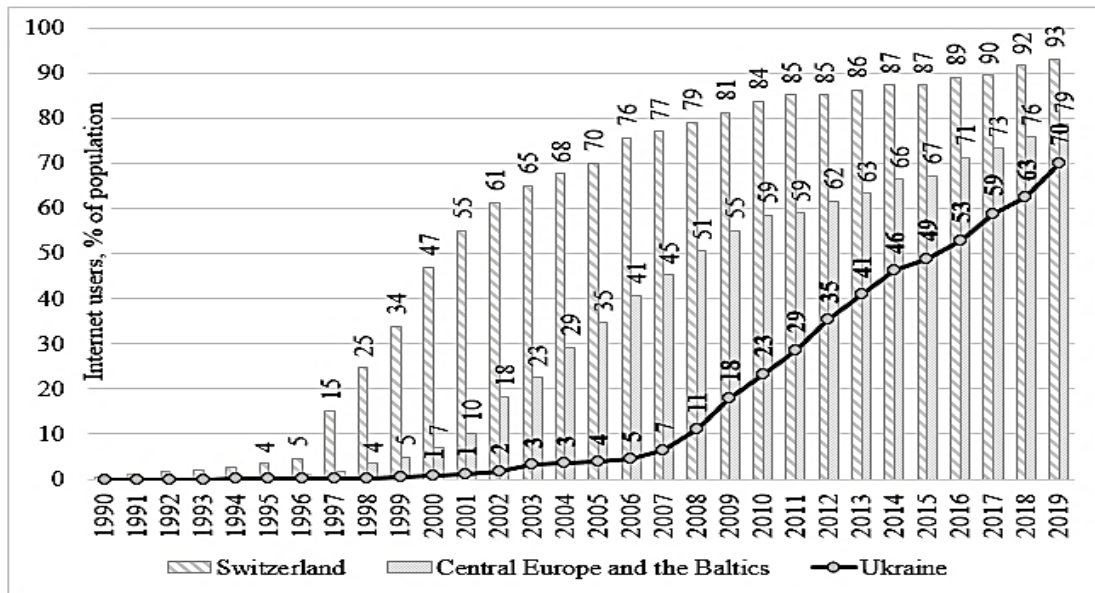


Figure 3. Ukraine, Switzerland, Central Europe and Baltics internet users, (% of population) \*

\*Calculated and built by the author based on data [10]

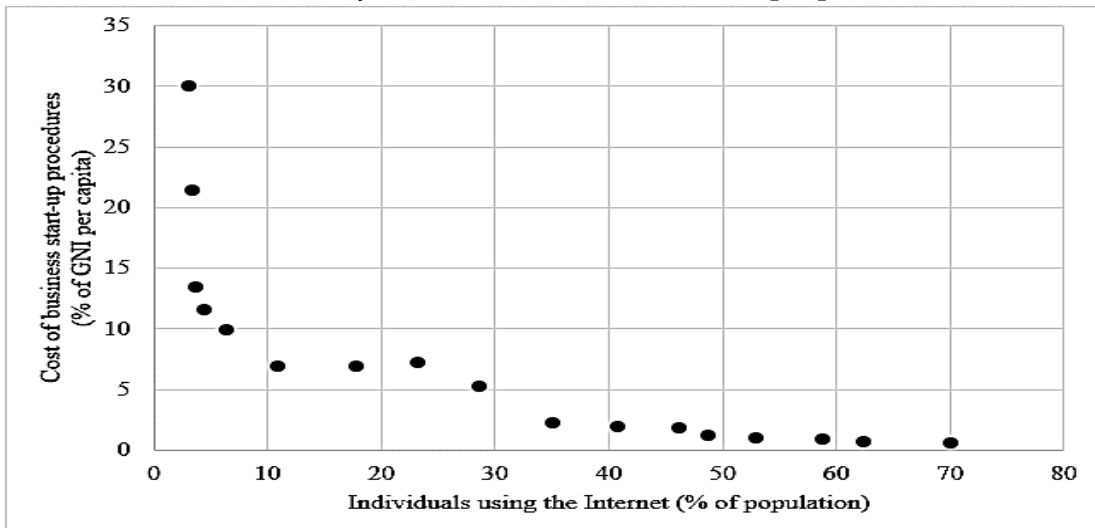


Figure 4. Ukraine: cost of business start-up procedures (% of GNI per capita) dependently on spread of internet (fraction of internet users, % of population) \*

\*Calculated and built by the author based on data [17]

Built scatter diagram on the base of Ukraine development indicators [17] presents that internet substantively lowered costs of starting business for the period of 2003-2019 (Figure 4) and helped to decrease amount of paper permissions for that. For instance, in 2003, when internet-users created the only 3,14% of population, the fraction of cost for business start-up in Ukraine national income was nearly 30%. In contrast, in 2019 the same indicators accordingly were equal to 70% of internet-users and 0,5% of expenditures to start-up the entrepreneurship activity.

Digital technologies and proper law regulations facilitated procedures for starting business. As it is obviously in the diagram (Figure 5) the process of internet technologies extension in Ukraine helped to cut time that is required to register and start entrepreneurship. The scatter plot shows that since 2014 mentioned time-indicator has shortened more than in twice.

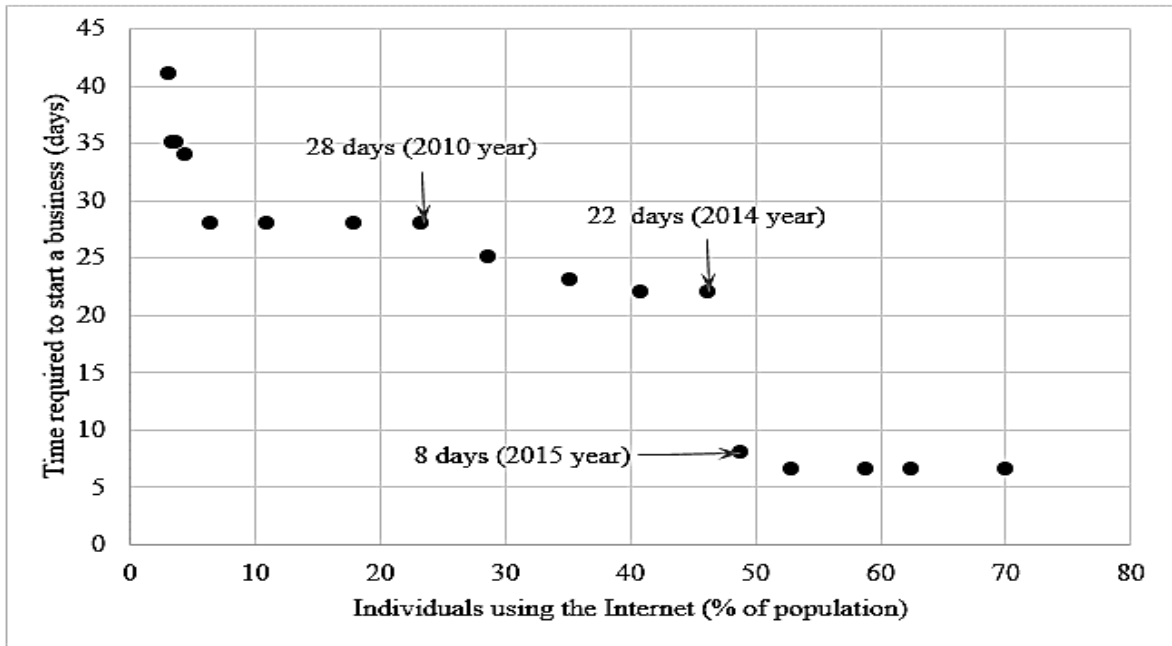


Figure 5. Ukraine: time required to start a business (days) dependently on spread of internet (fraction of internet users, % of population) \*

\*Calculated and built by the author based on data [17]

The source “Doing Business 2015: Going Beyond Efficiency” [6], that was published by the World Bank Group to present results of analysis of business regulations comparing 189 countries, pointed that in that period Ukraine improved conditions for registration of property rights and taxation, implemented electronic system for payments and decreased the number of tax payments from 28 to 5. Because of that Ukraine moved in the ranking of ease of doing business on 96th from 112th place. Thus, digitalisation leads to positive consequences for economy.

Rising fraction of internet technology users correlates with the number of new businesses registered (Figure 6). This indicator exceeded value of 50000 last year.

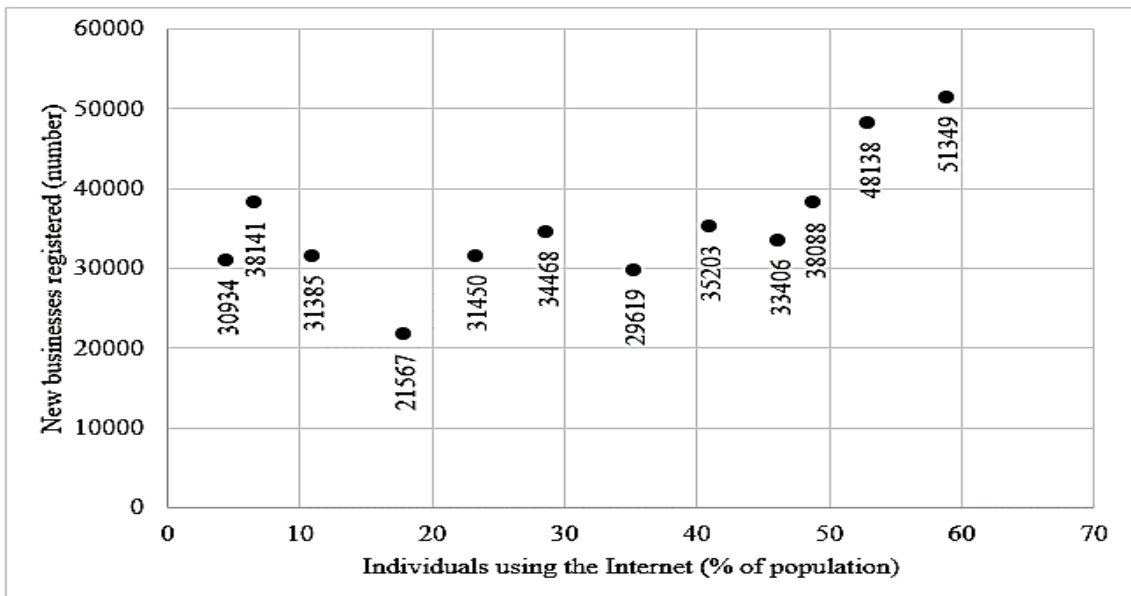


Figure 6. Ukraine: new businesses registered (number) dependently on spread of internet (fraction of internet users, % of population) \*

\*Calculated and built by the author based on data [17]

According to the analysis results, sizes of ICT service exports that include computer, communications, and other information services and its contribution into entire Ukraine service export revealed that this branch becomes from year to year more and more important for national economy (Figure 7). It is seen, the income from export by this digital service jumped up to 2760 mln USD in 2017 and it partition in total export was 19%. Nowadays, because of pandemic most of entrepreneurs, state establishments and universities are working distantly. That means that online technologies become more demanded in such situation.

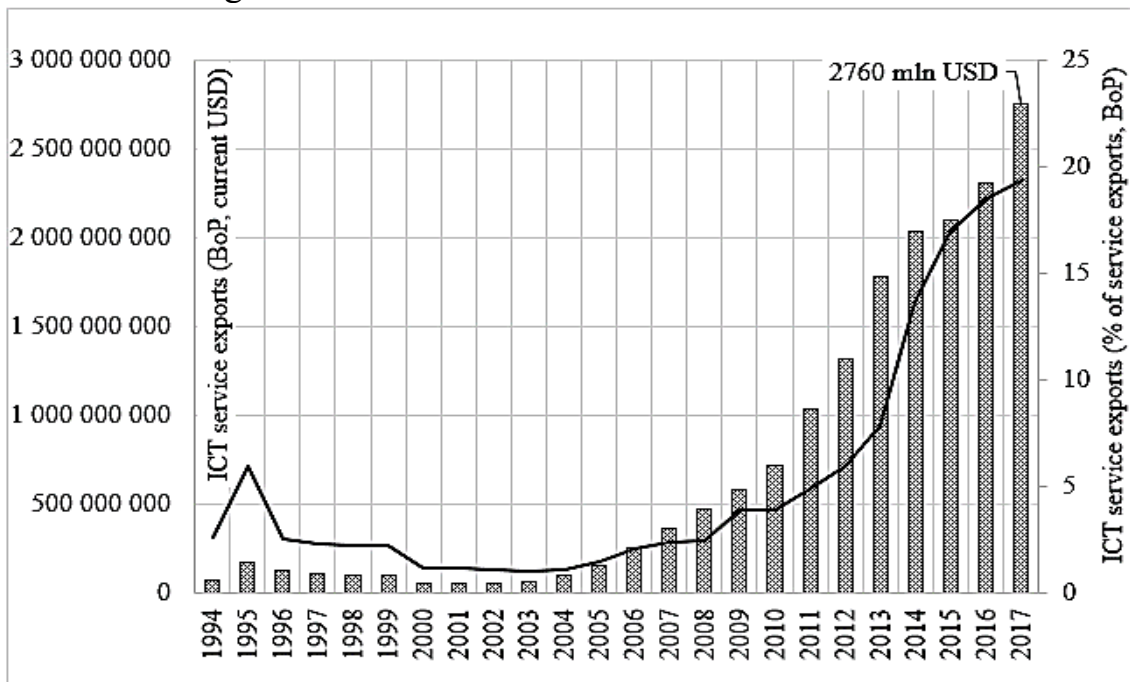


Figure 7. ICT service exports (current USD) and its fraction in service export\*

\*Calculated and built by the author based on data [17]

Digital branch has formed new niche among conventional industries for the last decade. Moreover, it penetrates them. For example, such tools as geoinformational systems and satellite data are irreplaceable way to make map of precipitations, temperature and soils conditions for yield forecast in agriculture. Special software and internet services provide precise control for industry production. IT are used in education for online learning. Furthermore, thanks to information technologies, people created virtual reality in the game business for entertaining and making money legally. In addition, IT-companies in Ukraine actively practice new type of business deal that is known as outsourcing.

Ukrainian entrepreneurs implement and use online services like BJET [1] that is complex enterprise resource planning – system based on the cloud technology for business development and control; IT-ENTERPRISE [11] that helps to plan and account business projects, control finance system, manage costs, account work time, keep relationship with clients; PERFECTUM [16] that joined facilities of ERP and CRM – systems and others. It is worth to say, that many other tools are based on the Google-technology that proposes different products for business. There are Google Ads – service for creation, replacement and promotion of advertising, SEO – search engine optimisation – system for sites promotion; Google Analytics – system of tools



to analyse customer behaviour; Google My Business [7] and Google WorkSpace [8] – for comfortable work with business partners and others. Such online service as DIIA [4] for entrepreneurs and representatives of state structures has recently appeared in Ukraine as a product of ukrainian programmers. It becomes more and more popular because of its freewaresness. Next well-known ukrainian IT-products as DEBET PLUS [3], BOOKKEEPER [2], iFin [9], Dilovod.ua [5], WEB-Zvit [18] are used by our business as systems for accounting, taxation, electronic payments, reports creation and documents sending into state institutions. Mentioned notfull-list of IT-services is evidence of new economical area that makes money, pays taxes, and helps representatives from other industries in doing business successfully.

**Conclusion.** Information technologies caused considerable changes in economy. IT-sphere is power incentive for national economic development. It makes economic processes easier, faster, cheaper, and more reliable. According to the analysis results, the main feature of this quality transformation is technology penetration into education, medicine, industry, agriculture, involvement of financial system and its modification to provide majority of operations instantly. IT surrounds everyday life of people, improves communication, and helps to establish partnerships among them. Internet development induced appearance of electronic business or, to be precise, digital business. Thanks to it, everything can be presented, promoted, ordered, rented, bought, and paid by internet. Everyone can be informed, educated, verified, controlled, credited, interviewed, and hired for the work via online. Active IT-usage is not only digitalisation of economy that makes money successfully, but also mostly digitalisation of mankind everyday life that makes it comfortable and sociable.

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## 5.2. MODERN INFORMATION TECHNOLOGIES FOR AUDIT RISK ASSESSMENT

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**Summary.** The components of audit risk are identified. The characteristic of qualitative, quantitative and analytical methods of audit risk assessment is given. The advantages of using expert assessments in determining the components of audit risk are shown. An algorithm for calculating the assessment of expert competence has been formed. The characteristics of the indicators for assessing the opinion of experts are given. The necessity of using fuzzy logic apparatus to determine expert assessments of audit risk components is proved. The structure and characteristics of expert system's main modules for determining audit risk are determined.

**Keywords:** audit risk, expert assessments, fuzzy logic, expert system, competence, algorithm.

Basis of successful realization of auditing is an estimation of audit risk, as probabilities of recognition by the auditor of the reliability of accounting reports when it may contain undetected significant errors. Composition of components and evaluation procedure are traditionally determined using models "big four" audit firms (Pricewaterhouse Coopers, Deloitte Touche Tohmatsu, Ernst & Young, KPMG).

The main components of audit risk are inherent risk, control risk and detection risk. At the level of financial reporting, inherent risk is the probability of event, which is that a material error may be made in at least one reporting item. Control risk is the probability of an event, which is that internal control system (ICC) may not detect a material error, provided that latter is made by the company's accounting. Detection risk is likelihood that the auditor will not detect a material error, provided that the

latter was made by the accounting department and not identified by ICC. By the probability multiplication theorem, the audit risk will be equal to the product of all three events probabilities [1].

Modern integration of information technologies and mathematical methods into economic processes makes it possible to talk about the possibility of using qualitative methods, quantitative methods (economic and statistical methods, including search methods, variance, standard deviation, etc.) and analytical methods of assessment for calculating audit risks (risk assessment, critical points calculation, scenario method, decision tree method, statistical testing method, Monte Carlo method).

The method of expert assessments is the most optimal for assessing the current state of accounting with a complex of logical and mathematical-statistical methods and procedures aimed at obtaining the necessary information from the expert. The main types of expert assessments include quantitative assessment (how much or how many times one estimate differs from another), point estimation (development of the ordinal or rank scale) and ranking (location of a set of objects in accordance with the reduction of their significance).

For the analysis of quantitative methods of qualitative expert information, special verbal-number scales are used, the most common of which is the Harington scale, that is, the scale of correspondence of verbal estimates with numerical. The most famous method of forming impartial group assessments of experts is the Delphi method. It is characterized by three features: anonymity, adjustable feedback, group estimates. Anonymity is achieved through the use of a system of questions and other methods of personal questioning. Delphi method has a register of recommendations and requirements for conducting examinations.

Most of the methods of rating assessments are based on the application of expert assessments. But their extended application creates many problems related to the validation of the results obtained. The disadvantages of expert methods include subjectivism, limited use, high costs for their conduct. At the same time, their role becomes more significant when the choice and decision-making must be carried out in conditions of risk and uncertainty, since there is not always reliable information about the state of the system that is being investigated and cannot always be formulated in mathematical form.

In general, the methods of expert assessments represent a complex of logical and mathematical-statistical methods and procedures related to the activities of experts in processing necessary for the analysis and decision-making of information. Evaluated expert opinions in quantitative form are called expert assessments. They can be individual and collective. Obtaining individual expert assessments is called an expert survey, and a set of procedures required to obtain collective expert assessments, including an expert survey, is called an expertise.

The methods of expertise are devoted to many scientific and methodological works, according to which the following main stages are distinguished: 1) preparatory stage, at which the purpose of the expertise is determined; the program and methodology of expert evaluation are developed; experts are selected; 2) stage of conducting, on which a system of evaluation criteria is formed and an expert survey

is conducted; 3) stage of processing the results of the survey, which aims to analyze expert information and aggregate expert assessments; 4) final stage at which the analysis of the results of the examination, the development of recommendations and decision-making on the satisfaction of the results [2-4].

One of the more important tasks is the formation of an expert group, since the expert must have some competence in the subject area, have the skills of analyzing the received information, etc. Expert competence consists of objectivity, contact and interest in expertise. Competence should be evaluated by three groups of indicators: objective indicators related to professional experience; indicators that characterize the level of expert awareness about the object of expertise; indicators characterizing the expert's ability to work in a team.

Methods for assessing expert competence are divided into: prior (self-assessment methods, mutual evaluation, test and documentary methods); posterior methods based on the axiom of insomnia (expert competence is determined on the basis of the analysis of the "proximity" of expert assessments of individual experts to the general assessment).

In general, the algorithm for calculating the evaluation of the  $i$ -th expert by  $j$ -i indicators has the following stages.

Step 1. Building a score matrix

$$Q = \begin{bmatrix} q_{11} & q_{12} & \dots & q_{1j} \\ q_{21} & q_{22} & \dots & q_{2j} \\ \dots & \dots & \dots & \dots \\ q_{i1} & q_{i2} & \dots & q_{ij} \end{bmatrix} \quad (1)$$

where  $q_{ij}$  – points scored by  $i^{\text{th}}$  expert ( $i = \overline{1, m}$  – number of experts) on  $j^{\text{th}}$  indicators ( $j = \overline{1, n}$  – number of indicators).

Step 2. Determination of the amount of points for each expert on all indicators

$$\sum_{j=1}^n q_{ij}$$

Step 3. Calculation of the weight coefficient of each expert on all indicators:

$$w_i = \frac{\sum_{j=1}^n q_{ij}}{\sum_{i=1}^m \sum_{j=1}^n q_{ij}} \quad (2)$$

The competence factors of experts can be calculated by posterior data, that is, by the consequences of the evaluation of objects. The main idea of this calculation is the assumption that the competence of an expert should be assessed by the degree of consistency of his estimates with the group evaluation of objects.

To simplify further presentation, it is possible to limit the case  $h = 1$ . That is, when group evaluation of objects is based on only one indicator. The algorithm for calculating group estimates and expert competence coefficients for this case is:

a) initial conditions at  $t = 0$

$$k_j^0 = \frac{1}{m}, (j = \overline{1, n}) \quad (3)$$

that is, the initial value of the coefficients of competence for all experts is the same and equal to each other;

b) ecurrent ratios for  $t = 1, 2, 3$  are:

- group scores for the  $i$ th object on the  $t$ th step based on individual ratings  $x_{ij}$

$$x_i^t = \sum_{j=1}^n x_{ij} k_j^{t-1}, (i = \overline{1, m}) \quad (4)$$

- normative coefficient

$$\lambda^t = \sum_{j=1}^n \sum_{i=1}^m x_i^t x_{ij} \quad (5)$$

- coefficients of competence for the  $i$ th expert on the  $t$ th step

$$k_j^t = \frac{1}{\lambda^t} \sum_{i=1}^m x_i^t x_{ij}, (j = \overline{1, n-1}) \quad (6)$$

- coefficients of competence of  $m$ th expert based on normalization conditions

$$k_m^t = 1 - \sum_{j=1}^{n-1} k_j^t \quad (7)$$

c) a sign of the end of the iterative process

$$\max(x_i^t - x_i^{t-1}) < \varepsilon \quad (8)$$

Actual evaluation is carried out as follows.

A certain number of experts ( $m$ ) evaluates  $n$  objects by a number of indicators  $h$ . Evaluation results are represented by quantities  $x_{ij}^h$ , where  $i$  = object number,  $j$  = expert number:  $h$  = indicator number. Quantities  $x_{ij}^h$  obtained by direct estimation methods (are numbers). As a group estimate for each object, you can get the average weighted value of its estimate

$$x_i = \sum_{h=1}^l \sum_{j=1}^n q_h x_{ij}^h, (i = \overline{1, m}) \quad (9)$$

where  $q_h$  = coefficients of weight of indicators of comparison of objects;

$k_j$  = coefficients of expert competence.

Quantities  $q_h$  and  $k_j$  are normalized, that is,  $\sum_{h=1}^l q_h = 1, \sum_{j=1}^n k_j = 1$ .

The coefficients  $q_h$  can be defined by expert means as the average weight

$$q_h = \sum_{j=1}^n q_{hj} k_j$$

coefficients of the  $h$ th indicator for all experts, i.e.

During the evaluation, methods of ranking indicators are also used. There are two main approaches to ranking. In the first case, the expert is presented with all the many objects of expertise, and he determines the best of them, and then chooses the best of the remaining unselected objects, etc. In the second case, only some subset of the set of objects is presented to the expert, the elements of which he must rank. Next, another object that is not included in an already ordered subset is presented to the expert, and he must specify a place for this object among the previously ranked ones. The process continues until each expertise object has its own rank.

One of the more important tasks is to assess the consistency of expert opinion,

since it is believed that the aggregated opinion of experts is reliable only if all expert opinions have a high level of consistency [5]. Three groups of indicators are traditionally used to estimate the consistency of ranking: rank correlation coefficients, variation coefficients and concordance coefficients [6].

Rank correlation coefficients allow to establish the tight relationship between two rankings, measured in the range [1]. The higher the coefficient value, the more consistent the ranking is the most prominent indicators of this group are the Spearman correlation coefficient and the Kendall correlation coefficient. The disadvantages of correlation indicators include the inability to coordinate estimates of the expert group as a whole.

Rank variation coefficients are used to identify examination objects, strongly contradict each other, for the purpose of their further detailed analysis. The most famous of them is the variation coefficient of rank  $j^{\text{th}}$  object (varies in the range [0;1]; the lower the value for  $j^{\text{th}}$  object, the higher the coherence of experts' opinions about this object) and the Becker variation coefficient (the coefficient takes values in the range [0; $n/2$ ]), which is more sensitive to increasing distances between ranks than to the scattering of expert opinions.

Concordance coefficients allow to assess the consistency of all expert opinions when ranking objects. The most common are the dispersion coefficient of concordance (takes values in the range [0;1]; the greater its value, the more consistent and reliable expert opinions) and entropy concordance coefficient (takes values in the range [0;1]; the greater its value, the more consistent and reliable expert opinions).

Absolute and relative indicators are also used to assess the consistency of numerical estimates. Absolute include variation, mean deviation, dispersion; to relative – oscillation and variation coefficients [7].

In an even comparison, the expert, comparing pairs of objects, indicates either a better object or their equality. Such a procedure can be used even when the difference between objects is so insignificant that their ranking is practically impossible. The procedure of even comparisons of examination objects is carried out on a scale of intervals or preferences. When using the interval scale, the numerical estimate  $b_{ij}$  shows how much the  $i^{\text{th}}$  object exceeds the  $j^{\text{th}}$  on a given scale, and when using the relationship scale, how many times the  $i^{\text{th}}$  object surpasses the  $j^{\text{th}}$  on a given scale.

Comparison results – matrix of even comparisons, to estimate the consistency of which the coefficient of matching is determined

$$K_{\text{yзr}} = \frac{A}{A_{\text{max}}} = \frac{2}{mn(m-1)(n-1)} \sum_{i,j=1}^{m,n} m_{ij}(m_{ij} - 1) \quad (10)$$

where  $m_{ij}$  = number of experts who believe that the  $i^{\text{th}}$  object surpasses the  $j^{\text{th}}$ ;

$$A = \sum_{i,j=1}^{m,n} \frac{m_{ij}(m_{ij} - 1)}{2} = \text{number of expert matches on the advantage of the } i^{\text{th}} \text{ object over the } j^{\text{th}};$$

object over the  $j^{\text{th}}$ ;

$$A_{\text{max}} = \frac{mn(m-1)(n-1)}{4} = \text{maximally possible coincidence of expert}$$

opinions.

This factor takes values in the range  $[(m-2)/(2m-2);1]$ , and in the case of complete consistency of opinions of experts takes a value equal to 1.

In the process of even comparisons, the expert not only selects the most priority object in each pair, but can also specify how many times this object is dominated by another. When determining the priority of the object, it is advisable to use the scale proposed by Thomas Saati [8].

The theory and practice of expert assessments are mathematical enough. Two interrelated branches can be distinguished – mathematical models of expert behavior and mathematical and statistical methods of analysis of expert estimates.

Expert behavior patterns are based on the assumption that experts evaluate a parameter that interests auditors with some errors. Expert group estimates are viewed as a set of independent equally distributed random variables with values in the corresponding space of objects of numerical or non-numerical nature. It is assumed that the expert often chooses the right decision than the wrong one. In mathematical models, this is expressed in the fact that the density of the random variable distribution – the expert's answer monotonically reduces with an increase in the distance from the center of the distribution – the true value of the parameter. Mathematical models of expert behavior are based on methods of expert survey planning, collection and analysis of expert answers. Obviously, the more assumptions put into the model, the more conclusions can be drawn on the basis of expert assessments viewed as statistical data – and the less reasonable these conclusions are if there is no basis for accepting the model used.

The main common methods of mathematical processing of expert assessments can be distinguished: checking the consistency of expert opinions (or classification of experts if there is no consistency) and averaging the opinions of experts within the agreed group. Since the responses of experts in many procedures of expert polling are not a number, but have the nature of objects of non-industrial nature, such as gradations of qualitative features, ranking, partitioning, results of even comparisons, fuzzy advantages, etc., methods of statistics of objects of non-industrial nature are useful for their analysis.

Fuzzy logic is used as a special section of multi-valued logic and as a specific set of theories, including linguistic variables, fuzzy sets, approximate reasoning, fuzzy control, as well as generalized constraints, granular computation, and word computation. The main difference of the method is the introduction of linguistic variables (subjective categories). Linguistic variables are variables that cannot be described using mathematical language, that is, they are difficult to provide an accurate (objective) quantification. These concepts have no clear boundary and cannot be represented by an accurate mathematical description.

Fuzzy numbers obtained as a result of "not entirely accurate measurements" are largely similar to distributions of probability theory, but are free from the deficiencies inherent in the latter: a small number of analyzable distribution functions, the need for their forced normalization, compliance with the requirements of additivity, the difficulty of justifying the adequacy of mathematical abstraction to describe the behavior of actual quantities.

Compared to the probable method, the fuzzy method allows to dramatically reduce the amount of computations performed, which in turn leads to an increase in the performance of fuzzy systems [9]. The main advantages of fuzzy logic in solving problems of expert evaluation are: the ability to operate with incoming data specified fuzzily; possibility of fuzzy formalization of evaluation and comparison criteria; possibility of qualitative evaluation of both input data and output results, etc.

The central place in fuzzy logic occupies a fuzzy logical conclusion

The process of fuzzy conclusion is a procedure for obtaining fuzzy conclusions based on fuzzy conditions or prerequisites. The basis of the fuzzy conclusion is the basis of the rules, as well as the function of belonging to linguistic terms, and the result is a clear value of the variable. Fuzzy logical inference is the approximation of dependence  $y = f(x_1, x_2, \dots, x_n)$  by fuzzy knowledge base and operations on fuzzy sets.

The creation of a fuzzy model includes four stages:

1) stage of structural identification of the model, which determines the number of incoming and outgoing linguistic variables, the name of linguistic variables and their terms, the task of the universal of terms, the choice of types of belonging functions, the definition of the structure of logical rules;

2) stage of parametric identification of the model, on which the parameters of the functions of the affiliation of terms are determined and logical rules of management are formed;

3) stage of approbation of the model;

4) stage of adjustment of the model.

Several fuzzy conclusion algorithms are used in practice. According to Mamdani's algorithm, the input of the fuzzy logical conclusion system provides input variables that carry information about the results of expert evaluation. Next are held:

1) formation of the basis of the rules of the fuzzy conclusion system;

2) phasification, or introduction of fuzziness;

3) aggregation of subconditions;

4) activation of the results, that is, finding the degree of truth of each of the subgenres of the rules of fuzzy products;

5) accumulation of pouches, that is, finding the function of belonging for each of the original linguistic variables;

6) dephasification, that is, determining the quantitative value for each of the original linguistic variables.

In Mamdani's algorithm, implication is modeled by a minimum, and aggregation by a maximum. This scheme can be called basic for everyone else, since historically it was the first. Other algorithms are also used: the Tsukamoto algorithm is a modification of the Mamdani scheme, but is intended only for monotone functions of the origin parameter; The Sugeno algorithm, or Takagi-Sugeno algorithm, is used when not the form of the function of belonging to the output parameter is known, but the weights through which the input parameters affect the result; Larsen's algorithm in some cases is more accurate than Mamdani's (non-monotonous input fuzzy sets) algorithm, but requires more multiplication operations. It should be noted that the



advantage of the Mamdani's algorithm is that fuzzy knowledge bases are transparent and intuitive, whereas when using other algorithms, there is a difficulty in choosing linear dependencies between the studied parameters [10].

As a fuzzy model for assessing the components of current audit risks, it is proposed to use a tuple:

$$RSK = \langle G, QL, \{a_{ij}\}, R, Def \rangle \quad (11)$$

where  $G$  = fuzzy cognitive graph that reflects the relationship of basic concepts involved in risk assessment;

$QL$  = term-set of linguistic estimates of parameter values with a corresponding fuzzy classifier;

$\{a_{ij}\}$  = set of weights of edges of the graph  $G$ , to find which the preference relations on the graph are determined, which in turn allows to determine the normalized Fishburne scales (weights of connections) for the  $GD_{ij}$  arcs of the graph  $G$  by non-strict ranking;

$R$  = many rules for aggregating the impact of different concepts of the lower level on the concept of the upper level;

$Def$  = function of defasification of fuzzy values obtained as a result of calculations on the fuzzy model.

The definition of expert assessments of audit risk can be implemented using an expert system, that is, a package of reference programs that allows the auditor to make qualified decisions. The system should include at least three modules:

- Module 1 "Processing and coordination of expert information";
- Module 2 "Risk assessment based on expert information";
- Module 3 "Assessment and risk management based on metric characteristics of current and acceptable risk levels".

In Module 1, the input comes expert opinions on the issues, concerning the assessment of the components of audit risks. Input information for expert opinion processing system is: user list; list of questions; list of scales; list of ratings. At the output of the module, they receive: a report on the results of tours (intermediate and final results on all tours); report on all estimates (evaluation of all experts within one round). There are two types of users in the system: an auditor and an expert. The auditor has the following rights: adding experts to the system; removal of experts from the system; adding new questions to the system; removal of issues from the system; summing up intermediate and final results on all issues; review of assessments and results on all issues. The expert has such rights as sending assessments on current issues; view the results of the previous round (if any).

The functioning of the Module 1 is as follows: after sending out questions to experts on which it is necessary to obtain and coordinate information, the auditor must wait for at least one question to be answered by all experts. In this case, the evaluation by the expert includes directly the assessment of the question (in the form of a number or linguistic variable); comment on the assessment explaining it. After collecting the opinions of experts, intermediate results for the current tour are summed up.

When analyzing expert information, the following characteristics are

calculated:

1) average group estimate (the value equal to the arithmetic mean of all self-estimates);

2) simple estimate (arithmetic mean of all estimates);

3) weighted average score (the sum of the expert's works on his self-assessment, divided into the sum of all self-assessments);

4) median (all estimates are arranged in ascending order, two averages are chosen by number (say, if the estimates are only twelve, then the sixth and seventh are taken, if the eleven, then twice the sixth estimate is taken and their average arithmetic is calculated);

5) confidence interval (definition of quartiles – 1/4 of the difference between maximum and minimum estimates. The lower limit of the confidence interval will be (minimum + quartile), the upper – (maximum – quartile).

Summing up the results is repeated until the results of the next round will not satisfy the condition of consistency.

The result of Module 2 is an assessment of current and acceptable risks and a decision on the need to reduce current risks to an acceptable level. The user of the module is an auditor who in his activity is guided by external (legislative base) and internal-corporate normative documents. The following information is entered into the system: basic processes of information processing and information assets that support data on audit risks. Next, the information is introduced: about the risks and threats generated by them; about existing protective measures. In addition to the information necessary to assess the level of current components of audit risks, an array of values characterizing the magnitude of acceptable risk is specified.

The values of the coefficients of the acceptable risk function, as well as the points characterizing the current risks, come to the input of module 3. This module calculates the integral values of risks and, in the event of unacceptable risks, solves the problem of their reduction. The main users of the system are the auditor and experts. As elements of management are allocated: normative legal acts (requirements of laws, resolutions and other normative documents), establishing limitations of indicators; intracorporate normative documents (various provisions, methods, instructions) establishing requirements within the framework of this enterprise; methods of decision theory necessary to perform calculations of indexes of degree of unacceptability and trajectories of movement to the area of acceptable risk; data processing principles and methods for processing input parameters.

The software framework of the expert audit risk detection system can be implemented in the software development environment of Microsoft Visual Studio 2010, which is based on the use of C# language to perform logical and mathematical operations. Visual Studio includes a source code editor with support for IntelliSense technology and the ability to easily refactoring code. The built-in debugger can work as a debugger of the source level, and a debugger of the machine level. In addition, the development environment includes a web editor, form editor, class designer, and database schema designer. The products of this line allow you to develop both console applications and GUI applications, including support for Windows Forms

technology, as well as websites, web applications, web services in both native and managed codes for all platforms supported by Windows, Windows Mobile, Windows CE, NET Framework, Xbox, Windows Phone, NET Compact Framework, Silverlight.

The default DBMS is SQL Server. The disadvantages of the environment include incompatibility with the OS family of Linux and macOS. Borland Delphi is an environment designed for the rapid development of application software for Windows, MacOSX, as well as iOS and Android operating systems. Thanks to a unique set of language simplicity and machine code generation, it allows you to interact with the operating system, as well as with libraries written in C/C++, quite low level, if desired.

It is also possible to use Microsoft Access, a database management system that Microsoft invariably includes in the professional edition of Microsoft Office. Access database occupies one of the leading places among systems for designing, creating and processing databases.

Platform "1C: Enterprise" is a software framework over the database. It has its own internal programming language, which provides access to data and the ability to interact with other programs through OLE and DDE. The client part of the platform operates in Microsoft Windows environment, and since version 8.3, also in the Linux and MacOSX environment. Since version 8.1, the server part of the platform in the client-server version of "1C: Enterprises" can function on Microsoft Windows and Linux.

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### 5.3. TOKENIZATION ROLE IN THE DEVELOPMENT OF THE COUNTRY ECONOMIC PROCESSES

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**Summary.** The scientific work is devoted to the evolution of the asset tokenization rules and regulations. The prospects for the land trade tokenization, the peculiarities of the movable and immovable property tokenization, the agribusiness possibilities in the context of the virtual asset's legalization, as well as the legislative problems of introducing the Law "On Virtual Assets" in Ukraine have been considered. The advantages and disadvantages of the virtual asset's circulation enactment have been analyzed.

**Keywords:** tokenization, land trade, virtual asset, cryptocurrency, blockchain, non-fungible token, agribusiness.

Ukrainian and foreign studies have established that in recent years Ukraine is the leader in the turnover of cryptocurrency in per capita terms, which ranks first in the world in terms of the number of services that accept cryptocurrency as a means of payment. According to the President of the Blockchain Association of Ukraine Mikhail Chobanyanu: «Now the turnover of cryptocurrencies in Ukraine is 1 billion UAH per day, which, in fact, are in the shadows». Thus, our shadow cryptocurrency trading is very active, and this is an indicator of many processes in the country:

⊗ First, it shows the interest of the population and business in modern means of payment like this;

⊗ Secondly, about the rather high level of education of the population in the field of modern payment technologies and software and hardware complexes related to them;

⊗ Third, the state lacks the legal framework governing the circulation of such assets and the rules for their treatment;

⊗ And finally, this indicates the development of cybercrime, because in this area the most common options for using cryptocurrency as a means of payment.

At one time, Ukraine became the fifteenth country in the world to launch Google Pay. Our country is ahead of many European countries in the implementation of this service and this is a great achievement, which emphasizes the interests of international investors in the introduction of modern information technology in the Ukrainian trading. This interest is based on the wide and rapid spread of new technologies among the population, which in turn emphasizes the education and progress of the average Ukrainian.

The analysis of materials of recent scientific developments also shows the progressiveness and modernity of scientific thought of domestic scientists, including young ones. Among the proposals and developed projects and startups you can see

the ideas of applying the principles of Blockchain, Big Data, Grid, Cloud Technology in almost all industries and in the agricultural sector in particular. The versatility and flexibility of these technologies allow us to bring the usual complex and monotonous processes to a new level of speed, transparency and security of implementation.

Ukraine has recently made a historically important decision regarding the country's land resources. At this stage, it is important to ensure the honesty, transparency and security (including cybersecurity) of the land trade in our country. This will gain public confidence in the mechanism of implementation of the Law of Ukraine on the conditions of circulation of agricultural land and as a consequence to increase the number of transactions, i.e. a really working Law, which will provide a new round in the development of the country's economy, the agricultural sector, in particular, and increase loyalty to the current government. Thus, the problem of the wound of the earth is quite relevant and can be solved by using modern information technology.

One of these technologies is tokenization. This concept is quite new in our language and has not yet become widespread in everyday life, therefore, it requires additional clarification. The generation of the first digital assets was made possible by the advent of Blockchain technology. It originated at the same time as the first cryptocurrency, Bitcoin, was released. The new technology significantly increases the security of operations within the network, so blockchain is now being actively implemented in many areas [11]. The increased level of transaction security led to an increase in confidence in the new segment, so the blockchain sphere began to actively develop.

Blockchain is a distributed ledger, which is presented in the form of a sequential chain, consisting of blocks of information about the operations performed (Fig. 1.). In this case, in each subsequent block, data about the previous ones is stored. The information registered in the blockchain cannot be changed or deleted by hacking the system or bribing an official. That is one of the blockchain architecture properties.

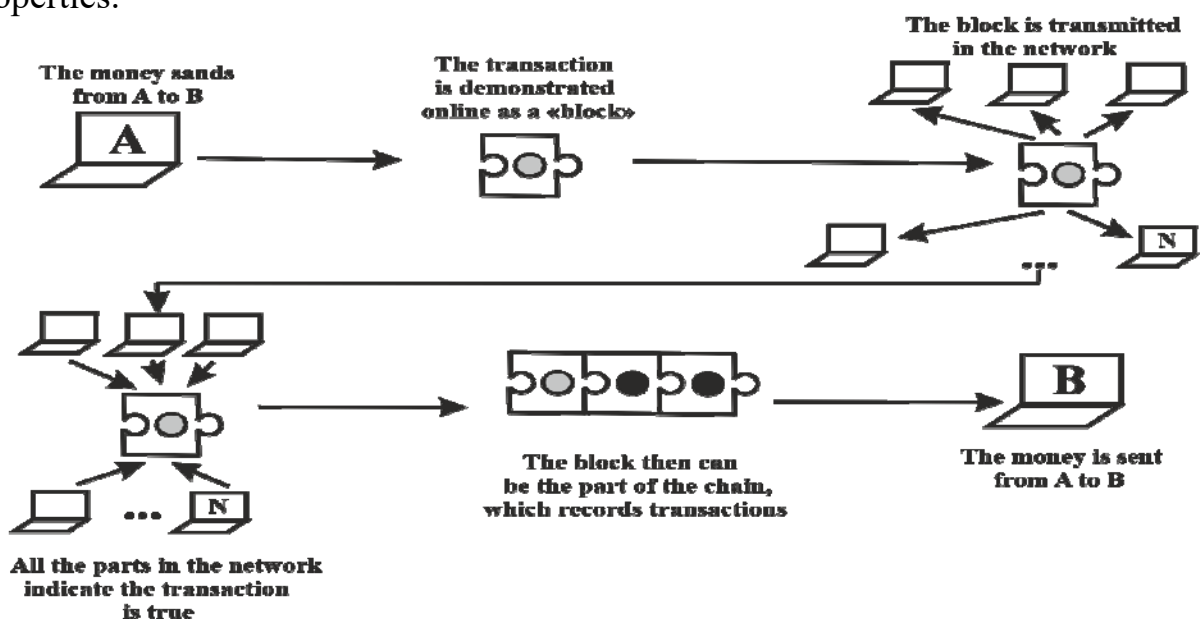


Figure 1 – The principle of the transaction

Thanks to new technology, it is now possible to digitize information and store it securely. At the same time, blockchain has such advantages:

- 🔒 immutability – deleting or editing blocks is impossible;
- 🔒 security – the network is able to repel a hacker attack;
- 🔒 transparency – data on transactions are made publicly available.

Immutability for tokenization, is very important as it enables you to trace the token's history: who created, when created; who sold, whom sold, when sold and at what price. Owing to this, investors cannot be afraid that their investments will be lost due to swindle, stealing, corruption or system error – tokens can always be tracked and refunded to the real owner.

One of the most progressive branches for the introduction of new information technologies is the financial market, where principles of tokenization are used quite actively. Electronic payments are an example of the financial market [1, 11].

Today, electronic payments occupy a significant part in the field of trade, which leads to an increased risk of fraud on the Internet, which increases the need to improve cybersecurity of electronic payments, as a solution to this problem using the method of tokenization.

The essence of tokenization to genius is simple. Tokenization is the replacement of real data on your plastic card with special digital values, the so-called token, which can be used for external or internal transactions. These values can be stored on your personal devices, such as a smartphone, or in any other digital memory. The data processing company can store the token without additional security certificates.

Tokens can be freely used in e-commerce. Online stores collect and save digital card imprints to provide the customer secure and convenient payment. In the physical environment, the token can be used for contactless purchases using a mobile application. When a user adds a credit or debit card to Google Pay, the application requests a token from the issuing bank. Google Pay then encrypts the token card and it becomes available for payment. During the card paying data is sent to a secure network gateway and comes to a special reader that converts the data into a token to make a transaction.

Tokenization provides the use of tokens instead of real payment card numbers of customers. In this case, for example, in the online store, most internal transactions do not require real bank card numbers, they are intended only for storage and use the number as a reference value. The introduction of tokenization will completely remove the real data of the cards with minimal changes in the online store's cybersecurity system and also it helps to increase the security of transactions.

Tokens are created without the use of mathematical operations, as a result of which there is no direct connection between the token and the original confidential data, which makes it impossible for attackers to use the token. Increased interest in tokenization is primarily due to the fact that it provides a high-level protection of confidential user data at potentially low cost.

The tokenization method also allows you to convert asset rights into a digital token. The development of blockchain has formed a completely new approach to the

evaluation of business, assets and their financing [6, 7]. If before only a large enough company could count on entering the market of large-scale borrowings through the placement of securities, now, thanks to the new phenomenon of assets tokenization, it is available to almost anyone.

There are certain types of values that are best suited for digitalization. Among them there are (Fig. 2):

- ⑥ Intangible assets (patents, trademarks, property rights, loan agreements, etc.);
- ⑥ Transfer of ownership (the right to lease or use the premises or transport).
- ⑥ Interchangeable values (water, gold, oil, etc.);
- ⑥ Non-fungible values (paintings, songs, etc.)



Figure 2 – Main asset types for digitalization

With fungible values, everything is simpler, this means that one token of such an asset can be replaced with another of the same token and nothing will change. Thus, it is possible to use the classic open blockchain, where all tokens are equal to each other and interchangeable.

The situation is more complicated with unique assets. The Non-Fungible Token (NFT) technology comes to the rescue, which works differently. Each non-fungible token is unique and cannot be tampered with, split, or subtly replaced [8, 9]. Such an organization is ideal for securing your rights to any unique object, be it an artwork in a single copy, a land plot or other movable / immovable property.

NFT technology is a relatively new phenomenon that, however, is increasingly making headlines. NFT was created in 2017 based on Ethereum smart contracts [1, 3]. According to the analytical service Nonfungible, over 5 million tokens have been sold during the existence of NFT. Operations with tokens are obviously cheaper, simpler and faster than operations with real objects with which they are bound.

The trading of non-fungible tokens is developing extremely rapidly and over the past few years, blockchain technology and infrastructure have undergone significant changes. However, today there are still many questions, according to what rules the NFT trade can operate and in what areas non-fungible tokens can be used.

For example, one of the progressive future trends of NFT is recording all transactions with territory and other assets to the blockchain. Due to the reliability of the blockchain, contracts, certificates and various documents can be issued in the NFT format, which will potentially help eliminate the risk of forgery.

From a blockchain viewpoint, asset tokenization is a secure process of transferring property rights or financial asset into the digital asset. Because all transactions are encrypted into information blocks and their movement can be traced

in the blockchain network, tokenization is a progressive, secure and transparent way to evaluate and manage any asset that represents value [6]. In fact, this is a new stage in the modern digitalization of the economy. This may seem far-fetched, but tokenization is having a profound effect on our lives and could transform entire industries tomorrow. Blockchain allows you to securely and efficiently token a wide range of real assets and businesses, where the logic of processes determines such applications, providing new benefits and opportunities for a variety of industries, including agribusiness or economic security.

Aspen Hotels and Resorts was one of the first companies to distribute real estate tokens (Figure 3). Now there are significantly more projects [5]. For example, OneGram, GoldMint – tokens secured by gold; BrickBlock – a platform for trading tokenized property; Mediatoken – token accounts on the social network Instagram. Almost all spheres were affected. Blockchain is evolving, transaction opportunities are growing, and we are at the very beginning of this journey.

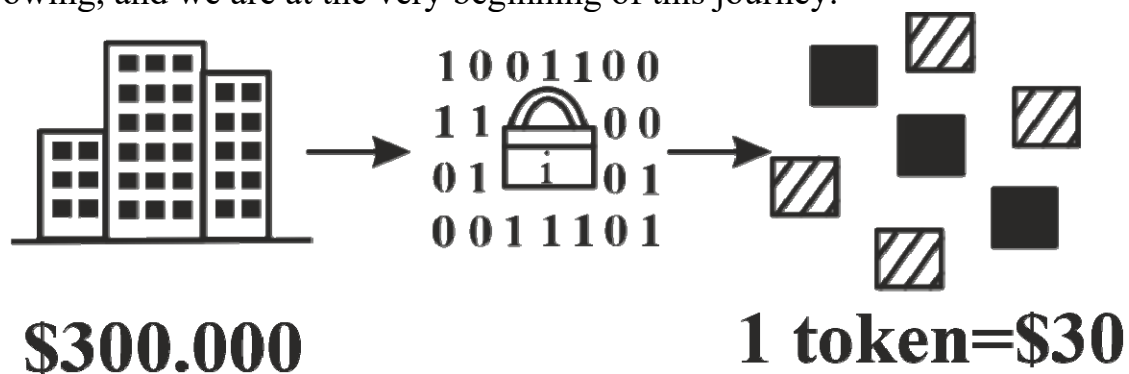


Figure 3 – An example of real estate tokenization

However, not everything in integration of the blockchain into the real world of is so good. Virtual assets are not legalized and legislatively not ordered in all countries. As a technology for owning a unique right, NFT is an excellent implementation option, but in the real world there is no regulation of these tokens, and therefore, they cannot be considered from a legal point of view as a kind of contract. Such an uncertain legal status is a temporary phenomenon, since the technology itself is at the very beginning of its development and application in various fields. And this issue in the legal field will be unequivocally settled, especially when the use of NFT becomes widespread in transactions related to the financial sphere.

In addition, there is another barrier to real estate tokenization – these are state registries, or rather, the principles of their working. Although making an entry in the state register without supporting documents does not mean the appearance / change of rights to the property itself, state registers still have a number of important functions. And therefore, assets, the rights to which are recorded in the registers (for example, the right to a land plot) cannot be fully tokenized without transferring the register itself to the blockchain [10].

The presence of uncertainty with the virtual asset’s circulation led to the formation of a corresponding legislative trend at the state level. By now, a fairly extensive practice has developed and regulation appears, which makes it possible,



within a legal framework, to conduct the placement of digital rights and other derivative instruments, the transfer of which entails the transfer of an asset. Regulation of tokens exists in the European Union countries. They apply EU directives and, where applicable, local blockchain legislation. We will talk about the development of such a legislative process in Ukraine further [4].

On September 8, 2021, deputies of the Verkhovna Rada adopted the draft law “On virtual assets” (Law) in the first reading, on October 5, the President of Ukraine returned the Law to Verkhovna Rada without a signature, submitting a number of proposals regarding the bodies regulating the circulation of digital assets. The amendments were adopted and the bill with the proposals of the President of Ukraine is awaiting consideration in the Verkhovna Rada from 01.11.2021.

The Ministry of Digital Transformation of Ukraine is the initiator of this Law, which will allow legal entities to tokenize property rights to raw materials, finished products and others, as well as sell them on the international trading in the form of tokens. This will greatly facilitate international trade and trade in the internal market, and all transactions can be made in one click on a mobile phone. You can buy and sell tokens for virtual currency and crypto coins, such as bitcoin, ETH or stablecoins, which are tied to fiat money – US dollars, euros and others. Ukrainian business will have the opportunity to tokenize coal, gas, metal, agricultural products, etc.

With the adoption of a profile Law, broad legal opportunities will open up for working with virtual money, companies will be able to launch cryptocurrency into business, which will contribute to the development of this trading. The Law will allow miners and exchange platforms to operate within the legal framework, which means protecting their rights, establishing clear rules of the game and guaranteeing security for users. At the same time, all participants in the virtual asset trades will be registered in a special state register.

The Law also lays down the legal prerequisites for Ukrainians, especially those involved in business, to have the opportunity to tokenize real assets. This will allow attracting additional funding.

For example, an agricultural company or a farmer wants to raise capital for a future harvest. He can issue tokens that will be tied by a future harvest (Fig. 4). The entrepreneur declares that he is selling the future harvest, for example, one ton of the harvest is equal to one token, indicates the price and puts it up for sale. Surplus crops can also be traded in the market in the form of tokens. This will allow Ukrainian companies to sell more products without tenders and complicated procurement procedures.

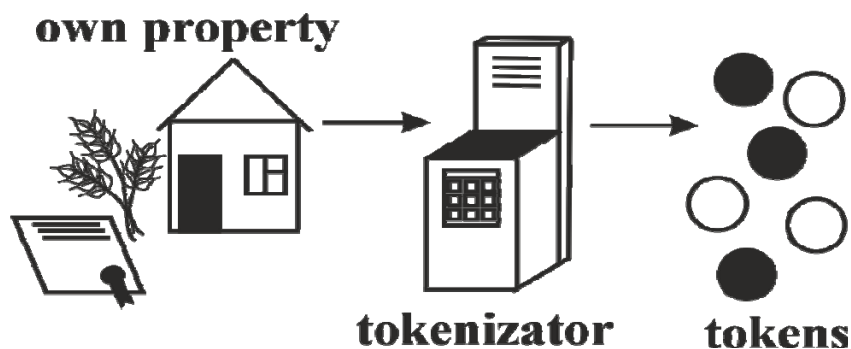


Figure 4 – An example of tokenization of future assets

The transition of agribusiness to the digital space will significantly raise land prices, optimize its use and allow Ukraine to take big steps to form a transparent and fair land trade [12]. Participants will have access to an open land register and detailed analytics. International investors will have the opportunity to invest directly in projects, and managers will be able to manage them from anywhere in the world [2]. Businesses will be able to use new technologies for land cultivation and quality control, and traders will be able to engage in international trade without intermediaries on a high-throughput exchange.

In the short term, the token will exist in the form of a full-fledged liquid instrument that can serve as the subject of a sale and purchase agreement. In turn, the buyer of the token has the right to receive from the businessman the agreed volume of goods or services upon reaching a certain date, or he will be able to resell the token in case of need for money.

However, consumer protection requires the people who issue digital assets to disclose what exactly those assets are. It's important to make sure they are truly connected to their real-world analogs.

All this will enable international exchanges of virtual assets to operate in Ukraine, giving our citizens and business access to the global trading, where it will be possible to both sell their own and buy foreign virtual assets. All this will create a new legal framework for working with virtual assets – with a state guarantee of property rights protection to it. Thus, Ukrainian business will not need to go to the markets of countries where this issue has already been settled.

In addition, the development of the virtual asset trading will contribute to the revitalization of other businesses types involved in the process. For example, banks will be able to open cryptocurrency accounts and carry out transactions on them, and legal and accounting companies, tax consultants will be able to provide services to this area of activity.

An obstacle to the introduction of the virtual asset trading is the low level of blockchain adoption by ordinary domestic consumers. In Ukraine, the number of people who know about blockchain is relatively small for the virtual asset trading to reach a large-scale turnover. The solution to this problem can be training events for businesses and companies working in the financial sector. Although, even with the existing situation with low awareness of the population and in a semi-legal position, the cryptoasset trading in Ukraine was able to develop, then the adoption of the law on virtual assets will give a significant impetus to its further growth and remove potential risks not only for business and other users, but also for the state.

However, a hindrance in tokenization using on an industrial scale may be the ineffective legal framework of our state and the slow adoption of bylaws and regulations. The Law “On virtual assets” has been under consideration for a year and a half. Based on this information, it can be concluded that the prospects for crypto-assets remain uncertain.

Asset tokenization using blockchain technologies can significantly minimize the probability of using dubious information, reduce trading costs and simplify the trading system, free the trading system from excessive commission costs,

bureaucracy, while increasing cybersecurity of cashless and paperless transactions. Digitization of the economic and tokenization of the territory will lead Ukraine to an economic breakthrough and will allow Ukrainians to live in a new way.

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#### **5.4. SOFTWARE ASPECTS AND INFORMATION TECHNOLOGIES OF CONSTRUCTION OF ECONOMIC-MATHEMATICAL MODEL OF COMBINATION OF BRANCHES OF AGRICULTURAL SECTOR ENTERPRISES**

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**Summary.** The paper considers two ways of constructing and analyzing the economic-mathematical model of combining industries of the agricultural sector. The

package of application programs "OPTIMA" is considered, which forms numerical economic-mathematical models of structure (combination) of branches of agricultural enterprises. The package has great potential based on initial technical and economic information (regulatory, statistical, expert), allows to form a numerical economic and mathematical model, optimize plans for activities and development of agricultural enterprises, include in the economic and mathematical model additional constraints and new activities, and to form the results of optimization of the structure of industries. On the other hand, the results of the analysis are processed by means of one of the office programs of the Microsoft Office Excel spreadsheet package. The data analysis was performed using the tool "Solution Search" in spreadsheets, which allows you to find an optimization solution with many variables. The process of modeling in the activities of enterprises in the agricultural sector makes it possible to make management decisions at different stages of operation and development of the enterprise.

**Keywords:** optimization model, agricultural enterprises, application package, modeling, spreadsheet information technologies.

Agriculture is one of the industries in which the use of information technology has a significant economic effect. This is because agro-industrial systems deal not only with socio-economic processes, but also with biological objects and natural and climatic conditions that are constantly changing. Enterprises of the agricultural sector operate and develop in conditions of significant uncertainty (constant change of weather conditions, conditions, scientific and technological progress, etc.). The use of information technology and economic-mathematical methods have created the preconditions for the practical solution of problems in conditions of uncertainty. However, it should be noted that the developed economic and mathematical models, as a rule, are determined, and, therefore, do not adequately describe economic processes and therefore the optimal solutions for them as production plans are rarely used in practice.

Issues of planning and management in conditions of uncertainty (incomplete information) are considered by such scientists as M.Ya. Petrakov and V.I. Rotar. These are mainly stochastic modeling methods that reject or do not consider the mechanism of adaptation of the system to often changing environmental conditions. Emphasis is placed on purely probabilistic, averaged parameter estimates. However, practical experience confirms the need to consider the properties of adaptation, flexibility, stability. I.P. Boyko, V.A. Kardash, and E.O. Rapoport worked on the problem of sustainable development of enterprises in the agricultural sector. Features of economic and mathematical modeling in agriculture are considered in the works of modern scientists [1, 2, 3, 4, 8]. Examples of creating models of linear, integer, stochastic and nonlinear programming and finding their optimal solutions are given. Elements of the theory of optimization on networks, matrix games, inventory management, queuing systems, dynamic programming, artificial neural networks are considered.

The main task for agricultural enterprises is to optimize the structure

(combination) of industries. This problem has been considered in many works of scientists [5, 6, 7]. In one of these publications a linear economic-mathematical model is used, in the other a stochastic model, which is reduced to a linear one, ie a probability distribution function, in another work fuzzy sets are used. It should be noted the inexpediency of using fuzzy sets in the management of agricultural production, as there is statistical, research, experimental, regulatory, etc. information. Therefore, in making decisions about agricultural enterprises in conditions of uncertainty, considering economic risk, as well as for the development of strategic and tactical plans of agricultural enterprises, it is proposed to use a stochastic economic and mathematical model [7].

In the developed model, the agro-industrial enterprise has the appropriate resources that can be managed if funds are available. In addition, the company can grow  $I$  ( $i = 1, 2, \dots, I$ ) crops on  $Q$  ( $q = 1, 2, \dots, Q$ ) technologies and on  $\Theta$  ( $\theta \in \Theta$ ) weather conditions. Crops can be of different varieties, which are grown on arable land of different quality, under them can be applied different doses of organic and mineral fertilizers, plant protection products and so on. All this is reflected in the relevant technology. The set of all technologies for the  $i$ -th culture in the model is denoted as  $Q_i$ . The planned sown area of the  $i$ -th crop, which is planned to be grown according to the  $q$ -th technology and under the  $\theta$ -th weather conditions, is marked as  $X_{i q \theta}$ . Let  $Y_{j m f k \theta}$  be the planned livestock  $j$  ( $j = 1, 2, \dots, J$ ) of the sex-age group  $f$ -th ( $f = 1, 2, \dots, F$ ) of the potential productivity of the  $k$ -th ( $k = 1, 2, \dots, K$ ) livestock industry, which are grown on the  $m$ -th technology (productivity) and kept under the  $\theta$ -th weather conditions. Livestock is divided into  $K$  ( $k = 1, 2, \dots, K$ ) industries (cattle, pigs, etc.). Animals of the  $k$ -th branch of the  $j$ -th sex-age group can be kept according to different technologies (productivity)  $m$  ( $m \in M$ ), which have  $f$  ( $f \in F$ ) potential variants of productivity. It is assumed that the potential of animals may not be fully exploited. Optimization of the diet of animals was implemented in a separate model, which was developed by scientists S.I. Nakonechny and S.S. Savina [6]. It is known that the company gives part of the grain to produce feed, pulp should be used at special feedlots, straw and part of the bud should be used for fertilizer and more.

The model considers the weather condition, under which conditions, respectively, can be obtained:  $\theta = 1$  - low-yielding year;  $\theta = 2$  - year of yield is lower than average, but higher than low;  $\theta = 3$  - average yield year;  $\theta = 4$  - year of yield is higher than average, but lower than high,  $\theta = 5$  - high-yield year. Based on statistical and experimental data, it is determined that the probability of the corresponding states is equal to:  $P(\theta = 1) = 0,062$ ;  $P(\theta = 2) = 0,218$ ;  $P(\theta = 3) = 0,397$ ;  $P(\theta = 4) = 0,258$  and  $P(\theta = 5) = 0,065$ .

Also, in the economic-mathematical model of enterprises of the agricultural sector included dependencies that describe the process of formation of system characteristics (maneuverability, inertia, economic risk, etc.). Maximization of the mathematical expectation of marketable products, profit and profitability, as the ratio of profit to cost, was used as optimality criteria.

The formation and analysis of the economic-mathematical model of agricultural enterprises is too labor-intensive. It should be noted that the developed

economic and mathematical models of functioning and development of agro-industrial complex are practically not used due to the lack of appropriate software. Therefore, two ways of implementing the economic-mathematical model are considered.

In the first method, a package of application programs "OPTIMA" (Application package "OPTIMA") was developed. PPP was created in the visual software development system Borland Delphi 7.0, the executable code is 1.23 MB, implemented for IBM-compatible PCs of Pentium class and above under the Windows operating system.

The package of applications is implemented by computing modules:

- module *untModule.Simplex* - a module in which the optimization of the objective function (by the criterion of maximum profit or maximum marketable products) by the simplex method;
- *untOptim* module - a module that allows you to save as a file a table with the original data, transfers data to the program *Output.smt* for processing, and also allows you to save the results of calculations as a file;
- *untToolBar* module - allows you to organize work with the software environment using the quick menu. This menu allows you to view the result, data or quit the OPTIMA software environment;
- modules *untEnterCow*, *untEnterCultura* and *untEnterUrogaynost* - are responsible for reading and outputting arrays of initial data on farm animals (productivity, price, feed requirements, maintenance), crops (yield, price, costs, by-products) and feed;
- *untkoef* module - is responsible for displaying initial and calculated data from *untMain*, *untEnterCow*, *untEnterCultura* and *untEnterUrogaynost* modules in dialog boxes.

Structurally, the software environment includes a main module (*untMain*), which organizes communication with other modules, contains the entered values of constants, types of variables, declarations of global variables, and in addition the module calculates auxiliary values: the cost of keeping cows, the cost of crops, cost, profit, profitability and calculation of model parameters; module for optimizing the objective function by the simplex method (*untModule.Simplex*); module for saving optimization results (*untOptim*); module for working with the quick menu (*untToolBar*); modules for data entry on cows, crops and feeds (*untEnterCow*, *untEnterCultura*, *untEnterUrogaynost*); model coefficient output module (*untkoef*). The algorithm of interaction of software modules "OPTIMA" is shown in Fig.1.

The user interface of the software product is easy to use. To start working with the software environment "OPTIMA", you must perform the following steps:

1. Create a folder on your desktop called "OPTIM".
2. Move the "optim.exe" file to the "OPTIM" folder.
3. Run the "optim.exe" file.
4. The following folders will be created in the "OPTIM" folder:
  - "DATA" - contains files with input data;
  - "PROGRAM" - contains files with program codes;

- "RESULT" - contains the results of the program;
- file "optim.exe" - executable file and files of the corresponding forms.

5. The "optim.exe" file is used to run the software package. This is a self-extracting file. The next step is to follow the instructions in the window that appears. If the user researcher wants to place the unpacked documents in another folder, you must specify its name and path in the input field. After downloading the software environment on the screen (at the top) appears the main menu bar of the program with items with File, Data Entry, Results, Viewing (Fig.2).

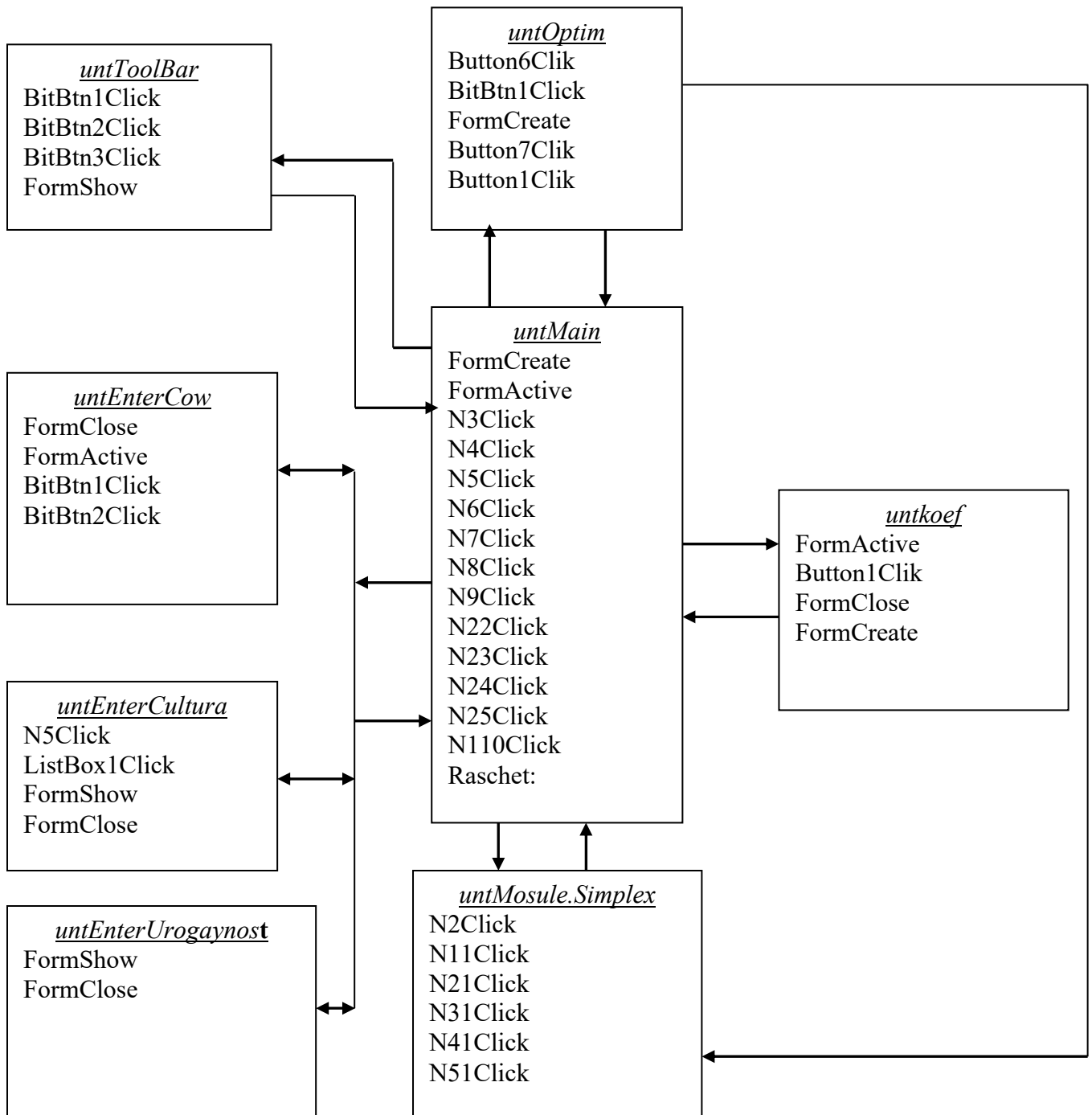


Figure 1 – Software modules "OPTIMA"

At the beginning of the work, it is necessary to enter data on animals, crops and feeds. To enter data on animals in the menu, sequentially execute the commands *Data entry* ⇒ *Cows*, in the corresponding window *Data entry on animals* fill in the fields *Productivity of animals*, *Profitability of animals*, %, *Commodity products*, UAH / kg and save the data by clicking *Save* and then this procedure is performed on all other animals.

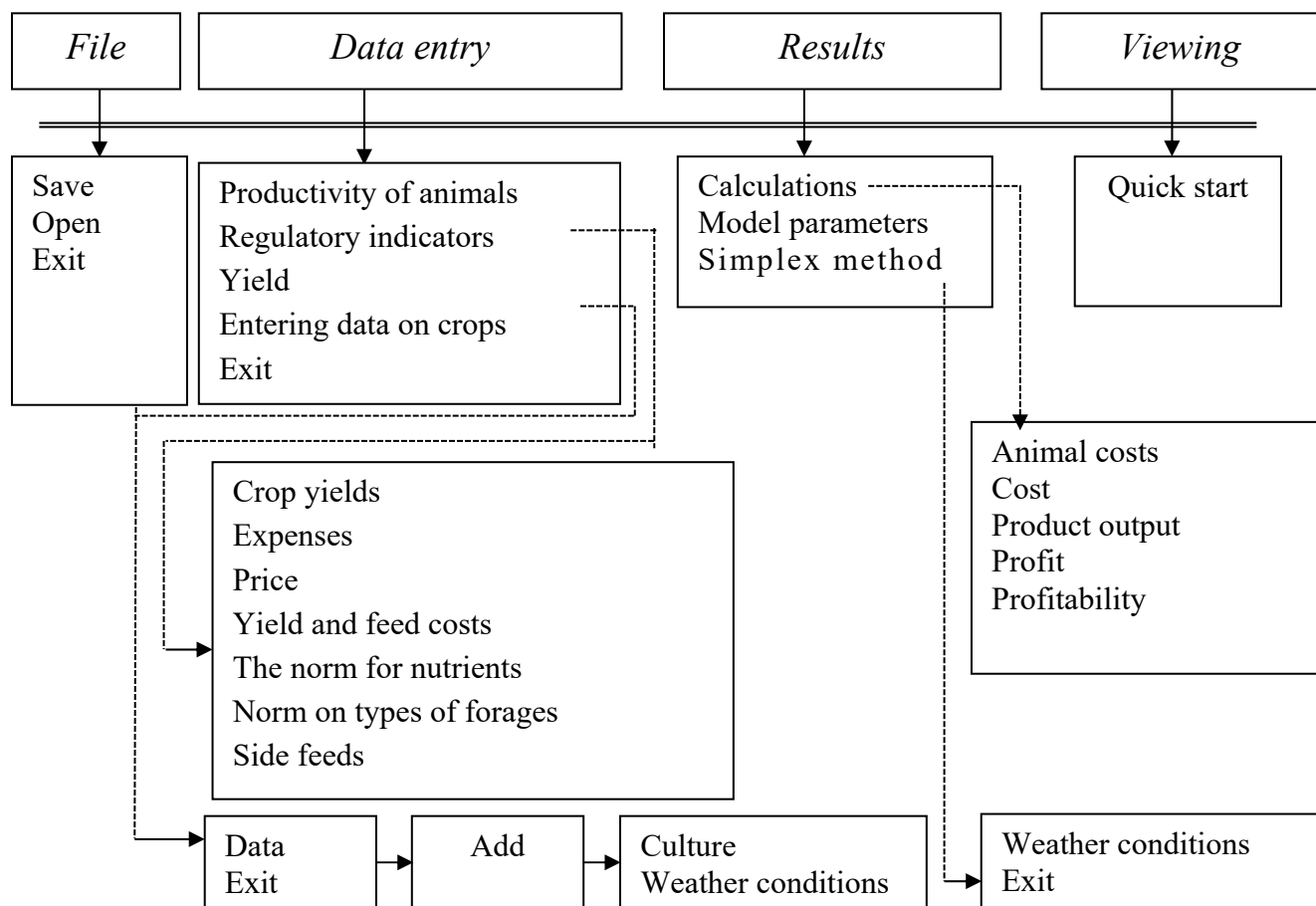


Figure 2 – Menu structure of the OPTIMA software module

To enter crop yield data in the menu, you must execute the commands *Data entry* ⇒ *Regulatory indicators* ⇒ *Crop yield*, and then in the *Crop yield* dialog box fill in the fields with data for each of the crops according to the weather.

In addition, it is necessary to enter information on costs, unit prices per ton of each crop in each of the weather conditions, the number of percentages of by-products and nutrient regulations. To do this, consistently execute the commands:

- *Data entry* ⇒ *Regulatory indicators* ⇒ *Costs*;
- *Data entry* ⇒ *Regulatory indicators* ⇒ *Price*;
- *Data entry* ⇒ *Regulatory indicators* ⇒ *By-product waste*;
- *Data entry* ⇒ *Regulatory indicators* ⇒ *Nutrient standard*.

After entering data in the dialog boxes *Expenses*, *Price*, *Recreation and straw by crops*, Normative data on protein calculations are automatically performed in the windows *Cost*, *Output*, etc., or you can get generalized information for each of the crops.



After entering data on crops, feeds, animals and regulations, the program "Optima" allows you to calculate and obtain the coefficients of constraints of the model on feed units, nutrients, and structure for each of the weather conditions.

In addition to calculating the coefficients of constraints of the model, the software environment "Optima" performs the optimization of the objective function on the criterion of maximum marketable products or profits. To get the result you need to execute the commands *Results*  $\Rightarrow$  *Simplex method* and enter the coefficients of the objective function.

The coefficients are entered depending on the weather condition for which the calculations will be performed, or simultaneously for all weather conditions.

To perform optimization according to one of the criteria, you must use the *Simplex* button. The result can be viewed on the *Simplex Result* tab.

In addition, the application package can enter data on new crops and new weather conditions, the formation and output of tables in accordance with the model [8], as well as the ability to obtain information for economic risk assessment (implementation of the plan for marketable products and profits).

The program analyzes the results obtained, assesses the degree of risk for the given levels of technical and economic indicators, and recommends the most effective plan. "OPTIMA" makes it possible to assess the reduction of risk because of the creation of feed stocks, improving the structure of the herd of animals, the use of monetary resources, the use in adverse weather conditions of surplus monetary resources obtained in crop years.

The second way to implement an economic-mathematical model of combining the industries of agricultural enterprises using the capabilities of Microsoft Excel spreadsheets, namely, using the tool *Solution Search*, which is used to solve similar optimization problems. It is necessary to generate data accordingly, perform calculations, and then enter restrictions and additional parameters.

First, the worksheets form data for each of the crops (Fig. 3, Fig. 4), calculate additional elements for the model coefficients for each weather condition (Fig. 5), the coefficients themselves and form the target function (Fig. 6).

	A	B	C	D	E	F
1	<b>Sugar beet</b>					
2	Weather condition	$\theta=1$	$\theta=2$	$\theta=3$	$\theta=4$	$\theta=5$
3	Crop capacity t / ha	18	29	40	51	62
4	The cost of g / t	216,67	155,45	127,70	112,00	99,00
5	Price UAH / t	166	166	166	166	166
6	Profitability	-23%	7%	30%	48%	68%
7	Costs per 1 ha, UAH	3900	4508	5108	5712	6138
8	Product output per 1 ha, UAH	2988	4814	6640	8466	10292
9	Profi	-912	306	1532	2754	4154
10						
11	<b>Barley</b>					
12	Weather condition	$\theta=1$	$\theta=2$	$\theta=3$	$\theta=4$	$\theta=5$
13	Crop capacity t / ha	35,7	42,8	51	58,1	66,3
14	The cost of g / t	309,80	294,86	286,67	278,49	274,06
15	Price UAH / t	443	443	443	443	443
16	Profitability	43%	50%	55%	59%	62%
17	Costs per 1 ha, UAH	1106	1262	1462	1618	1817
18	Product output per 1 ha, UAH	1581,51	1896,04	2259,3	2573,83	2937,09
19	Profi	475,51	634,04	797,3	955,83	1120,09

Figure 3 – Fragment of data on individual crops

	A	B	C	D	E	F	G	H	I	J	K	L
1	Wheat - average yield a = 50 ts / ha					waste is	10%					
2						straw	50%					
3	a=	19,995	a=50±20									
4	σ=	7,75										
5												
6	Weather condition	θ=1	θ=2	θ=3	θ=4	θ=5						
7	Yield t / ha	3,117	4,058	5	5,942	6,883						
8	The cost of g / t	486,365	418,433	367,400	331,370	296,673						
9	Price UAH / t	600	600	600	600	600						
10	Profitability	23%	43%	63%	81%	102%						
11	Costs per 1 ha, UAH	1516	1698	1837	1969	2042						
12	Yield per 1 ha, UAH	1870,2	2434,8	3000	3565,2	4129,8						
13	Profit, UAH	354,2	736,8	1163	1596,2	2087,8						
14												
15												
16	<i>per 1 kg of feed units - 95-105 g of digestion</i>											
17	<i>feed concentration - 15% -35%</i>											
18												
19	Indicator	Wheat	Wheat straw	Botva	Pulp	Barley	Barley straw	Pea	Pea straw	Com	Buckwheat	Buckwheat Straw
20	Feed units, kg	1,16	0,24	0,14	0,09	1,17	0,32	1,15	0,22	1,16	0,9	0,3
21	Protein, g	80	5	17	6	72	11	168	32	56	77	22

Figure 4 – Calculation of additional model coefficients on a Microsoft Excel worksheet

	A	B	C	D	E	F
23	<b><i>Coefficients for feed unit restrictions</i></b>					
24	<b>Coefficients of restrictions</b>	<b>Weather condition</b>				
25		<b>θ=1</b>	<b>θ=2</b>	<b>θ=3</b>	<b>θ=4</b>	<b>θ=5</b>
26	X01	7,356	9,577	11,800	14,023	16,244
27	X02	14,08	19,84	25,6	30,72	35,84
28	X03	0,68	0,83	0,95	1,08	1,22
29	X04	0,42	0,54	0,65	0,77	0,87
30	X05	0,55	0,66	0,79	0,90	1,03
31	X06	0,29	0,39	0,49	0,58	0,69
32	X07	60	60	60	60	60
33	X08	57,75	57,75	57,75	57,75	57,75
34	X09	55	55	55	55	55
35	X10	54	54	54	54	54
36	X11	52	52	52	52	52
37	X12	50	50	50	50	50
38	X13	48	48	48	48	48
39	X14	46	46	46	46	46
40	X15	3,6	4,8	6,2	7,2	8,4
41	X16	8	8	8	8	8

Figure 5 – Calculation of model coefficients

fx =B98*\$B\$65+C98*\$C\$65+D98*\$D\$65+E98*\$E\$65+F98*\$F\$65+G98*\$G\$65+H98*\$H\$65+I98*\$I\$65+J98*\$J\$65+K98*\$K\$65+L98*\$L\$65+M98*\$M\$65+N98*\$N\$65+O98*\$O\$65+P98*\$P\$65																			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	X	Y
63	max of marketable products																		
64	Variables	X0101	X0201	X0301	X0401	X0501	X0601	X1501	X07	X08	X09	X10	X11	X12	X13	X14	X16	Fact	
65	Initial values of variables	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
66	Restrictions on arable land:	1	1	1	1	1	1	1										7	
67	certain crops and cows of appropriate productivity:	1																1	
68	wheat		1															1	
69	sugar beet			1														1	
70	barley				1													1	
71	pea					1												1	
72	corn						1											1	
73	buckwheat			1														1	
74	fodder crops				1													1	
75	productivity of cows: 6000					1												1	
76	5500						1											1	
77	5000	1		1		1	1											4	
78	4500	1			1			0,7										-0,7	
79	4000	1	1															0	
80	3500								1	1	1	1	1	1	1	1		7	
81	3000								1									0,98	
82	2500								1	1								1,95	
89	Restrictions on feed units:	5,9	12,8	4,75055	3,27375	3,944	2,457	62	60	57,75	55	54	52	50	48	46	8	113,7953	
90	Restrictions on digestible protein:	26,25	116	21,7805	47,724	19,04	18,711	620	630	606,38	577,5	540	520	490	456	427,5	150	1109,33	
91	Min of concentrated feed: > 15%	2,9	0	2,00655	1,67325	3,944	0,567	12,4	9	8,66	8,25	8,1	7,8	7,5	7,2	6,9	8	54,29	
92	Min of concentrated feed: < 35%	2,90	0	2,00655	1,67325	3,944	0,567	12,4	21	20,21	19,25	18,9	18,2	17,5	16,8	16,1	8	-30,25	
93	Additional calculations of restrictions	2700	5976	1367,54	1183,788	2876,4	738,234	0	6000	5500	5000	4500	4000	3500	3000	2500	0	47179,28	
94	Additional calculations of restrictions	1837	5108	1462	1132	2216	476	1700	2769,23	2640	2500	2347,826087	2181,82	2000	1894,736842	1667	605	34908,32	
98	Target function $\theta=3$	2700	5976	1367,54	1183,788	2876,4	738,234	0	6000	5500	5000	4500	4000	3500	3000	2500		48841,963	

Figure 6 – Fragment of calculation of objective function for weather condition ( $\theta = 3$ )

By varying the variables, you can create a set of optimization models that will solve a wide range of problems of agricultural enterprises. Of course, such models are not simple. Achieving the result requires certain knowledge and skills to work with tools.

Summarizing the above, we can conclude that in modern conditions in the work of agricultural enterprises plays an important role in the use of optimization models. To achieve high results of agricultural enterprises it is necessary to use mathematical methods and be able to form optimization models. The numerical solution of economic and mathematical models allows you to make informed decisions about the work of individual parts of the enterprise or the whole enterprise.

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## **SECTION 6. MODERN LEARNING TECHNOLOGIES IN HIGHER EDUCATIONAL INSTITUTIONS**

### **6.1. IMPLEMENTATION OF INNOVATIVE TECHNOLOGIES FOR EDUCATION OF FUTURE ECONOMISTS AT HUMANITIES LESSONS**

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**Abstract.** The use of innovative technologies in education is one of the most important and sustainable tendencies in the development of the world educational process. In recent years national system of higher education uses computer and other information technologies for studying different subjects.

The purpose of the research is to give a definition of the term «innovative technologies», to get acquainted with the advantages of their usage by Humanities teachers in educational process, to determine the professional readiness of Humanities teachers for innovative activities.

The methodological basis of the research forms the principles of scientificity, systematicity and objectivity. The general scientific methods (of analysis, synthesis, comparative, systematization, generalization) have been used when writing the paper. The material has been presented according to the thematic principle. Comparative, typological and functional methods have been used for a comprehensive research of the topic.

The article deals with innovative technologies, the advantages of their use by teachers at higher educational institutions. The basic signs of innovative technologies have been shown: the construction of training based on the student's interaction with the learning environment; the change in the interaction of the teacher and students: the activity of the teacher helps to activate students, and the task of the teacher is to create conditions for their initiative; the role of a teacher as a consultant, organizer, source of information; the absence of the dominance of any participant in training over others.

Authors study the most potential and promising types of innovative technologies, which are used in the educational process of higher institutions: chats, internet forums, educational portals, multimedia, e-mail, role and business games. They help to improve the quality of education, give the opportunities for continuous education, provide adequate level of teachers training, and improve the content of teaching.

Innovative technologies and innovative teaching methods give university instructors tremendous opportunities for education, professional growth; they provide access to unlimited information, and give the chance to conduct dialogue with the whole world.

**Key words:** innovative technologies, interactive technologies, information and

communication technologies, e-mail, multimedia, role and business games, chat, internet forum, educational portals, professional readiness, Humanities teachers.

Nowadays, higher education is one of the determining factors of the intellectual and productive forces for society reproduction and for the development of Ukrainians' spiritual culture, the guarantor of the future success in consolidation and strengthening of the authority of Ukraine as a sovereign, independent, democratic, social and law based state.

The process of integration of Europe, its move to the East, is followed up by the creation of general education and scientific area, development of the unified criteria and standards in this field, where the quality of higher education is the basis for the formation of this area.

Over the past two decades, there has been a shift from traditional technology of higher education to «innovative technologies» - personal computers, computer databases, electronic information networks, etc. Thus, there is a shift to the developments aimed at creating a specific learning environment, or applying technology and communication in education. Innovative technologies in education is a complex of fundamentally new educational and methodological materials, technical, communication and instrumental means of processing, preservation, transmission, display of information in accordance with the laws of the educational process, which effectively influence the professional training of future specialist.

Means of innovative technologies is a synthesis of modern achievements of pedagogical science and means of information and computer technology. They implement scientific approaches to the organization of the educational process in order to optimize it and increase its efficiency, as well as to intellectualize the material and technical base of educational institutions in a continuous way. In addition, the effectiveness of the learning process also depends on the introduction of a variety of innovative technologies that ensure the dialogue of the learning process.

Every day more and more higher education institutions are connected to the world wide web in order not only to be involved in the open information space, but also to find new opportunities for the realization of educational goals and objectives [64].

In addition, the use of the latest learning tools, namely the Internet and electronic resources, will help graduates adapt to their sphere of activity in the face of growing dynamism and uncertainty, preparing them as active objects of the new educational paradigm, raising their lifelong learning [32].

The main educational forms of organization of the educational process include lectures, seminars, practical and individual classes, independent work. In preparation for seminars and independent work, students can work with electronic textbooks and manuals, communicate on-line via e-mail, use test programs to improve knowledge, gain new information and to test the mastery of the material studied [6].

Moreover, the existing electronic resources of libraries allow students and other participants of the educational process to quick find the information they need, without leaving the room in which they work. If the required literature is not available in electronic form, students can use electronic catalogs, which will speed up

the work in the library, or order the necessary source via e-mail. This allows you not to be tied to the geographical location of the city or village and creates unlimited access to any literature.

The Internet and electronic educational resources can provide significant assistance to students in writing essays, term papers, dissertations and master's theses.

In addition, the Internet allows you to find a huge number of books and download them for free to a personal computer or other modern device to be able to read, study and learn material anywhere, anytime. Modern technologies allow you to find and store the necessary material very quickly, leaving more time for material processing.

It should be added that along with the ability to navigate in the information space, university students have the opportunity to form a high level of information culture, gain practical skills not only in finding, storing and processing information, but also in choosing the best forms of its presentation and adoption of effective solutions. The use of Internet resources provides an opportunity to develop thinking, provides new tools for solving creative problems, changes the style of mental activity [39].

The rapid transition from an industrial to an information society in the world's leading countries is seen as a guarantee of their future world leadership. At the best universities in the world, students have free access to the Internet (the issue is decided at the municipal or federal level or the fee for using the Internet is included in the total amount of tuition fees). In the United States, the connection of educational institutions to the global network is at the expense of the state [39].

Consequently, the relevance of this issue in the modern educational environment is evident, as today qualitative teaching of disciplines cannot be carried out without the use of facilities provided by computer, interactive technologies and the Internet.

The purpose of the research is to give a definition of the term «innovative technologies», to get acquainted with the advantages of their usage by Humanities teachers in educational process, to determine the professional readiness of Humanities teachers for innovative activities.

According to the goal, the following tasks were set: to reveal the concept of innovative technologies, to consider the ways of using these technologies by teachers in educational process of higher educational institutions.

The general scientific methods (analysis, synthesis, comparative, systematization) have been used while writing the paper. The material has been presented according to the thematic principle. Comparative, typological and functional methods have been used for a comprehensive research of the topic. The theoretical and practical results of implementing innovative technologies have been studied using the methods of analysis and synthesis. The method of analysis has been used for a detailed study of innovative technologies, which made it possible, in particular, to study scientific viewpoints on the need for implementation. The method of synthesis made it possible to distinguish the types of innovative technologies in the system of higher education.

## 1. Innovative technologies in the system of Higher Education

Historically, the concept of technology has emerged in connection with the technical process and according to vocabulary interpretations (*techne* - art, craft, science, *logos* - concept, teaching) is a set of knowledge about methods and means of materials processing. Technology also includes the art of mastering the process, resulting in personification. The technological process always requires a certain sequence of operations using the necessary means (materials, tools) and conditions. Technology in procedural sense answers the question: "How to make, with what and by what means?" [50, c.7]. Existing features of technology include standardization, unification of the process and the possibility of its implementation in relation to the given conditions.

The analysis of the psychological and pedagogical literature shows that scientists have different interpretation of the studied phenomenon. Information and communication technologies, including the computer, which can manage cognitive activity, are a collection of computer-oriented methods, tools and organizational forms of learning. Very often the term "information and communication technologies" is associated with the term "computer-oriented technologies" [84], ICT is regarded as a means of realizing the global tasks of reforming higher education, the mean of "the personal development and creative potential..." [85, p. 14]; information technology based on personal computers, computer networks and communications that have a favorable user environment [71]; "The methodology and technology of the educational process using the latest electronic learning tools, and, first of all, computers" [49, p. 32]; "A set of software, technical, computer and communication tools, methods and innovative methods of their application to ensure high efficiency and informatization of the educational process" [51, p. 30]; a system of methods for entering, processing, storing, retrieving and transmitting information on computer networks [58]. We emphasize that the term "communication" and "information" characterizes the concept of this term, the dual nature of technology - information content (information environment) and communication capabilities (communication tool). Scientists characterize this technology as a subject-oriented and communicatively oriented learning environment included in the educational activity.

Information and communication technology (ICT) is often used as a synonym for information technology (IT), although ICT is a more general term emphasizing the role of unified technologies and the integration of telecommunications (telephone lines and wireless telephony) connections, computers, software, storage and audiovisual systems that allow users to create, access, store, transmit and modify information. In other words, ICT consists of IT as well as telecommunications, media broadcasts, all types of audio and video processing, transmission, network management and monitoring functions [66, c.5].

So, information and communication technologies is a set of methods, production processes and software tools integrated for the purpose of collecting, processing, storing, distributing, demonstrating and using data for the benefit of their users [66, c.7].

Interactive technologies are collaborative studying when both students and



teachers are the subjects of the educational process. Interactivity can be highlighted as the ability to interact, study in conversation, dialogue, action. So, in the narrow sense, interactive ones can be called technologies in which the learner is a participant. He does not act only as a listener, an observer, but takes an active part in what is happening, actually creating this phenomenon [50].

The main advantages of interactive technologies include:

- helping students learn how to express their own opinions; to analyze the information received; to use the knowledge and experience acquired earlier; to debate, to defend their own point of view; to be more confident and independent;

- facilitating the intensification and optimization of the educational process.

The goal of interactive learning is to create comfortable conditions and a supportive atmosphere in which each student will feel successful in learning and feel his or her intellectual ability [26].

The main features of interactive technologies are:

- the development of training on the interaction of the student with the learning environment, which serves as a space for learning experiences;

- a change in the interaction of the teacher and students: the activity of the teacher gives way to the activity of students, and the task of the teacher is to create conditions for their initiative;

- role of the teacher as a consultant, organizer, source of information;

- absence of the dominance of any participant in training over others [25].

Any pedagogical technology is information technology, because the basis of the learning technological process is the receiving and transformation of information.

The information and communication technologies in education are aimed at boosting mental activity, developing creative abilities and forming a dialogue. In turn, ICTs are tools for creating, storing, transmitting, processing information and managing it. This widely used term includes all the technologies used to communicate and work with information. Appropriate use of ICT in the educational process is a prerequisite for improving the quality of educational services, expanding their capabilities, and creative implementation of personality in learning activities [76, c. 7].

Information and communication technologies have great potential in education and contribute to the implementation of such didactic tasks:

- improvement of the quality of education on the basis of the interconnection of the general and didactic principles of autonomy, activity and systematic character;

- expansion of opportunities for continuous education based on the implementation of the principles of consistency, continuity and accessibility;

- providing adequate level of teachers training for work with information and communication technologies;

- improvement of the content of teaching, taking into account the interaction of general and didactic principles, covering the principle of scientific research, visibility, accessibility, communication theory with practice;

- continuous improvement of the didactic provision of the educational process [76, c. 8].

We researched the following types of the information and communication technologies: chats, online forums and educational portals.

*Chat* (means "talk") is one of the technologies of synchronous dialogue that occurs in real time and almost without delay. At the same time, two interlocutors are simultaneously at their computers and, using special software, instantly send each other small written phrases, short messages that are created in the format of ordinary, live dialogue. To have a real-time online dialogue IRC (Live Chat Online) can be used. It offers a wide variety of options that differ from a simple chat. To communicate with channels (groups or rooms), it is advisable to have a dedicated IRC client program that allows to have multiple channels of dialogue, including private chat between two people [27].

By type of network communication, text (web-chats), voice and video chat are distinguished. Web chats (text) are special Internet services, text messaging, which is possible in two variants: public and private. The servers contain a special set of technical programs that allow a large number of interlocutors to have a dialogue, while working with a familiar Internet Explorer (Internet Explorer). Web chats can be used if you want to chat with many people on different topics. Interactive computer conversations (chats) require careful planning, specialized computer programs, and compliance with ethical standards and communication procedures. Virtual messengers need to have a microphone or headset with microphone for voice messaging. Such chats are often used during group play, providing lively dialogue between team members. Voice chats are used for webinars (voice training seminars). Video chat - Voice chat with live video chat. They are used during business conferences when one or more of its participants cannot attend the general meeting.

Web-chats can be considered as a classic communication process. The use of them in the educational process contributes to the formation of students' communicative skills, dialogue [59]. The above confirms that instant messaging (chat) technologies perform educational, communicative functions and are appropriate in the process of forming a professional dialogue culture for students.

*Online forums* provide active participation in the discussion. Today, the Internet is regarded as an integral part of the life of a modern expert, as there is no alternative source of information that would enable communication with representatives of other countries and form a favorable basis for dialogue between cultures [9, p. 43–44]. In the online forum, each participant can read the full text of the discussion and join the discussion. The analysis of discussions in Internet forums and thematic groups gives an opportunity to reveal the development of the skills in tolerant communication, professional dialogue, argumentation of their position, etc. [77].

Many researchers emphasize the advisability of student participation in the following forums: <http://forum.osvita.org.ua/> (you can discuss and express your own views on any issues related to higher education, second higher education, distance education, education abroad; discuss issues related to published articles, results of conferences, etc.); Univer-sity (<http://www.univer-sity.com>) (students have the opportunity to discuss various topics: universities and faculties, study abroad, student

news, travel, literature, Internet, politics, economy, business, etc.

So, online forms help to develop dialogue skills, to participate in the discussion, to conduct tolerant dialogue, give students the opportunity to discuss different professions, discuss different topics.

**Educational portals** are a software and technology complex whose main task is to accumulate data on scientific and methodological information resources, state educational standards, modern technologies of teaching, information that supports the personal level of education and its constant improvement.

The general characteristics of portals are provided by N. Zadorozhnyi and T. Omelchenko [82], who view the portal as an entrance (or exit) to the global information space. The main characteristics of the portals include: existence of a developed system of information resources; active interaction with users through the forum system; the presence of centralized input and special means for convenient use of information resources.

Educational portals include specialized services that provide access to various electronic educational resources (e-libraries, e-learning courses, knowledge testing systems, etc.) [4].

Thus, educational portals facilitate effective dialogic interaction between students and teachers in the process of searching necessary professionally oriented information, allow to organize and implement mediated dialogue in the educational process using the latest technologies, ensure constant access of students to teaching materials, lists and recommended literature, provide the opportunity to organize virtual consultations and seminars.

**E-mail** has been named the main source of all online resources as a form of asynchronous computer and mediated communication [79]. With the evolution of the Internet world computer technologies offer tremendous opportunities for foreign language teachers: "... they can be a means of communicating in a specific language including messaging with other students in and out of class" [79]. In addition, foreign language teachers are already becoming more aware of the impact of this tool on their profession through the use of e-mail during exams and creative interaction with students. In recent years researchers from different countries have presented a lot of innovative ideas for using e-mail when learning a foreign language.

The pedagogical advantages of the e-mail are the extension of time and space for learning a foreign language. As many e-mail researchers point out it empowers students and teachers by providing them with opportunities to meet and communicate in a foreign language outside the university. Thanks to e-mail, students do not need to be in a special room at certain times and days to communicate with others in a foreign language. They can send e-mail from their convenient place at home. Such spatial capabilities give them more free time to spend writing and reading in a foreign language in a communicative context. An important point is that thanks to e-mail students do not need to spend money to travel abroad just to socialize [75].

Today there are many publications mostly foreign ones in which researchers substantiate the problem of learning foreign languages of students of different specialty. They consider information and communication technologies in particular e-

mail as an effective means of learning.

Rankin, for example, notes that the extra interaction in a foreign language provides students with even more value than usual [55]. E-mail also allows students to communicate with others in authentic communication situations. Interaction with the help of e-mail allows you to feel the reality of the effort that is spent during communication comparing to artificial communication in the classroom. Such communication is more fruitful and reminiscent of spoken language due to its informal and interactive nature. Unlike face-to-face communication e-mailing takes place in writing which serves the language learners quite well. As Schwienkorst points out "the main advantage of written communication is the ability for each student to retain holistic communication and have great examples of language use in the future"[62].

Foreign language teachers are often faced with the problem of following a schedule and technology maps on certain topics which must be laid out over a period of time and as a result there is almost nothing left for free communication. E-mail allows students to communicate in a context where the teacher is not the principal. In communication with e-mail students have the opportunity to gain experience of increased control over their personal learning and independently choose a topic and change the direction of the discussion. The ultimate goal is to communicate with other students in a foreign language but not to write text with many mistakes.

According to M. Beauvios, computer and mediated communication improves student participation by 100 percent. Other researchers have noted that students who do not wish to interact face-to-face are more likely to communicate in an electronic context [3].

Undoubtedly e-mail can offer a number of benefits for students and teachers of a foreign language. For example, the wide variety of activities are successfully used by foreign language teachers. We can split these activities into group and single email exchanges.

Group messaging – e-mail allows students a hands-on opportunity to interact with others in a foreign language. Students can create their own mailing lists or teachers can organize a group list. By allowing interested parties to subscribe to such a list we are creating an additional opportunity for authentic communication in a foreign language with other students without taking group mates into account. Students can also attend discussion forums in addition to scheduled classes [13].

According to Moran and Havisher e-mail is a communication and writing medium with elements of both written and spoken language. As e-mail is separated from direct contact the great pressure of the immediate response is reduced and students have time to form their thoughts [40].

Communication via e-mail helps students prepare for interpersonal discussion in class on the one hand and improve writing on the other [74]. When communicating within a single class the teacher can easily relate the communication task to the topic being discussed and extend the time for communication on the topic. The foreign language teacher has the opportunity to develop assignments using e-mail as an activity before the start of classes after classes and additional activities that involve

students' independent work.

Let us consider some types of activities that a teacher can use as a student's independent work prior to the start of class. Based on my own experience I would like to point out that it is quite difficult to involve students in foreign language activities without prior preparation. Thanks to such independent tasks pre-class assignments give great attention to the main work and save a lot of time during the class.

Another example is the preparation of written tasks with the help of e-mail. In this case the teacher can offer the following activities to students: write a short biography of the famous person of their choice. With the help of e-mail students can collaborate on topics for this task thus saving time in class. In addition you can share your knowledge of a particular topic before performing listening comprehension exercises. Before listening to a particular topic in the class students exchange their knowledge of the topic via e-mail based on their own experience.

We consider it appropriate to note that e-mail is effective for the preliminary preparation of the discussion. Ramazani shares experience in using this type of activity as a Weekly Essay. A few days before the class his students transmitted their own works using e-mail. With this approach a more thorough preparation of students to discuss the work in the classroom was observed. Further implementation of this idea through the handout material allows activating students to participate in brainstorming and stimulate discussion [7].

Considering post-class student activities it can be noted that teachers are able to create online assignments in order to consolidate or extend what students have already done in class. This method encourages students to repeat the discussion in the classroom, enabling them to repeat or clarify the thoughts that were expressed during the discussion. In post-class activities students can also use the new vocabulary or structures that have been offered for the class. The case method is preferred. Case Study provides a variety of student activities to solve problem situations prepare, analyze, transmit and receive information via email. Students try to independently find out the essence of the problem and determine their own position in the assessment of the situation; think through the answers to the questions and find specific ways of solving the problem; there is an exchange of views; intellectual leaders are found to be able to offer solutions to problems after group discussion.

Bauman offers to enrich the conversational activity in the second session through the use of e-mail between groups. During one class he provided students with handouts describing three types of crime. In small groups students discussed cases and reached decisions to punish suspects. As homework he asked each student to write an original case and send it by e-mail. He then sent two cases by e-mail to each student with instructions to study the cases and suggest punishment methods before going to class.

In the second session students who were assigned the same tasks came together to discuss ideas and try to reach an agreement on punishment. According to Bauman through the exchange of materials between the students of the group in writing and their discussion the results were achieved outside the main class time. With these

exercises invaluable time in the classroom was saved for face-to-face interaction [2].

Mantegi offers a different kind of e-reading task. In the first session students read a case from life and discuss the article, its features and linguistic structure. Then they create the story together with an e-mail. Each student creates a new story and adds it to the story after it's his turn [34].

For the purpose of establishing effective interaction between students it is advisable to use the technology "reader circle" which involves discussing the read material outside the classroom by e-mail. The teacher divides students into subgroups (4-5 students). Students are then asked to read the article after which they can send their feedback via email to other members of the group [47].

To sum up the experience of foreign colleagues in the field of information and communication technologies and foreign language teaching should be used in the educational process of universities when organizing foreign language classes especially among students who are trying hard to master a foreign language.

High-quality functioning of modern higher education is impossible without the use of the Internet and electronic resources. After all, they, in combination with traditional teaching aids, are able to provide effective conditions for the training of specialists who will be competitive at the global level. This is possible only with a clear state policy in this matter, the implementation of state financial support for the introduction of information technology in the educational process. This will allow to realize the main tasks of the modern system of higher education of Ukraine.

## **2. Interactive learning as an innovative technology in the system of higher education**

At the present stage, training of future specialists requires active forms and methods of teaching. The term «interactive" has two components: *inter* and *act*, that is, the ability to interact. Therefore, it is assumed that the educational process is subject of continuous, active interaction of all participants. Interactive learning is based on cooperation, which is based on the "pedagogy of cooperation: the direction of pedagogical thinking and practical activity, the purpose of which is the democratization and humanization of the pedagogical process" [14, p.43].

The purpose of interactive learning is to create such comfortable conditions for each student to feel his or her intellectual capacity to learn new things. This can be achieved only with constant active interaction of the teacher and students. Interactive learning involves enhancing students' learning opportunities instead of receiving and retrieving ready-made information. Classes, where interactive technologies are used, enrich students with basic knowledge and skills, which are crucial to the development of individual competencies. They capture, arouse interest and teach independent thinking. The effectiveness and power of influencing the emotions and consciousness of students depends on the skills and style of the teacher.

During interactive learning student becomes subject of study, he feels himself like an active participant in the process of his own education, personal and professional development. This provides an intrinsic motivation for learning that contributes to its effectiveness.

It is necessary to follow the principles of interactive learning, namely:

1. *The principle of activity*, which means that each student must participate actively in the process of communication and interact actively with other students.

2. *The principle of open feedback*, the essence of which is the mandatory expression by a member or all members of a group their opinions, ideas or objections of the tasks. Thanks to the feedback, team members learn how others perceive their communication and thinking style, and behavior. This principle corrects speech and behavior.

3. *The principle of experimentation* involves active searching for new ideas and ways for students to solve their tasks. This principle is very important both as an example of the behavior in real life, and as an impetus to the development of creativity and initiative of the individual.

4. *The principle of trust in communication*. This is the purpose of a special organization of group space during the course in order to change the stereotype of the student and the idea of how the classes should be organized and which role should be played by the teacher.

5. *The principle of equality*. It means that the teacher does not seek to bind the student their thoughts, but acts with them. In turn, the student is able to play the role of organizer, leader [50, p.5].

National and international experience shows that interactive technologies contribute to the intensification and optimization of the educational process. They allow students to:

- analyze educational information, learn educational material creatively and therefore, make knowledge more accessible;

- formulate own opinion, express it correctly, prove own point of view, argue and discuss;

- learn to listen to another person, respect alternative thoughts;

- model different social situations, enrich own social experience through inclusion in different life situations;

- learn to build constructive relationships in a group, determine their place in it, avoid conflicts, solve them, seek compromises;

- develop skills of project activity, independent work, performance of creative works.

- carry out project activity, realize creative ideas, develop skills of independent work [73].

It should be emphasized that interactive technologies contribute to the intensification and optimization of the academic process.

The main advantages of interactive technologies:

- help students learn how to express their opinions correctly;

- students learn to work in a team;

- friendly attitude towards the opponent is formed;

- a large amount of material is mastered in a short time;

- ability to analyze the information received;

- the skills of tolerant communication are formed;

- the opportunity to use the knowledge and experience acquired previously;

- to debate, to defend one's own point of view;
- to be more confident and independent
- a “success situation” is created [48].

The main features of interactive technologies are: bilateral; construction of learning on the interaction of the student with the learning environment which serves as a space for the acquired experience; special organization and variety of forms; change of interaction between the teacher and students: the activity of the teacher is inferior to the place of activity of students, and the task of the teacher is to create the conditions for their initiative; integrity and unity; the role of the teacher as consultant, organizer, source of information; motivation and connection to real life; lack of dominance of any participant of learning over other education and development of students' personality at the same time as the process of learning new knowledge [28].

Effective interactive learning technologies that contribute to the formation of professional dialogue are: "carousel", "aquarium", "large circle", "microphone", unfinished sentences, "brainstorming", problem analysis, "mosaic", circle of ideas, role play situations, discussion, talk shows, "six thinking hats" etc.

Application of the offered interactive technologies during the educational process will contribute to: effective repetition of the learned vocabulary, replenishment of vocabulary; deep learning of proper articulation skills; development of attention, memory, thinking; forming skills to work in pairs, groups.

A great attention must be paid to the 6 Thinking Hats interactive game. The Six Hats method is a psychological role-playing game the meaning of which is to consider the same problematic situation from 6 independent points of view. This allows you to form the most comprehensive view of the subject matter and to evaluate the advantages and disadvantages at the logical and emotional levels. The method was offered by the British writer, psychologist and creative thinking specialist Edward de Bono in 1985. The basis of this approach is the concept of parallel thinking. By "trying" 6 independent types of thinking in the process of solving practical difficulties 3 main problems can be easily overcome:

- Lack of superfluous emotions: assessing a particular situation from different perspectives contributes to the fact that we make decisions by conducting complex analysis in 6 independent ways.

- Lack of confusion: a multi-level task of heightened complexity can cause feelings of self-doubt. The concept of parallel thinking allows you to approach the problem systematically gathering facts and evaluating all the pros and cons.

- No inconsistency: using such a technique allows you to structure the entire information on individual grounds i.e. solve a problematic issue using a systematic approach while leaving time for creativity.

What symbolizes the color of each of the six "hats"? A hat of a certain color implies the inclusion of an appropriate mode of thinking which should be followed by the student or the team at the time of arguing their position during the discussion game:

- White - focus on information (analysis of known facts and figures as well as assessing what information is missing and what sources can be obtained).



- Yellow - research on possible success, search for benefits and optimistic forecast of the event / idea / situation under consideration.
- Black - assess the situation in terms of the shortcomings, risks and threats of its development.
- Red - attention to emotions, feelings and intuition. Without going into details and considerations, all intuitive assumptions are made at this stage.
- Green - search for alternatives, generate ideas, and modify existing developments.
- Blue - manage the process of discussion, summarizing and discussing the usefulness and effectiveness of the method in specific circumstances.

It is necessary to mention that cramming at any time is not always effective. The psychologist Ebbinghaus found out how long the studied compounds were stored in memory. It turns out that forgetting is very fast: 60% of words are forgotten in an hour, in six days only 20% remains, about the same in a month. It follows that the words learned should be repeated especially often for the first time after learning: then they will be delayed into long-term memory. So if you have one day to study you should repeat the words:

1. Immediately after memorization
2. 20 minutes after the first repetition
3. 8 hours after the second
4. 24 hours after the third

If there is a lot of time you can do the following:

1. Immediately after memorization
2. in 20-30 minutes
3. in 1 day
4. in 2-3 weeks
5. in 2-3 months

It is well known that the use of information technology in foreign language learning determines the intensity of dialogue. It is understood that if the information is exchanged via email, the dialogue is slowed down because it is done in writing. A high degree of dialogue intensity is achieved through computer conferences, in which teachers and students answer the questions of others and each participates in the dialogue, enriching it informatively [28].

The most potential and promising types of interactive technologies that should be used in the educational process of higher institutions are multimedia technologies and role and business games.

**Multimedia technology** is a very promising area of technology in the field of education. In the broad sense, "multimedia" means a range of information technologies that use a variety of software and hardware to influence the user most effectively (which has become both a reader and a listener and a viewer). Due to the application of graphic, audio (audio) and visual information in multimedia products and services, these tools have a high emotional charge and attract the attention of the user (listener).

Experiments showed that the listener perceives and is able to process up to one

thousand conventional units of information per minute during oral presentation, but in connection with the organs of vision to 100 thousand such units [19]. So, it is absolutely obvious the high efficiency of using multimedia tools in teaching, the basis of which is visual and auditory perception of the material.

The latest developments in computer-based training are called *multimedia*. The multimedia technologies include animation graphics, videos, sound, distance access and external resources, database management etc. Various information components that are run by one or more special programs are called *multimedia systems*.

The purpose of video and other multimedia tools application during educational process is its visualisation.

The basic principles of video creation are:

- *illustrativity* (give the teacher an opportunity to illustrate the lessons);
- *fragmentation* (allows to give the material step by step, depending on the speed of students perception );
- *methodical invariance* (video clips can be used at different stages of the lesson, pursuing different methodical goals);
- *conciseness* (presenting more information in less time and more efficiently);

Among the vast variety of educational multimedia systems, we can conditionally distinguish the most effective tools: computer simulators; automated training systems; educational films; multimedia presentations; video demonstrations [72].

Multimedia learning tools used in the educational process must meet the system of psychological, didactic and methodological requirements.

Specific didactic requirements include:

- adaptability to individual student's capabilities;
- interactive learning;
- realization of computer visualization of educational information;
- development of the student's intellectual potential;
- the systematic, structural and functional coherence of the educational material;
- ensuring the integrity and continuity of the didactic cycle of training.

Didactic requirements closely connected with methodological requirements. Methodological requirements for multimedia learning tools take into account the peculiarity and features of a particular subject, the specifics of the relevant science, its conceptual apparatus [60].

Multimedia training tools must be selected to meet the following methodological requirements:

- educational material should be based on the interconnection and interaction of conceptual, imaginative and effective components of thinking;
- giving the student an opportunity to do various training tests.

Along with the didactic and methodological requirements, there are also a number of psychological requirements that affect the success and quality of multimedia [44].

The main hardware of multimedia technology is a computer equipped with the

necessary software and a multimedia projector. Of course, the computer does not replace the teacher, but is only a means of teaching, his assistant.

Due to their capabilities and the development of technical means, multimedia technologies can be used for teaching almost all subjects.

**Role and business games** promote positive motivation for learning process, increase students interest. The game allows seeing successes, not to notice failures. Conversely, success leads to victory, victory to motivation; motivation promotes the desire to win and to be successful.

A business game is a simulation of real activity in a specially created problem situation. It is a mean and method of preparing and adapting for professional activities and social contacts [43], method of active learning, which contributes to the achievement of specific tasks, structuring the system of business relations of participants. Its structural elements are the design of reality, the conflict of the situation, the activity of the participants, the appropriate psychological climate, interpersonal and intergroup communication, the solution of problems formulated at the beginning of the game.

A business game is a complex, multifunctional action, in which several interrelated activities are combined: analysis and search for problems solutions, training, development, research, consulting, and formation of team activity. So, business games make educational process closer to real life and develop practical skills [43].

Traditional business games have a scenario, focused on solving typical problem situations, their goal is to teach game participants to solve these problems optimally. In the educational process, the business games are used to consolidate the knowledge that the student gained in the course of lectures, seminars and practice.

Application of business games during training allows to close the educational process to practical activity, to take into account the realities of the present, to make decisions in the conflict situations, to defend their proposals, to develop teamwork, to get results in a limited time. In specially created conditions, the students "worked out" a variety of life situations that allow them to defend their positions.

The main advantages of role and business games compared to traditional methods are an ability to solve problems in a short period of time; an ability to test students' knowledge directly, an ability to increase interest of the participants, and consequently, to increase effectiveness of learning [43].

The business game, simulating a particular situation, makes it possible to solve specifically formulated tasks and problems, to develop methods of solving problems. It has a rigid structure and rules; its main function is to develop skills and ability to act in standard situations. The role and business game are used to learn new and consolidate old material, because it allows students to understand and learn the material from different positions.

Typically, a business game consists of the following stages:

- familiarizing the game participants with the purpose, tasks and conditions of the game;
- instruction on the rules of the game;

- formation of working groups by participants of the game;
- analysis, evaluation and conclusions of game results.

On the first stage, preparatory, the choice of the game is justified, determined the goals and objectives of the game, formulated a problem situation, developed a game scenario, prepared information and methodological material.

The second stage the rules of the game and the functions of the players are considered.

The third stage depends on the content and form of a particular game and consist in discussing the problems posed by the participants, making generalized decisions, and analyzing them.

Different types of business games are used in educational process: simulation, operating, role-playing, business theater and intellectual games.

*Simulation Games.* At the lessons, they simulate the activities of a particular organization, enterprise, educational institution, etc. Also they can simulate events, specific activities of people (business meeting, discussion of the plan) and conditions in which the event takes place (meeting room, office of the head). The scenario of the simulation game, in addition to the plot of events, contains a description of the structure and purpose of the processes and objects that imitate them.

*Operating Games.* They help to accomplish specific operations, such as the methods of organizing and holding meetings, conferences, etc. Games of this kind are conducted in conditions that simulate reality.

*Role games.* They work out tactics of behavior, actions, functions and responsibilities of a particular person. For role-playing games, a model-play of the situation is developed, with the distribution of roles between participants.

*Business Theater.* It is played some situation and behavior of the person in this situation. The student has to mobilize all his experience, knowledge, skills, be able to fit into the image of a certain person, understand his actions, assess the situation and find the right course of behavior [43].

The main task of staging method is to teach students to navigate in various circumstances, to give an objective assessment of their behavior, to take into account the opportunities of other people, to establish contacts with them, to influence their interests, activities.

Culture at the turn of the millennium is a culture of dialogue. First, the cause of the dialogue is cognitive and emotional interest, that is, it performs an informational function in the broad sense of the word. Second, the dialogues involve interaction. This is how the communicative function is carried out.

That is why the use of *debate* as a kind of intellectual game is intended to help students to develop the skills they need to be successful in today's society. Today, debate is widespread in schools and universities around the world. Most European countries have debate programs at each institution.

The purpose of the debate game is to increase students' level of knowledge. And so it is necessary to participate in the debate in order to learn something. In other words, in the debate, the learning process is more important than the end result of each game - winning or losing. Playing "debate" has allowed to develop one of the

most important traits of personality - curiosity.

The students, who play the debate, learn to think logically and critically, to convey their thoughts and views to others or to a wide audience.

Students benefit greatly from the debate. Participants turn from team players into true friends working together to prepare for the debate.

During the debate, it is necessary to listen carefully to opponents in order to understand their position more clearly, but also the strengths and weaknesses of the team. In debating the ability to listen is very important because those players who are unable to listen do not always understand the weakness of their opponents' arguments.

The success of the debate depends on team activity. As in any game, everyone has a role and responsibility, but the team has to work together to help and complement each other [43].

Thus, the use of intellectual games allow students to acquire knowledge not in the traditional everyday way, but in a game form. In intellectual games, knowledge is an important tool for solving life's problems because they are associated with success in life, and success is victory.

The use of business games as active teaching methods, provides creative activity of students, create conditions for increased motivation and emotionality, and develop critical thinking.

### **3. The development of teachers' practical skills for implementation of innovative technologies**

Conversations with teachers of higher educational establishments have shown that they almost do not offer students educational tasks that would force them to use means of information and communication technologies with classmates, teachers, specialists. The reason for this situation is, first of all, their own uncertainty in their abilities to organize constant communication with students.

So, a large number of teachers need assistance in the implementation of innovative technologies, their organizational and methodological support. Most of the teachers do not use these technologies and therefore need to be trained. Thus, educational and methodological seminars for university instructors were developed and implemented with the theme "*Innovative technologies in education*", the purpose of which was to prepare teachers to work with interactive, information and communication technologies in the learning process.

A scientific and practical seminar "*Pedagogical skills: professional professionalization and innovative approaches*" was conducted, the task of which was to increase the teacher's teaching skills. The workshop included lectures (8 hours), practical classes (8 hours), training sessions (6 hours), master classes (4 hours). Various issues were discussed at the seminar, namely, modern teaching technologies, teaching methods for individual courses, training format as a method of activating at higher educational establishments. The workshop covered issues related to the methodology for conducting projects: information (aimed at collecting specialized information, familiarizing project participants with this information, analyzing it and summarizing facts intended for a wide audience); informational and

communicative (found in the harmonious combination of information seeking and communicative activities of students); brain storming, case method analysis, incident method, presentation, role plays, didactic games, etc. [61].

In addition, teachers were invited to take part in the practical organization of professional dialogue with students, enabling them to identify themselves in various situations requiring professional dialogue. During the work the following issues were considered:

- professional dialogue of teachers who carry out the training process for future merchants;

- formation of a professional dialogue culture of future specialists by means of information and communication technologies;

- the theoretical basis of interactive technologies;

- a methodology for organizing student work on the basis of interactive technologies, taking into account information and communication technologies. Teachers were interested in combined classes with the use of situational tasks, where they demonstrated their pedagogical skills. Teachers shared impressions and ideas, held a dialogue on professional topics.

During the seminar, the attention of teachers was emphasized on the importance of establishing subject and subject relations in the systems «student – student», «student – teacher» and ensuring their pedagogical interaction. The teachers' focus was on developing professional relationships with students based on a polite attitude towards each other, manifestation of moral and social responsibility, ethical conduct, and B. Franklin's rule of «honesty - the best policy» in conducting direct and indirect professional dialogue. During the academic year, the teachers became participants in scientific and methodological seminars "Communicative Processes in Education", "Interactive Technologies for Professional Communication Training". Attention of teachers was focused on such issues as professional dialogue: the essence, functions, types; professional language and speech; non-verbal aspects of intercultural dialogue and their role in regulating relationships, establishing contacts with specialists who are representatives of other cultures; characterization of non-verbal channels of intercultural communication (facial expression, touch, gesture, interpersonal communicative space, visual interaction, intonation); the role of multi- and hypermedia technologies, information retrieval systems in preparing future professionals for a professional dialogue; computer communications in off-line and on-line communication modes; personally oriented technologies of teaching students and their role in communicative training of future specialists, etc. Teachers were introduced to the advantages of the following Internet sites: <http://www.technology.com> - lesson planning; <http://www.eslcafe.com> - an interactive communication club; Global virtual classroom <http://www.virtual-classroom.org> - free online educational program; <http://teenadviceonline.org> - Educational site for teachers. Teachers focused their attention on the peculiarities of establishing partnerships with students based on cooperation, openness, trust, personal involvement, support; organization of constant counseling; taking into account the initial knowledge of students in order to model the individual approach to

pedagogical interaction; the creation of successful learning situations (the selection of dual tasks, the promotion of intermediate actions, differentiated help), the effect of novelty, the effect of imagination, the effect of change, the effect of the game. Attention of teachers was paid, first of all, to increase the motivation of students' training, which is the driving force in realizing the needs of the individual in the active interaction.

It should be highlighted that modern information technologies and innovative methods of learning a foreign language in Ukraine are based on the Council of Europe's Common European Recommendations on Language Education: Study, Teaching and Assessment. Therefore computer information technology is a major component of enhancing the motivation of modern learning and learning a foreign language [3]. It has been credited that computer communication makes it possible to use your computer as a universal means of processing and transmitting information. It provides access to an unlimited array of information stored in centralized databases ensuring that the educator uses all the knowledge available to the information society in the educational process.

Computer communication is a process of information exchange between subjects through verbal and non-verbal communication systems, mediated by computer means of communication. The use of computer communications strengthens the requirements for written speech; it involves the skill to use information resources of computer technologies.

In addition, there are many free online resources available today for online classes with students.

**Quizlet** is an online service for creating didactic flash cards for both full-time and distance learning [53]. The required information is entered into the appropriate fields and automatically the teacher receives in addition to the set of cards that perform the educational role, and various modes of work with them: training, training, control and game. You can create cards for any subject. Its purpose is from the assimilation of terms, concepts, to the solution of algebraic equations. Quizlet has the ability to upload images and record your voice. The Play block is represented by three games Match, Gravity, Live. According to some experts, setting your students up for success means so much more than teaching daily lessons and hoping students do well on assessments. It goes without saying that you need to teach the information and then provide effective ways for your students to review what you've taught. As a result, some teachers like to create customized study guides and booklets for their classes, but that takes a lot of time and effort outside of school hours. That's why so many teachers consider using Quizlet, an online study tool, to save time when helping students prepare for tests.

Quizlet is considered to be a web-based application developed to help students study information through interactive tools and games. Quizlet's mission is to help students (and teachers) practice and master what they're learning. In Quizlet, information is organized into "study sets" that users like teachers or students add to their accounts. When using Quizlet, students log in and choose the appropriate study set for the concepts they need to review. These can be created by a teacher or

generated by other users. Because of the flexibility and customization available, Quizlet can be used in any grade level and any type of class.

Overall, Quizlet can be a great tool for you and your students for three reasons:

1. You can easily differentiate review for your students
2. You can incorporate collaboration and teamwork into your classes

Students have another way to prepare for tests

Quizlet has seven standard study modes that help students review in the way that works best for them: Flashcards; Learn; Write; Spell; Test; Match; Gravity.

To sum up, with all of these options, you are creating a customized way for your students to review information, without you having to do a lot of extra work [21].

**Kahoot** is an application for educational projects. It enables teachers to create tests, surveys, training games or organize a marathon of knowledge. This app works on both computers and smartphones. An interactive tool is considered to be a way to increase engagement with a target audience by allowing them to interact with each other. Kahoot is known to be a free student-response tool for administering quizzes, facilitating discussions, or collecting survey data. It is a game-based classroom response system played by the whole class in real time. Kahoot uses game-based learning approach to inspire creation and research in students. Its game-based system is very entertaining unlike other traditional quiz procedure [63].

Kahoot was founded by Johan Brand, Jamie Brooker and Morten Versvik in a joint project with the Norwegian University of Science and Technology. Kahoot was designed for social learning, with learners gathered around a common screen such as an interactive whiteboard, projector, or a computer monitor. The game design is such that the players are required to frequently look up from their devices. The gameplay is simple; all players connect using a generated game PIN shown on the common screen, and use a device to answer questions created by a teacher, business leader, or other person. These questions can be changed to award points. Points then show up on the leaderboard after each question.

Kahoot has now implemented 'Jumble'. Jumble questions challenge players to place answers in the correct order rather than selecting a single correct answer. It offers a new experience that encourages even more focus from players.

Kahoot can be played through different web browsers and mobile devices through its web interface.

Summing up, Kahoot has statistical significant improvement on learning performance compared to traditional teaching and other tools, statistical significant improvement on students' and teachers' perception of lectures, statistical significant improvement on classroom dynamics, and that Kahoot! can reduce students' anxiety compared to traditional teaching and other tools [20].

Another application that can be used by teachers at lessons is **Plickers**. It is an online service that allows a teacher to conduct a survey and collect data in a lesson without using students' mobile devices. Plickers uses the teacher's tablet or phone to read QR codes from student cards. Each student has a personal card with a unique number, it can be rotated, which gives four different answer options. The application



generates a class list, and with it you can find out exactly how each student answered the questions. This is an online service that provides:

- conducting tests, surveys and quizzes in the classroom.
- instant result of a test, poll or quiz.
- each student sees his or her test score.

Some researchers claim that the service has both advantages and disadvantages. The pros include working with cards, feedback from students, immediate result, easy to create surveys and teacher work in the app, saving tests, results in the system and on the computer. However, there some cons: the interface is in English, only 4 answer options, the presence of the Internet on the teacher's smartphone, computer, projector and Internet.

To start using Plickers, you need to register on the site. After that, the teacher enters the library interface. In order to works with Plickers it is needed to have only one mobile smartphone for a teacher running iOS or Android with the Plickers mobile application installed; a set of cards with QR codes (the application creates cards with QR codes); a projector with an open Plickers site in Live View.

There is an algorithm of the teacher's work: on a computer in a browser go to the website [www.plickers.com](http://www.plickers.com), enter your username and password, create classes, prepare questions, attach questions to class, print cards with a QR code (each card has a unique number). Then the students are distributed cards with a QR code according to the list (cards can be pasted in a diary), conduct testing on the website [www.plickers.com](http://www.plickers.com). After choosing a class, questions should be displayed on the screen from your smartphone. Students' QR codes should be scanned with the smartphone. After that students pick up cards (QR codes), turn their cards to place the selected answer on top. The questions can be repeated and the results can be displayed on the screen and the answers can be analyzed [46].

**Mentimeter** is a tool that allows the speaker to represent the audience in real time. Using this tool, the speaker can find out what the audience thinks about one way or another through online voting via mobile phones, tablets or computers. The purpose of this service is to create effective bilateral interaction at conferences and meetings [38].

Thus, in practice, teaching is now of great importance to the author's didactic tools designed for the needs of a specific lesson, taking into account the characteristics of the contingent of students. The above review of the online environment demonstrates the great ability of the teacher to independently create didactic resources. The developed didactic materials can be used for both individual and group and frontal organization of students' cognitive activity.

Mentimeter is a simple and easy-to-learn voting tool, providing instant feedback from the audience. Its convenient use to survey students in real time in the classroom, as it is available both on mobile devices and in the electronic environment. An online survey can include a series of questions with different types of responses:

- multiple choice (one or more of several);
- open answer;

- assessment on a scale;
- ranking of responses within 100%;
- input of the answer in the form of a point on a flat coordinate plane.

Multiple choice question where the respondent can choose one or more correct answers.

An open-ended question where the respondent enters the answer in text form in the answer box. The results can be displayed in different formats: as rectangular blocks, word clouds, words located one above one, etc.

A question with an answer using a scale where the respondent assesses the specified parameters (indicators) within the set scale, for example, from 0 to 5.

A question with a distribution of answers within 100% where the respondent distributes the weight (score) parameters, indicators within 100%.

Question with an answer on the matrix where the respondent assesses the objects according to two criteria, which are axes of the chart.

In order to work with the program, it is necessary to register on the website <https://www.mentimeter.com>.

To conduct a survey in the classroom the following technical devices are required: PC with image translation on the screen for a teacher; smartphones or tablets with Internet access for students. In addition to that, voting is carried out on the site, so no special application is required on a smartphone or tablet.

The procedure for preparing and conducting an online survey of students in the classroom is as follows:

1. The teacher creates a survey in advance including one or more questions.
2. In the classroom the teacher starts the survey from the PC. On the screen (poll results board) displays the address and survey code for students.
3. Students using mobile devices enter the website [www.govote.at](http://www.govote.at), enter the survey code and answer the questions.
4. The survey results are instantly displayed on the screen.

You can conduct a survey both in a synchronous mode (in the classroom, "here and now"), and in an asynchronous - at any time within the specified polling interval.

The program settings allow to set the mode of participation in the survey - the student can answer only the current question or all; to change the design of the presentation of the results; to set a time frame for the survey; to clear the results and re-conduct the survey; to generate a QR code for quick access to the survey; to use a special plug-in to embed the survey into the MS PowerPoint presentation.

It is important to highlight that anonymous voting can be effectively used as a formative assessment tool when it is necessary to determine the general level of understanding of a topic, a question by students. It has a number positive properties, in particular: anonymity allows the voter to avoid stereotypical thinking and express a personal opinion; lack of criticism or negative assessment from others; it is easier for respondents to express themselves; results will be more accurate as participants are not subject to pressure from others; anonymity allows you to avoid the negative dominance of the opinion of one or more voting participants [69].

**LearningApps.org**

This is a free interactive building block to support teaching or self-study with interactive modules. The teacher can use existing modules, modify them and create new modules using the proposed constructor and templates. Interactive assignments are arranged according to subject categories. LearningApps.org allows you to work independently - create assignments, or you can complete assignments prepared by the teacher, the results of assignments are reflected in the teacher's account [17].

Dealing with functionality and navigation is very simple. To do this, just click "all exercises" at the top of the main page, and you will see a list of exercises created and published by other users. To create and save your own tasks, you must register. After registration, templates will become available to you that will help you create an interactive exercise for students.

Templates are grouped by functional attribute:

- Choice - exercises for choosing the right answers;
- Distribution - assignments to establish compliance;
- Sequence - to determine the correct sequence;
- Filling in - exercises in which you need to insert the correct answers in the right places;

Online games are competition exercises in which a student competes against a computer or other students. In addition, you can create accounts for your students and use your resources to test their knowledge right on this site.

In order to use this application, the following instructions should be followed: the teacher prepares a test, quiz or survey, registers at LearningApps.org, in the upper right corner clicks on the flag to use the language, selects the menu command "Create Class", after creating a class, the teacher fills in the "Student Accounts" tab and copies the first and last names of the students in the class, prints out student accounts (login and password are created by the application automatically) and issues to each student, selects the menu command "Class folder" and creates a subject, selects the menu command "All exercises" and the subject, finds the required assignment for the given class. Control over the performance of tasks is carried out through the menu commands "Statistics" and "Activation" [37].

### **Zoom**

Recently all classes around the globe have moved to a remote learning format which created lots of obstacles in educational process. However, instructors and students are eager to maintain the academic rigor and intellectual vibrancy of the classroom. Live video with interactive participation is one of the best ways for instructors and students alike to replicate the classroom experience. Zoom is now available to all students, faculty, and staff and it is just the tool to help you do it.

The matter is that Zoom is a video collaboration tool that provides a click-and-connect conferencing solution. You can use it for classroom teaching and learning, group discussions, or even one-on-one office hour meetings. Zoom is an easy-to-use tool to create a video meeting, invite students or colleagues, solicit participation, and share resources. It is as close to being in the same lecture hall or office as you can get while working and learning from home. And with the University's new enterprise license for Zoom, students, faculty, and staff can access it for no cost.

Some benefits of Zoom: platform independent: participants can join the session from any device - no VPN needed; scalable: one-on-one meetings, up to a class of 500 students or a staff meeting up to 300; easy and intuitive: one-click connection for easy video and audio; real-time interaction: chats, polls, breakout rooms, content sharing; closed captioning and keyboard shortcuts: ensures accessibility for all learners. To conclude working in a virtual classroom requires patience. Begin with simple activities for you and your students to get comfortable with the new format and provide time and opportunity for your students to ask you questions.

Some researchers claim that many teachers, students and their parents are already accustomed to the fact that distance virtual learning is their new reality. Switching to this format can be difficult, so it is significant to share some important information on how to conduct classes in virtual classrooms Zoom not only safely but also effectively.

Here are the 10 most common questions related to how to use Zoom for virtual education and online learning.

1. What is better to use for classes - Zoom Meetings or Zoom Video Webinars?

Conferences and webinars are considered to be equally suitable for communicating and collaborating with a large audience, as well as gaining access to valuable data through mandatory registration. It should be kept in mind that in some respects there is a significant difference between conferences and webinars.

At conferences, users can use audio and video, show the screen and share comments in real time. This method is intended for meetings where participants are expected to actively interact and work together.

At webinars, the organizer gets control over the audience. Here, participants do not communicate with each other using video and audio, but address the organizer through a dialog box of questions and answers, as well as a chat panel [16].

The conference format will be useful if you organize an interactive classroom environment and want students to work together on tasks and share information directly. It is better to choose webinars for online lectures - here participants have the opportunity to listen and view the content, as well as ask questions through a special function "Questions and Answers".

The chart below shows a parallel comparison of the features that are provided to licensed users of conferences and webinars - it will help you determine what is best for your training.

Feature	Large meeting	Webinar
Size	Up to 1,000 participants	Up to 10,000 attendees
Registration	✓	✓
Recurring series	✓	✓
Chat	✓	✓
Polling	✓	✓
Reactions	✓	
Reporting	✓	✓
Practice Sessions/Green room		✓
Q&A		✓
Breakout rooms	✓	

## 2. How to best set up a virtual audience?

Here are some tips for creating the safest and most effective virtual audiences.

Set a password. Create a password for a conference or webinar and provide it to your students. Only participants who have access to a password will be able to join your virtual audience.

Request registration. With registration, which is set for both conferences and webinars, you can see who is planning to join your audience. You also have the ability to self-verify each registered user to identify future event attendees.

Turn on the waiting rooms. Waiting rooms do not allow users to join the class automatically. For those who have signed up for our school program, they are connected by default. You can take participants one or all at a time. You have a feature that allows students who use your school's domain to log in to bypass the waiting room. In this case, participants who do not have access to the school domain are accepted individually.

Disable the screen demonstration. For users in the field of education, this feature is set by default so that the screen demonstration is available only to event organizers. This way, participants will not be able to share distracting or inappropriate information in class. If you want to allow users to share content, change the settings for this feature or check the box to show content in the conference via the Security menu.

Disable personal chat. The organizer may block the chat and prevent students from exchanging messages with each other. Chat with the teacher remains available.

Manage participants. Use the Security menu controls to remove unwanted participants who have joined your activity. For more information on how to manage participants, such as mute, stop video, or prevent name changes, see our support page.

Block the conference. You can block a conference via the Security menu if you do not want additional participants to join it after the start of your session. Thanks to this feature, you can not only protect yourself from unwanted guests, but also wean students from being late.

## 3. What measures should be taken to ensure that classes in the classroom are safe?

There are a number of default features and settings that ensure the security of Zoom audiences and require no further action.

The Security menu is a handy section that brings together all the features that make conferences safer. Through this menu, organizers or co-organizers have access to the following functions:

- Conference lock
- Turn on the waiting room
- Deleting participants
- Prohibition on screen display, chat, personal name change and commenting for participants

## 4. How to control class attendance?

One way to track attendance is to require registration. This way you will

receive registration reports and find out who registered for the class and who attended it. Another way to control is to run surveys during class. After the survey, you can export the report and see who took part in it to mark those present.

#### 5. How to make all students visible on the screen?

With Zoom Gallery View, you can see up to 49 participants at a time. To do this, enable this feature in the video settings. Don't worry if there are more than 49 students in the audience - The gallery view allows you to view up to a thousand participants. You just need to switch between the pages, where 49 thumbnails of users are displayed, using the left or right arrow.

#### 6. How to set up session halls?

Session rooms provide the ability to divide the audience into 50 separate sessions or less. This feature is great for classes or assignments designed for group work. Audio, video and demonstration functions are fully available to the participants of each session hall. The organizers can receive notifications from the participants of each hall that they need help, as well as switch between halls to answer students' questions.

To use this feature, you must enable session rooms in conference settings. The organizer can distribute students in groups independently or automatically.

#### 7. How to turn on the screen demonstration?

The screen demonstration is a feature that allows students to show slides, videos, and other important materials. You can also allow the screen to be shown to participants so that they can show their work. To turn on the feature, tap the green Screen Demonstration icon and select what you want to show. If you're showing a video, be sure to select the "Share computer audio" checkbox.

Through the screen demonstration, you can also broadcast an additional camera image during a Zoom session. This means that the organizer has the ability to display content from a document camera, which performs the same function as a ceiling projector. Appreciate our integration with Kaptivo, which allows you to read and transmit information from the board to audiences online.

#### 8. How to leave comments?

By showing off your screen, you can add pictures, text and stickers to the content, and allow participants to leave comments on their screen. This is a great way to engage students in the process and work with them.

You can use the message board with participants during the demonstration. The message board is similar to a regular whiteboard for audiences, but in digital format - it is a white page and is needed to work on the tasks of the lesson with students.

#### 9. What features are available for Chromebook users?

Chromebook users can use almost any of the conferencing features available on other devices. All you have to do is download the Zoom app from the Chrome Web Store and join your conference. After that, you can use all the features except polls, message boards, comments, and remote management, as they are not available for Chromebooks. Learn more about using Zoom on your Chromebook.

#### 10. Is it possible to organize conferences and join them via mobile devices?

The Zoom platform provides seamless and reliable access to conferences on any device - including mobile. However, some conference controls, such as creating and running polls, creating session rooms, and controlling the screen demonstration for participants, are not available on mobile devices. The view of the gallery is also limited on smartphones and tablets.

Some advantages of Zoom technology should be taken into consideration:

- organizing hybrid and online lessons,
- attracting students with spectacular virtual assignments,
- expanding access to education,
- improving the learning process,
- increasing student engagement by combining synchronous and non-synchronous learning tools,
- connecting with other students, parents, and your educational community outside the classroom,
- integrating your educational ecosystem.

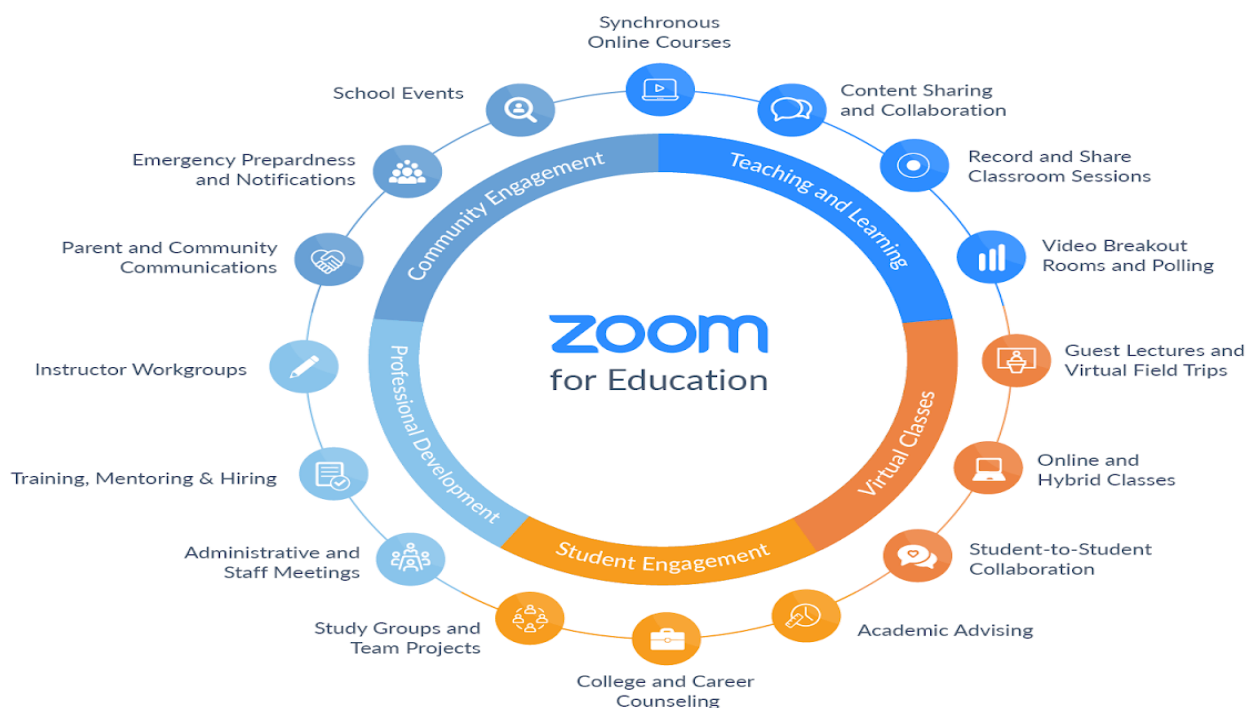
It should be mentioned that it is a full-fledged unified communications platform that provides new methods of teaching, learning, research and leadership. Zoom helps teachers to manage lessons: waiting rooms, a customizable virtual seating plan, multi-user tracking and tracking features, and other features will help you manage your online lesson. It is possible to increase involvement: one-click sharing, comments, e-mail, session rooms, surveys, reactions, and high-quality music mode contribute to student participation and engagement. Zoom supports asynchronous learning and records lessons so students can learn at their own pace. It also can adapt the learning process by getting the most out of API extensions for seamless integration with library management system (LMS) vendors such as Canvas, Blackboard, Desire2Learn, Moodle, Schoology, Sakai and more, create customized integrations with Zoom's LTI Pro and access the best educational applications through Zoom App Marketplace. The matter is that students and teachers are provided with special opportunities: on-demand subtitles, real-time decoding, keyboard shortcuts and other special features provide students with access to the services they need.

In addition to that, this technology ensures safety and regulatory compliance. Single sign-on for the audience, security features during the conference and other measures ensure the security of your Zoom audience, prevent disruptions and ensure compliance with FERPA and GDPR. Moreover, it can maintain a flexible working environment and integrates your communications across the organization with Zoom Phone, Zoom Chat, Zoom Rooms and digital displays [16].

### **Socrative**

Socrative is a smart, student response system that empowers teachers to collect data from their students via smartphones, laptops, and tablets. It is a great way for teachers to assess students and collect immediate feedback. It is said that it is a quiz-based, formative assessment tool with multiple features that can enrich teaching and learning. Educators have a great opportunity to design quizzes, space races, exit tickets, and more to collect and analyze student data in real-time to make on-the-spot

teaching changes and improve student learning.



Socrative is considered to be a tool for creating, retrieving and distributing tests, as well as for testing. The service also has an extensive database with ready-made and tested by the site administration tests.

There are also 3 modes of testing:

1. Instant Feedback - students choose the answers to the questions in order, without the right to change the answer and even temporarily skip the question, leaving it for later.

2. Open Navigation - students can answer in any order and change the answers. However, even before the test is completed, the teacher sees the student's response.

3. Teacher Paced - the teacher chooses which question will be next and has the right to skip or repeat the question.

During the test, the teacher can observe in real time the progress of the test: in the table teachers can note who and how answered the various questions. After the test, the results can be saved to Google Drive or sent by mail. Socrative is a fairly easy to handle and learn service.

*Service features:*

- Creating many questions (text, logic).
- Work with your smartphone.
- Feedback from students.
- Instant result.
- Save tests, results in the application and on the computer.
- Easy registration of students.
- Parallel online and offline surveys (in the absence of phones for students).



In addition, Socrative can be easily accessed on the following operating systems: Windows, Apple, and Chrome. It is necessary to mention that no downloads are required. This modern application can also be used on numerous hardware: desktops, smartphones, tablets, and mobile phones [42].

It is essential to spend some time to become proficient with this tool. As soon as a free account is created, teachers are automatically given one public room. It is a special room, in fact a virtual meeting place for teachers and students. In order to track student activity within a public room, students must first enter the name of the public room, followed by their personal name.

The advantage of this tool is that students do not need to create their own accounts. They can be invited by teachers via a URL into a room to access a quiz, quick question or space race. Socrative offers a lot functions within a public room to its users: creating a quiz, searching for a quiz, copying a previous quiz, editing quizzes etc. Obviously question types can be multiple choice, true/false, or short answer, and question order can be shuffled for each student. The downside of the application is that while images can be uploaded to a quiz, there is no support for audio or video files.

There is also an option to download an Excel spreadsheet with data on overall class performance. Besides, individual student reports can also be available to download in PDF format or can also be e-mailed to teachers.

One remarkable feature of Socrative is the Quick Question which allows students to answer a multiple choice, true/false, or open-ended question in real-time. The matter is that it was intended to provide teachers with an easy method to capture collective classroom performance periodically throughout a lesson. Moreover, it permits teachers to calibrate their lessons, to better ensure that the learning needs of all students are being met. The benefit of Quick Question is that students' results can be shared immediately.

The next option provided by Socrative is Exit ticket. In fact, it is a quiz that is recommended to be launched at the end of a lesson. Thus students are provided with an opportunity to demonstrate their knowledge of content for the day and teachers can be ensured that the objectives of the lesson were met. It is recommended to use Exit Ticket to adjust homework assignments or address mistakes.

To conclude, with Space Race teachers are permitted to create a quiz so that students or student teams can contest. While answering each quiz question, students' avatar moves ahead in the race. The idea is that the student or team who answers the most number of questions correctly, during the specified time frame, wins the race. It should be mentioned that Socrative provides an opportunity for all students, regardless of level, to track and understand their progress and improves equity in education [29].

The teaching of a foreign language by means of information and technical means is determined by the following criteria:

1. to promote the efficiency of the educational process;
2. to provide immediate and constant reinforcement of the correctness of each student's educational actions;

3. to raise awareness and interest in language learning;
4. to provide prompt feedback and operational control of the actions of all students;
5. to have the ability to quickly enter answers without their long coding.

The activity of the modern educator is connected with the need to use visualized means of presenting information in electronic form; collect information received from different sources over time and merge it into a related structure. For this purpose, the teacher uses the capabilities of computer networks that provide the use of information exchange facilities and the sharing of hardware, software and information resources [77].

On this basis it is possible to increase students' motivation to learn a foreign language and to intensify the acquisition of skills specific for this discipline. Therefore, students are required to be trained in this environment and to use ICT in foreign language learning.

Based on the analysis of scientific works we have been shown that info-communication tools have a huge potential in preparing students in the process of learning a foreign language, which make it possible to get acquainted with different authentic, text, audio and video materials activities, create the conditions for realizing the intellectual potential of students, fostering tolerance of the common culture.

In this connection it is possible to formulate the following requirements for foreign language learning tools: the ability to use different types of learning activities for organizing; possibility of updating the educational material; methodically justified graphical interface; moderate and reasonable use of video and audio; the ability to process different types of data; local and network mode of work, implementation of audio control of students; the ability of the teacher to observe the process of teaching students in a networked environment; friendly intuitive interface; controlling students through quality testing. These tools should make it difficult for those students who successfully cope with the proposed tests and vice versa, and simplify the tasks for students who have difficulty completing them; collect information about common mistakes when performing tasks to process them, as well as keep statistics of errors in this section, analyze them and offer lessons to improve the assimilation of material.

In our opinion more active use of various innovative means will facilitate the acquisition of foreign language by students in the educational space which is the basis of the experimental research we are conducting.

#### **4. Professional readiness of Humanities teachers to carry out innovative pedagogical activities**

The readiness of the teachers to carry out professional activities is an integral part of their professional competence. Today's conditions, namely the rapid globalization, informatization, significant growth of technology, the need to work in a pandemic, make new demands on the teachers and their personal and professional qualities. The main task of national education is to create conditions for the development and self-development of each individual, to form a generation that will be able to learn throughout life, able to create and develop the values of civil society. That is why now, more than ever, we need teachers who are able to work with new

technologies, approaches, forms and methods of teaching.

The most significant sign of reforming modern educational systems is their "innovation", which is manifested in the testing of domestic and foreign educational technologies by teachers, which are alternative to traditional ones. In addition, innovative pedagogical activities are implemented through the creation of author's educational programs, technologies, etc. Therefore, an important component of teachers' professionalism is their readiness to evaluate new pedagogical technologies, determine their compliance with the needs and capabilities of a particular educational institution, readiness to introduce innovative forms and methods of work, readiness for innovative pedagogical activities.

The priority of the education development in the XXI century, the world community has recognized its quality, and the new standards of higher education clearly define the range of professional and general competencies that specialist must have in accordance with the degree of professional education. According to the National Strategy for Education Development in Ukraine for 2012-2021, one of the priority strategic directions of education development is the creation of a national system for monitoring the quality of education. Assessing the quality of education becomes an element of its effective management, so monitoring is an essential component of the organization of education, because it allows you to assess the compliance of education with certain standards, forecast development prospects and develop management influences.

Introduction of monitoring researches in various spheres of activity is carried out in studios of such scientists as I. Annenkova, N. Baidatska, L. Vasilchenko, T. Voloshin, A. Dakhin, G. Yelnikova, V. Zaika, N. Kruglova, I. Lapshina, O Lokshina, T. Lukina, K. Lupinovich, S. Lupinovich, A. Mayopov, I. Makarenko, M. Martinenko, V. Mozalev, S. Nesterenko, T. Olender, O. Ostroverkh, N. Pastukhova, V. Repkin , G. Repkina, Z. Ryabova, L. Tarasyuk, D. Wilms, A. Kharkivska, E. Khrykov, O. Chorna, L. Shchogoleva and others.

Terminological sources interpret the concept of monitoring somewhat differently. Thus, the compilers of the foreign words dictionary indicate the origin of the word from English *monitor* - to observe, and the term "monitoring" is interpreted as constant control over any process in order to study the compliance of this process to the desired result [52, c.287]. In the large explanatory dictionary of the modern Ukrainian language, "monitoring" is a continuous monitoring of any process in order to identify its compliance with the desired result [80, c.538].

In pedagogical sciences, monitoring is considered: as a means that allows continuous monitoring of the educational process in order to identify the effectiveness, rationality of a particular pedagogical method [8, c.36-37]; as an accompanying monitoring and current regulation of any process in education, based on certain indicators combined into a standard, and in accordance with these indicators is monitoring the condition and dynamics of the managed object in order to quickly diagnose, develop and adjust management decisions [81]; as a system of collecting, processing and disseminating information about the activities of the educational system, which provides continuous monitoring of its condition and

provides a forecast of its development[70]; as an effective means of education management, which allows to manage its quality through the receipt of quantitative and qualitative indicators [33].

We fully agree with the opinion of A. Kharkivska, who considers pedagogical monitoring as an effective way to manage the quality of education, which ensures the quality of all major components of the educational process, namely: goals, content of education, material and technical base, organization of the educational process [22].

Thus, the main result of the preliminary thematic analysis of scientific theory, we consider the realization that the vast majority of authors share an understanding of the essence of monitoring as a conceptually complete functional system designed to ensure the proper quality of education.

Clearly formulated principles of educational monitoring are presented in the works of O. Lokshina [31], E. Khrykov [23], L. Shchogoleva [65]. Among them the main ones are the principles of coherence of normative and legal, organizational and scientific support of its constituent parts; validity - compliance of the proposed control tasks with the content of the studied material, clarity of measurement and evaluation criteria; regularity - monitoring in a certain sequence (stages); objectivity, taking into account all the results (positive and negative) and the complexity of the study; continuity and duration of observations; timeliness of receiving, processing and use of objective information; reflectivity, which is manifested in the reflection of the quality of results, the implementation of self-assessment and self-control; taking into account psychological and pedagogical features; humanistic orientation of monitoring.

In order to ensure adequate use of the conceptual apparatus in our research in the development of the monitoring system, we will also clarify the essence of the concepts of "professional readiness" and "innovation".

N. Mazur [36] in his research identifies two approaches to the definition of "readiness": according to the first, readiness is interpreted as a certain mental state, and the second - as a certain property or system of properties and qualities of personality. The researcher highlights the main similarity of the studied phenomenon in the views of scientists: most include the concept of readiness, knowledge, skills, experience and the attitude of the individual to the future profession, which is the desire for self-realization in it.

Research on readiness is also found in the works of K. Durai-Novakovska, who understands it as a system of integrative qualities, properties, knowledge and skills of the individual [10].

The phenomenon of "professional readiness" has long attracted the attention of scientists and has been the subject of special research since the 19th century. The concept of professional readiness of teachers is considered from different positions, but most often researchers use it in the meaning of the functions of the teacher in the practical meaning of his skills.

M. Kulakova, L. Miroshnychenko, L. Bekirova, I. Gavrish, L. Dziuba-Shpuryk, O. Dupliychuk, K. Durai-Novakova, V. Kovalev, L. Koval. , D. Pashchenko, A. Polyakov, V. Slastyonin, O. Shapran and others studied the problem

of professional readiness formation and its structure at different times.

The most significant interpretation of the concept "readiness for professional activity" and its components is found in the works of V. Slastyonin[68]. Together with the researcher, we are convinced that readiness for professional activity is an integral part of professional competence of a specialist, and this phenomenon must be manifested in the ability to identify with others, in an appropriate psychological state that reflects the dynamism of the individual, richness of energy, initiative, will, ingenuity and emotional stability; the presence of professional thinking, which allows you to identify cause-and-effect relationships, analyze their activities, find scientifically sound explanations for successes and failures, as well as predict the results of work.

The analysis of scientific sources revealed some differences in the number of components of readiness for professional activity of teachers. Thus, scientists M. Dyachenko and L. Kandybovych distinguish 5 components: motivational, orientational, operational, volitional and evaluative [11]. Evaluation, according to scientists, is manifested in the presence of a specialist's need to successfully perform the task, interest in the object of activity, in the pursuit of success; the orientation component should include knowledge and ideas about the features and conditions of activity; the presence of an operational component implies mastery of methods and techniques, skills and abilities; the volitional component is characterized by the internal need of the individual to control their actions; the ability of individuals to provide self-assessment of their preparedness and compliance with the process of solving professional problems is an evaluative component.

E. Zeyer, O. Konyukhova include in the structure of professional readiness 4 components, namely: motivational, cognitive, emotional and volitional. The motivational component is manifested in the need for work, interest in the profession, as well as in the idea of social status, prestige of the profession, material interest; cognitive component includes understanding the social significance of the chosen profession, knowledge of ways to achieve the goal; pride in the profession, aesthetic attitude to professional skills is an emotional component; volitional component involves the ability to mobilize their forces, to overcome difficulties on the way to the goal [83].

N. Ippolitova identifies 3 interrelated components of a teacher's readiness for professional activity: personal, cognitive and praxiological components. The personal component includes the degree of moral and pedagogical readiness of the teacher for professional activity, and also reflects the level of formation of value orientations, interest in the profession, the level of motivation development; the cognitive component reflects the level of awareness of the teacher about the nature and content of pedagogical activities, the availability of general pedagogical, methodological, special subject knowledge necessary for effective professional and pedagogical activities; the presence of professional skills and abilities necessary for the implementation of pedagogical activities and ensuring its effectiveness determines the praxiological component [18].

Agreeing with the opinion of V. Maslennikova, we believe that one of the most

important components of a teacher's readiness for teaching is the moral component, which includes a certain set of personality traits. The profession of a teacher belongs to the socially significant professions that require working with full commitment in the interests of society, while showing a sense of responsibility, independence, perseverance in achieving the goal, creative performance of professional functions [35].

Let's move on to the interpretation of the term "innovative activity", which is important for our research. The problem of innovative pedagogical activity attracts the attention of many scientists and is studied in different aspects: methodological (I. Gavrish, G. Kornetov, V. Zagvyazinsky, V. Lyaudis, V. Palamarchuk, I. Pidlasy, O. Savchenko, V. Slastyonin), axiological (M. Burgin, M. Klarin, O. Popova, M. Potashnyk), praxiological (S. Sedova, L. Strutsenko, A. Prigozhin), methodical (V. Bepalko, O. Piddubtseva, A. Verbytsky, N. Osukhova, E. Plekhanov), managerial (L. Danylenko, V. Kvasha, O. Homeryky)

Innovations (from the Italian - *innovazione* - novelty, innovation) are new forms of organization and management, new types of technology that cover various areas of human life. We agree with the opinion of many researchers that at the present stage of pedagogical science development there are many innovative teaching methods.

In the pedagogical sciences, the term "innovation" also has a significant number of interpretations. Let's turn to those that are most suitable for our study. Innovation, according to I. Dychkivska, in the context of the pedagogical process, means the introduction of something new in the purpose, content, methods and forms of teaching and education, the organization of joint activities of teacher and student [12].

Readiness for innovative pedagogical activity should be considered as a special personal state, which presupposes that the teacher has a motivational and value attitude to professional activity, possession of effective ways and means of achieving pedagogical goals, ability to creativity and reflection [12].

Scientists identify certain components of readiness for innovation. Thus, O. Honcharova is convinced that the main components of the future foreign language teacher's readiness for innovative activity are motivational, cognitive, operational and activity and reflexive [15]. I. Dychkivska to the components of readiness for innovative activity includes: motivational, cognitive, creative, reflexive [12]. According to N. Plahotniuk, the main components of future teachers' readiness for innovative activity are motivational, cognitive and operational, creative, and reflexive [45]. V. Slastyonin and L. Podymova distinguish motivational, creative, technological, reflective components of the teacher's readiness for innovative professional activity [68].

Our analysis of scientific sources allowed us to develop our own system for monitoring the professional readiness of Humanitiesteachers for innovation based on the previously mentioned pedagogical requirements, principles, methods, and stages of its implementation.

## **6. Monitoring of the professional readiness of Humanities teachers for innovative activities**

We have identified the following components of professional readiness of Humanities teachers to carry out innovative activities: *personal and reflexive* (this component is realized through such reflective processes as self-understanding and understanding of others, self-evaluation and evaluation of others, self-interpretation and interpretation of others), *motivational* (teacher activity, desire for success, positive attitude and cognitive interest for innovations in professional activity, desire to participate in the creation, implementation and dissemination of pedagogical innovations), *creative* (creative thinking and search for non-standard ways to solve pedagogical problems). Each component was evaluated on four levels: **low, medium, sufficient and high**.

The monitoring process was conducted in three stages. At the *organizational stage*, we determined the purpose of monitoring and respondents, developed author's questionnaires, selected methods.

The purpose of monitoring is to identify the degree of professional readiness of Humanities teachers for innovative activities in order to improve the educational system.

Well-grounded, tested in practice methods were used for monitoring, which significantly increased the reliability of the results. These are the following methodological tools: questionnaire "Identification of abilities for self-development and self-reflection", test "Assessment of the level of the individual creative potential", developed by V. Blinova and Y. Blinova questionnaire[5], "Diagnostics of the individual's motivative level for the success by T. Ehlers"

The monitoring was conducted in 5 institutions of higher education (**IHE**), namely: Dnipro State University of Agriculture and Economics (**IHE** № 1), Dnipro Academy of Continuing Education (**IHE** № 2), Prydniprovskya State Academy of Civil Engineering and Architecture (**IHE** № 3), Dnipro State Medical Academy (**IHE** № 4), Dnipro University of Customs and Finance (**IHE** № 5). The main methods of collecting information were testing, questionnaires, interviews.

The total number of respondents who took part in the formative stage of monitoring was **120** teachers.

To monitor the level of formation of the *motivational* component, teachers were offered questionnaire created by T. Ehlers. The questionnaire contained **41** questions, each question had to be answered "yes" or "no".

### ***Methods of diagnosing of individual's motivative level to the success by T. Ehlers***

Answer "Yes" or "No" to each of the following questions.

1. When there is a choice between two options, it is better to do it faster than to postpone it for a while.
2. I get easily annoyed when I notice that I can't complete the task on 100%.
3. When I work, it looks like I'm putting everything on the line.
4. When a problem situation arises, I often make one of the last decisions.
5. When I have nothing to do for two days, I lose my composure.

6. In some days my progress is average.
7. In relation to myself I am more strict than in relation to others.
8. I am more friendly than others.
9. When I give up a difficult task, I strongly condemn myself, because I know that I would succeed in it.
10. In the process, I need short breaks to rest.
11. Diligence is not my main trait.
12. My achievements in work are not always the same.
13. I am more attracted to other work than the one I do.
14. Condemnation stimulates me more than praise.
15. I know that my colleagues consider me a business person.
16. Obstacles make my decisions harder.
17. It is easy for me to arouse ambition.
18. When I work without inspiration, it's usually noticeable.
19. When doing work, I do not count on the help of others.
20. Sometimes I put off what I should have done now.
21. You need to rely only on yourself.
22. There are few things in life that are more important than money.
23. Whenever I need to do an important task, I don't think about anything else.
24. I am less ambitious than many others.
25. At the end of the holidays, I am usually happy to go to work soon.
26. When I am ready for work, I do it better and more qualified than others.
27. It is easier for me to communicate with people who can work hard.
28. When I have no business, I feel uneasy.
29. I have to do responsible work more often than others.
30. When I have to make a decision, I try to do it as best as I can.
31. My friends sometimes think I'm lazy.
32. My success sometimes depends on my colleagues.
33. It is pointless to oppose the will of the leader.
34. Sometimes you do not know what work you have to do.
35. When something goes wrong, I'm impatient.
36. I usually pay little attention to my achievements.
37. When I work with others, my work gives greater results than the work of others.
38. I do not complete many things I do .
39. I envy people who are not busy.
40. I do not envy those who seek power and position.
41. When I am sure that I am right, I take extreme measures to prove it.

**Key.** You got 1 point for answering "Yes" to the following questions: 2, 3, 4, 5, 7, 8, 9,10, 14,15, 16,17, 21, 22, 25, 26, 27, 28, 29, 30, 32, 37, 41. You also got 1 point for answering "No" to questions 6, 13, 18, 20, 24, 31, 36, 38, 39.

Answers to questions 1, 11, 12, 19, 23, 33, 34, 35, 40 are not taken into account. Calculate the amount of points scored.

**Result:**



- **From 1 to 10 points:** low level of motivation to succeed;
- **From 11 to 16 points:** medium level of motivation to succeed;
- **From 17 to 20 points:** sufficient level of motivation;
- **Over 21 points:** high level of motivation to succeed.

Table 1

The results of a survey to determine the individual's motivative level to the success *(by number of respondents)*

	IHE № 1	IHE № 2	IHE № 3	IHE № 4	IHE № 5	Total number of respondents
<b>LOW</b>	2	2	2	4	2	<b>12</b>
<b>MEDIUM</b>	8	7	11	13	14	<b>53</b>
<b>SUFFICIENT</b>	6	7	7	6	6	<b>32</b>
<b>HIGH</b>	5	3	8	4	3	<b>23</b>

The results of monitoring (table 1) (fig. 1) showed that 10% of teachers have a low level of motivation to succeed, 44% - average, 27% - sufficient and 18% - a high level of motivation to succeed.

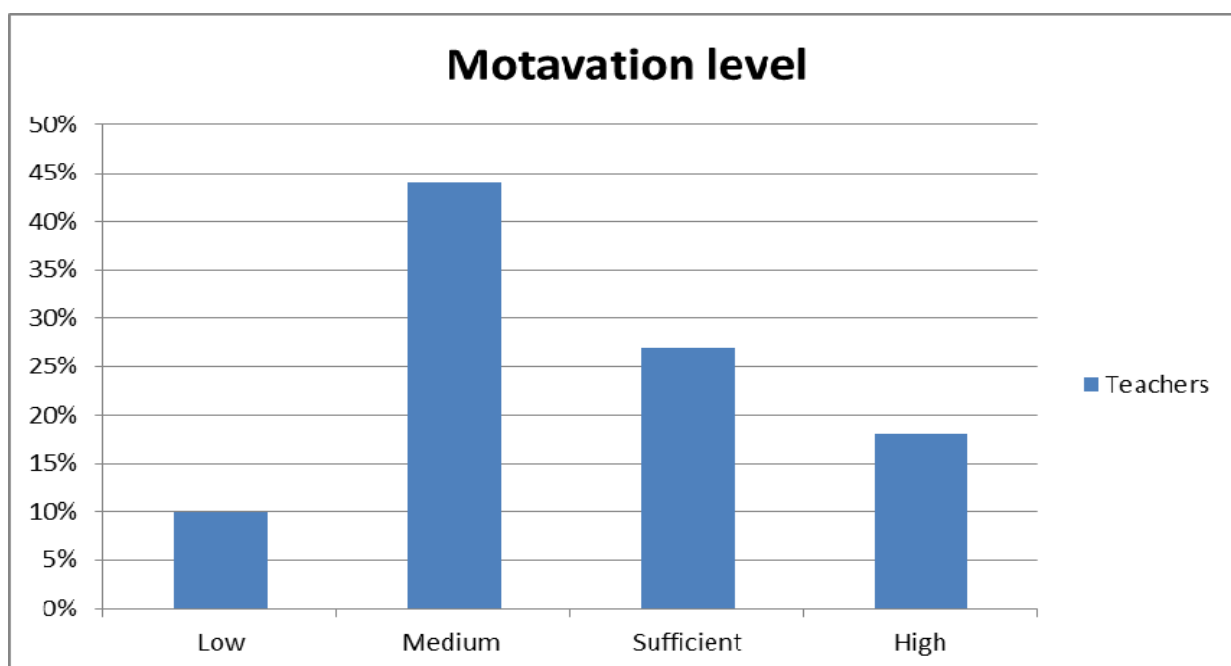


Fig. 1 The individual's motivative level to the success (%)

To monitor the level of formation of the *personal and reflexive* component, teachers were offered a following questionnaire, which aim is to identify the teacher's ability to self-development and self-reflection.

***"Identification of abilities for self-development and self-reflection.***

*1. I always try to study myself.*

2. *I leave time for development, no matter how busy I am at work (study) and housework.*

3. *Obstacles stimulate my activity.*

4. *I am looking for feedback as it helps me to know and evaluate myself.*

5. *I reflect on my activities, devoting special time to it.*

6. *I analyze my feelings and experiences.*

7. *I read a lot.*

8. *I discuss widely the issues I need.*

9. *I believe in my abilities.*

10. *I strive to be more open.*

11. *I am aware of the influence that people around have on me.*

12. *I manage my professional development and get positive results.*

13. *I enjoy learning something new.*

14. *Growing responsibility does not frighten me.*

15. *I would be positive about my promotion.*

Respondents had to determine if each statement is true or not true according to the following scheme: the statement is completely true - **5 points**; more true than not true- **4 points**; fifty-fifty - **3 points**; rather not true - **2 points**; not true - **1 point**.

The total number of points determined the level of ability to self-development and self-reflection, namely: **1-18 points** - low level, **19-37 points** - medium level, **38-59 points** - sufficient level and **60-75 points** - high level.

Table 2

The results of a survey to identify teachers' abilities for self-development and self-reflection (*by number of respondents*)

	<b>IHE № 1</b>	<b>IHE № 2</b>	<b>IHE № 3</b>	<b>IHE № 4</b>	<b>IHE № 5</b>	<b>Total number of respondents</b>
<b>LOW</b>	4	4	3	2	3	<b>16</b>
<b>MEDIUM</b>	10	9	12	10	10	<b>51</b>
<b>SUFFICIENT</b>	17	14	20	26	23	<b>28</b>
<b>HIGH</b>	24	10	15	14	27	<b>25</b>

The results of monitoring (table 2) (fig.2) showed that 13% of teachers have a low level of formation of the personal and reflexive component, 34% - medium, but 53% of teachers have a sufficient and high level of formation of the personal and reflexive component.

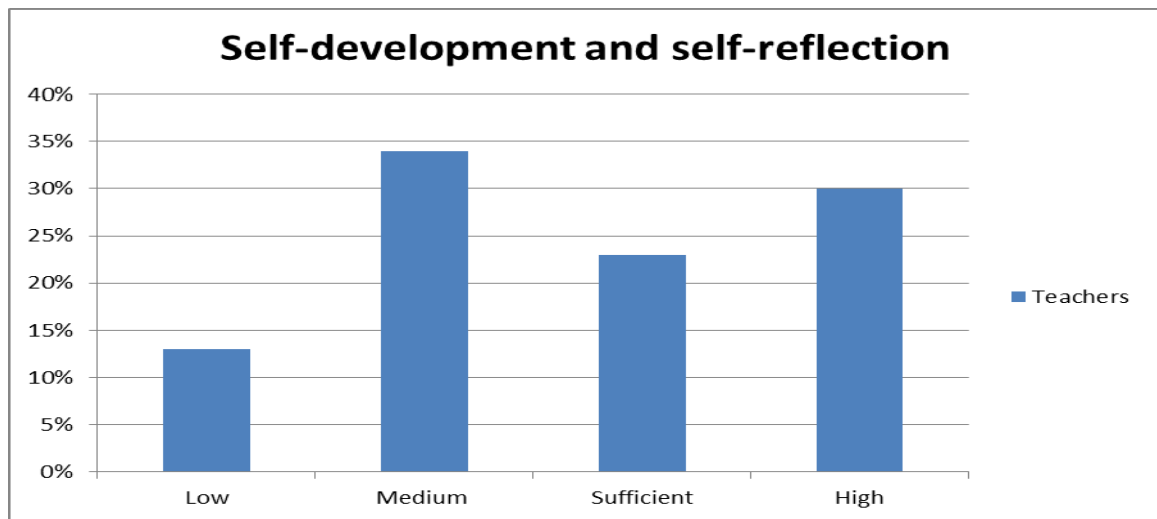


Fig. 2. The results of a survey to identify teachers' abilities for self-development and self-reflection (%)

To monitor the level of formation of the *creative* component, teachers were offered a test to assess the level of the individual creative potential. Respondents were asked 18 questions.

1. *How often do you manage to finish started business?*
2. *If all people are divided into logicians and heurists (generators of ideas), to what extent are you a generator of ideas?*
3. *To what extent do you consider yourself a decisive person?*
4. *To what extent does your final “product”, your creation, most often differ from the original project, concept?*
5. *How capable are you of being demanding and persistent so that the people who promised you something would keep their promise?*
6. *How often do you have to make critical judgments about someone?*
7. *How often does the solution to the problems you have depends on your energy and assertiveness?*
8. *What percentage of people in your team most often support you, your initiatives and proposals?*
9. *How often do you have an optimistic and cheerful mood?*
10. *If all the problems that you had to solve over the past year can be conditionally divided into theoretical and practical, then what is the proportion of practical problems among them?*
11. *How often did you have to defend your principles and beliefs?*
12. *To what extent does your sociability contribute in solving your vital problems?*
13. *How often do you have situations when you have to take the main responsibility for solving the most difficult problems in the team?*
14. *How often and to what extent do you manage to implement your ideas and projects?*
15. *How often do you manage, showing resourcefulness and even enterprise, to*

demonstrate leadership at work or study?

16. How many people among your friends and relatives who consider you a well-mannered and intelligent person?

17. How often in your life have you done something that was perceived even by your friends as a surprise or a fundamentally new business?

18. How often have you had to fundamentally reform your life or find new approaches to solving old problems?

In self-assessment, teachers should put the marks 1-10 for each question according to the level of development. Teachers were recommended to imagine the highest (10th) level of development of the corresponding quality and the lowest (1st) level and find themselves a place on a 10-point scale.

The total number of points determined the level of creative potential of the individual, namely: **1-36 points - low level**, **37-73 points - medium level**, **74-108 points - sufficient level** and **109-142 points - high level** of creativity.

Table 3

The results of a survey to identify the level of creative potential of the individual (by number of respondents)

	IHE № 1	IHE № 2	IHE № 3	IHE № 4	IHE № 5	Total number of respondents
<b>LOW</b>	3	2	3	2	4	<b>14</b>
<b>MEDIUM</b>	8	7	9	7	11	<b>42</b>
<b>SUFFICIENT</b>	7	8	6	9	6	<b>36</b>
<b>HIGH</b>	4	3	5	2	4	<b>18</b>

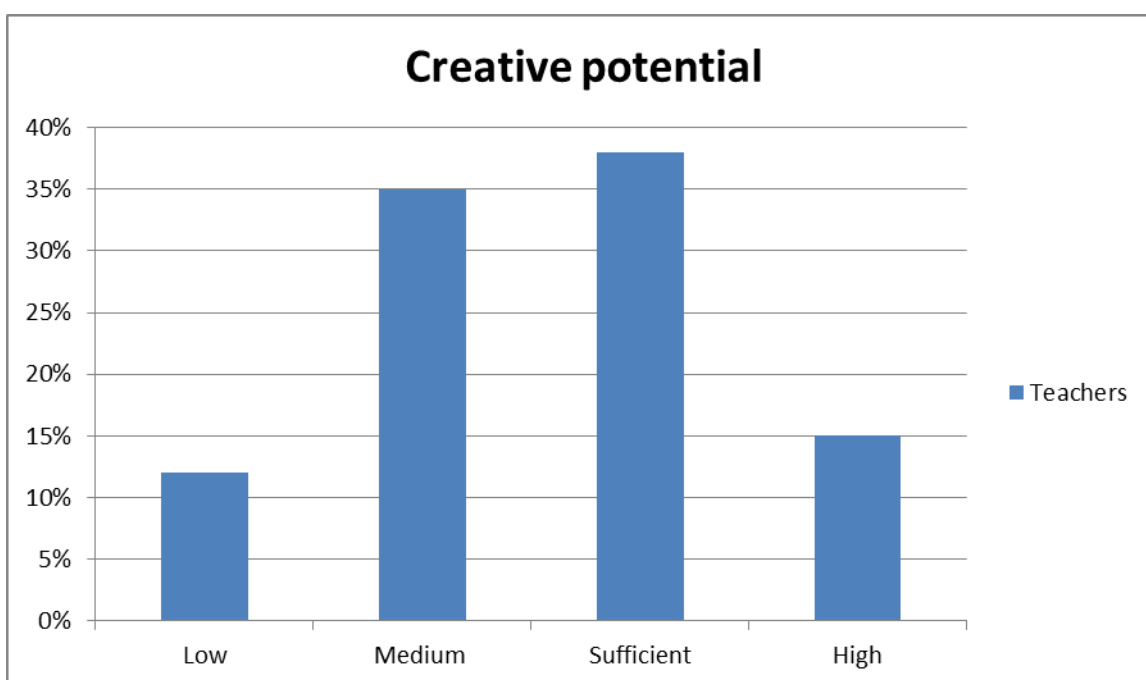


Fig. 3 The results of a survey to identify the level of creative potential of the individual (%)

The results of monitoring (table 3) showed that 12% of teachers have a low level of creative potential, 35% - medium level, but 55% of teachers have a sufficient and high level of creative potential.

In order to identify the main reasons that inhibit the effective innovative work of Humanities teachers, we conducted a survey, during which teachers had to indicate the main reason of inhibition. The following reasons were named by teachers:

- insufficient level of theoretical knowledge and practical skills for the implementation of innovative technologies and methods of work (**18** respondents) (15%);
- insufficient material and technical base in the educational institution, which would allow to carry out innovative activities (**42** respondents) (35%);
- lack of time for self-development due to excessive workload (**29** respondents) (24%);
- personal fears and psychological unpreparedness for innovation (**14** respondents (12%) and other reasons (**17** respondents (14%)).

Among other reasons mentioned by teachers were: lack of interest in the profession, low earnings, unwillingness to improve, negative and stereotypical attitude to innovation in education.

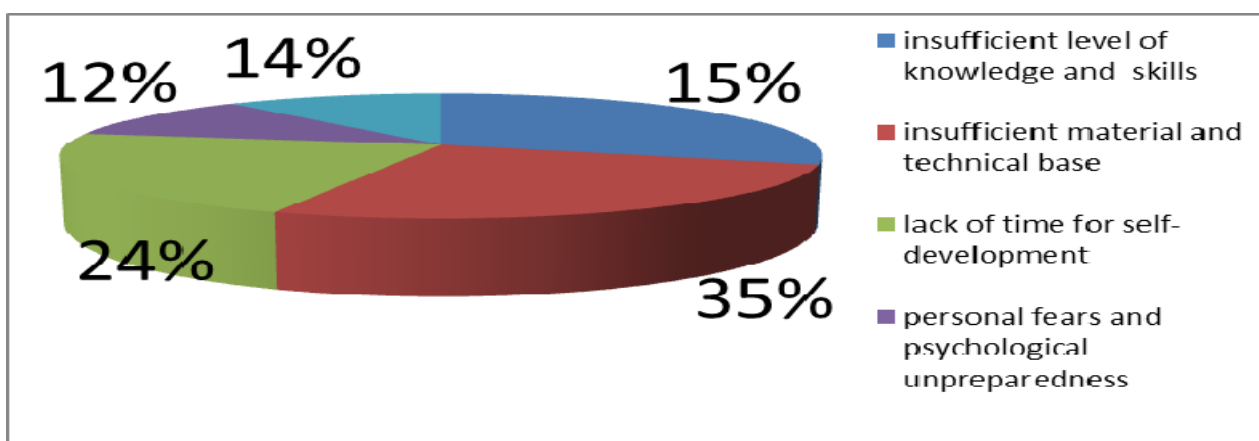


Fig. 4 Reasons that inhibit the application of innovations in the pedagogical activities of the Humanities teachers (%)

Thus, the main reason (Fig. 4), which inhibit 35% teachers to innovations in their work, is the material and technical base in the institution of higher education. Other important reasons are insufficient time for self-development and insufficient level of knowledge and ideas about the peculiarities of innovative educational process. 12% of teachers have personal fears about the introduction of innovative education.

As one of the significant reasons for slowing down the learning process was the lack of knowledge and skills in innovative education, teachers were offered a questionnaire in which they should choose the main source of knowledge about innovation in education: *Internet* (various educational sites, educational platforms);

*training courses; printed mass media* (magazines, manuals, methodical recommendations); *participation* in methodological associations, seminars, conferences, symposiums, round tables, etc.

Respondents were asked to name several sources, but be sure to indicate which is the most effective and favorable for them. Among 120 respondents, **48** respondents mentioned the Internet as the main source of additional knowledge, **18** – training courses, **18** - print media (journals, manuals, methodological books), **36** - participation in methodological associations, seminars and conferences (Fig.5 ).

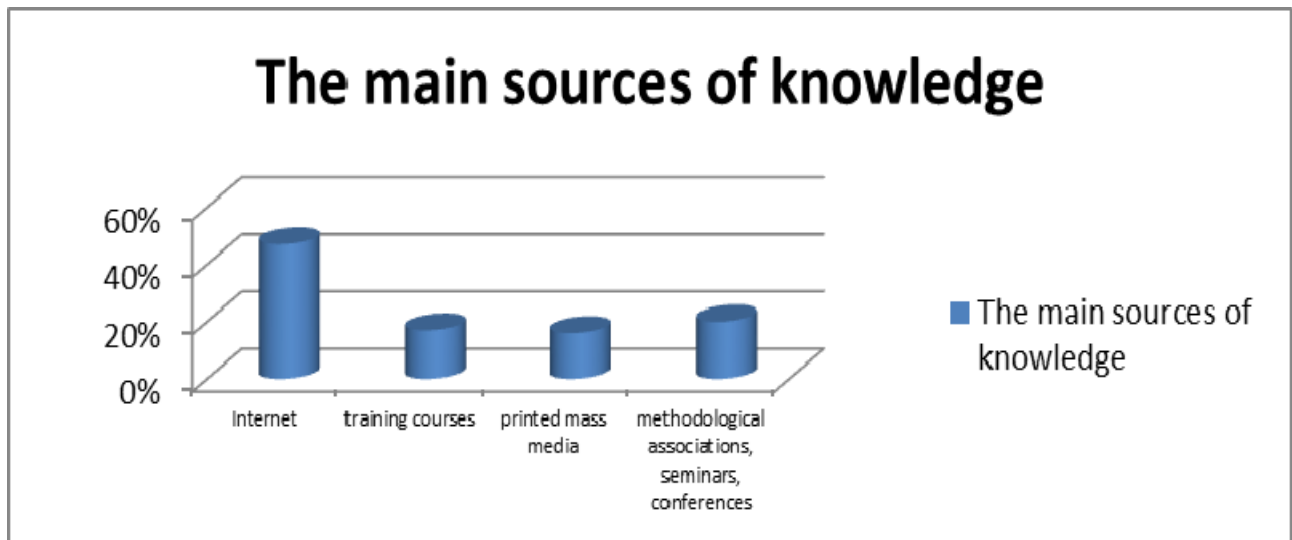


Fig. 5. Sources from which teachers receive additional information about educational innovations (%)

Table 4

Results of monitoring the professional readiness of Humanities teachers for innovation by components and levels (%)

	<b>Personal and reflexive</b>	<b>Motavational</b>	<b>Creative</b>
<b>LOW</b>	13	10	15
<b>MEDIUM</b>	34	44	35
<b>SUFFICIENT</b>	28	27	24
<b>HIGH</b>	25	19	26

The monitoring results show that more than 50% of teachers in all components have a high and sufficient level of professional readiness for innovation. This testifies to the significant potential of teachers who are ready to introduce innovations in their pedagogical activities.

However, 38% of teachers have medium and more than 12% a low level of professional readiness for innovation by all components. This leads us to the conclusion that it is necessary to create conditions in higher education institutions that would promote the development of Humanities teachers' skills of self-

development and self-improvement, development of scientific, methodological, research skills, the desire to increase their innovative competence.

**Conclusions.** All of the above makes it possible to conclude that the use of innovative technologies in the educational process has provided a number of advantages, namely:

- provided a high level of interactivity between the students and the material;
- provided the opportunity to develop and improve various learning styles and interactions;
- promoted motivation and encouragement of students.

In addition, the use of innovative technologies makes it possible to improve the students learning abilities and skills, increase students' independency and creativity. These technologies attract students with the novelty and the opportunity to develop themselves. They reveal the joy of learning, the world of intelligence, creativity and future.

Teachers realized that positive learning motivation should ensure not only the content of learning, but also properly organized communicative activities of students through innovative technologies. Thus, the teachers tried to actualize the needs of students in the implementation of active professional dialogue, interaction; to form the motives of communication in a professionally directed electronic environment, to realize the possibilities of this environment for the exchange of professionally directed information among specialists; to form the students desire to deepen their knowledge and skills, information and communication tools, improvement of skills in working with information and communicative technologies, development of a critical attitude to the results of their activities, etc.

So, it should be noted that modern information technologies and innovative teaching methods give university instructors tremendous opportunities for education, professional growth; they provide access to unlimited information, and give the chance to conduct dialogue with the whole world. Taking part in scientific and methodological seminars, teachers have the opportunity to improve their abilities and pedagogical skills with the help of innovative technologies, to find an individual style of work with students.

Besides, the monitoring revealed certain shortcomings in the system of professional training of teachers to carry out innovative pedagogical activities. However, the data obtained during the monitoring show a general trend of increasing interest of teachers to the problem of implementing innovations in the practice of higher educational institutions, as most educators understand such implementation as a modern objective necessity. At the same time, negative results were recorded. In the course of the survey it was revealed that a certain number of pedagogical staff is insufficiently acquainted with the conceptual apparatus of the researched problem and the method of its implementation in educational activities.

The need to introduce innovative technologies, methods, approaches in the educational process of higher education is explained by the fact that the current stage of development of Ukrainian education requires teachers who not only have the appropriate level of education and qualifications, but also have the ability and skills

to solve pedagogical problems through innovative approaches. Undoubtedly, the success of innovative reforms depends on the teacher creative potential, readiness for self-improvement and self-development, his or her professional competence.

Training of competitive teachers with a high level of professional readiness for innovation requires the transformation of the traditional system into an innovative one for providing qualitative educational services through the use of new technologies

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## 6.2. INNOVATION TECHNOLOGIES IN DISTANT EDUCATION OF FOREIGN STUDENTS

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**Summary.** The paper is devoted to using of innovation technologies in distant teaching of foreign students. Distance teaching has become a challenge to modern higher education and has forced teachers to adapt quickly to new teaching conditions. Work with foreign students is no exception. In the research, the author analyses the concept of distance learning, identifies its advantages and disadvantages, describes innovative teaching technologies, among which interactive technologies, that

contribute to a successful educational process and give a positive result in the education of foreign students. Such technologies include pedagogical supervision technology, facilitation, coaching, web-quest technology and the use of mental maps, case-study method, dialogue and discussion methods, project technologies and media education. The author also emphasizes the importance of quality feedback between teachers and students and the role of reflection in this process, as well as pays attention to the personality of the teacher as a teacher-innovator.

**Keywords:** distant learning, foreign student, innovation technologies, feedback, reflection, teacher-innovator.

Distance education dates back to the middle of the twentieth century, when for the first time attempts were made to create an educational process without the presence of a student and a teacher in the same area. The goals of distance education were realized in the need to reduce the cost of education programs, to get over illiteracy in developing countries, to enable the education of people with special needs. And recently in the period of pandemic it acquired a new important meaning for modern educational institutions. Distance education is characterized at first by the territorial distance between the teacher and the student. This distance is overcome by means of telecommunication technologies which help distance education to keep all components inherent in educational process. Distance teaching contains a number of features that are determined by the purpose of the educational process, the distance of participants, the ratio of distance and full-time forms of learning.

In Ukraine for many years there is a developed system of extramural higher education, which enrolls at least a quarter of the total number of students; the adaptation of this form of education to the goal of the Bologna Process is relevant for higher education establishments in Ukraine [20, 27]. But, unlike extramural teaching, distance education allows to provide educational process at any distance from the educational establishment, while studying extramurally the student should repeatedly attend it; distance teaching can almost completely avoid this. The sense of distance teaching is that the interaction of a teacher and a student can take place in the cyberspace: they are at computers and communication takes place via the Internet [13].

Among foreign scholars who have paid attention to the study of distance education, we can mention the following: M. Thompson, D. Keegan, A. Clark, M. Moore, E. Polat, A. Khutorskii, W. J. Hasson. Ukrainian scientists also studied the features of distance education in current educational system: O. Maiboroda (distant learning as priority direction of higher education); I. Nazarko (use of distance means in education to improve educational process in higher educational establishments); A. Ignatiev (the role of distance teaching in the system of continuing education); O. Korbut (features of the introduction of distance education in the modern educational system); L. Havrylova, Y. Katasonova (theoretical aspects of introduction of distant education in Ukraine); N. Goncharova, O. Kirsanova, A. Svetlytskii (scientific and pedagogical experience of introducing distance teaching in the educational process of higher medical educational establishments); I. Adamova, T. Holovachuk, V.

Prybylova (advantages, disadvantages and prospects of distance education in Ukraine); V. Kukharenko, V. Bondarenko (features of distance learning); K. Gavrilenko (stages of creating a distance course); O. Hrytsuk (personality problems in the relationship "teacher - student" in quarantine).

In modern realities, with the conditions of pandemic, the need for the introduction of quality distance education is extremely important, teachers need to create a strong theoretical and methodological basis, to create new teaching methods and technologies that meet the telecommunications environment. Modern youth lives in a technological environment and must be able to function in it. Yu. M. Burovytska noted that in our society, people who have developed such important skills as obtaining, evaluating and generating information will always have priority. Parents and society expect that educational establishments will prepare students for the world in which they are going to live [2, 23]. Traditional teaching methods can not provide the necessary results due to the psychological characteristics of the modern youth, due to significant changes in the particular society and in the world in general. The use of innovative teaching technologies in the educational process will be able to help significantly. Innovative pedagogical technologies as a process, according to I. Dychkivska, are purposeful, systematic and consistent introduction of original, innovative methods, techniques of pedagogical actions and means into practice, covering the whole educational process [4].

Innovations can be directed to progress in one or several aspects of education system: theory and practice, curriculum, teaching and learning, policy, technology, institutions and administration, institutional culture, and teacher education. They can be applied in any aspect of education that can make a positive impact on learning and learners [23, 8]. Currently innovations in educational process are studied by I. Dyckkivska, I. Pidlasyi, V. Slastianin, I. Martynova, O. Dubaseniuk. Educational innovations affect all related parties: students, parents, teachers, leaders, researchers, stakeholders and the authorities; and requires their active involvement and support in this process. With regard to students and their cognitive process, identification and development of abilities, skills and knowledge, innovation are expected to improve attitudes, behaviour, motivation, self-esteem, self-improvement, independence, and learning productivity [14, 157].

A special attention should be paid to interactive educational technologies as a part of innovations. Interactive educational technologies are aimed precisely at developing all key competences, practical skills and special qualities through the interaction. The use of interactive models involves the operation of method system which is determined mainly not at the presentation of ready-made knowledge and their reproduction, but at the independent mastery of skills by students in the process of active cognitive practice. Interactive learning is a special form of organization of cognitive activity, it has a goal to create comfortable learning conditions where each student feels his success and intellectual ability [19]. The peculiarity of interactive learning is in fact that the educational process is carried out under constant and active interaction of all its members. Ideas of active and interactive teaching methods can be found in papers of Ukrainian and foreign scholars, among them T. Buzan, A. Park, D.



Armstrong, I. Abramova, G. Kobernyk, O. Komar, V. Lozova, O. Pometun, G. Selevko, M. Skrypnyk, V. Bepalko, V. Evdokimova, L. Novikova, O. Sichkaruk, N. Suvorov, A. Khutorsky, I. Yakimanska, N. Volkova.

The difference between interactive teaching and traditional one lies in the fact that it provides interaction not only between teacher and students. Students also interact actively with each other in search and creation of new knowledge or in the process of formation and development of new skills and abilities [29]. According to L. Moiseienko, there are particular rules for organizing interactive learning which help to avoid mistakes and create an effective educational process: all students should be involved in the work; active participation of students should be encouraged; students should be developed independently and master rules for working in small groups; the classroom should be prepared for work in large and small groups; readiness, desire, interest of all participants of educational process are the clues to success [17].

Features of interactive activities are manifested in the peculiarities of the interaction of participants, content and structure of process, which provides the following forms:

physical – to change activities, to move freely in the classroom, to change places, to speak, to write, to listen;

social – to interact actively with participants, to ask and answer questions, to exchange ideas;

cognitive – to find solutions independently, to add and correct, to speak out (present, defend) as a part of gaining professional experience [31].

S. Sysoeva notes that interactive learning gives the experience of establishing contacts, value-content relationships with the world, people and oneself; interactive activity in the educational process provides growth of knowledge, skills and abilities, methods of communication; it is also an important condition for the formation and improvement of professional competence through the involvement of participants in the educational process in individual and collective activities to gain experience, awareness and acceptance of values [26]. Interactive learning is a special form of organization of cognitive activity, it aims to create a comfortable learning environment where each student feels their success and intellectual abilities [19].

Vocational education of foreign students aims at professional and personal development, the student acquires knowledge, skills and abilities in a particular specialty, but becoming a specialist is not possible without acquiring other competences that allow to participate effectively in various activities of social and working life [21]. There are eight key competences identified in the Recommendation of the European Parliament and of the Council of 18 December 2006 for lifelong learning: communication in the mother tongue, communication in a foreign language, mathematical competence and basic competences in science and technology, digital competences, learning skills, civic and social competences, initiative and entrepreneurship skills, cultural awareness and self-expression. In order to master successfully these competences, proper conditions for educational process and general stay in the country must be created for foreign students. Interactive

technologies are tools that are able to create such conditions.

After the Ukrainian authorities signed the Bologna Declaration in 2005, the number of foreign students from all over the world began to increase significantly in Ukraine. According to the Ukrainian State Centre for International Education under the Ministry of Education and Science of Ukraine, more than 76,000 foreign students from 154 countries are currently studying in the country (Figure 1) [11]. The number changes through year to year but is increasing constantly; we can see in the graph that changes (insignificant decrease) are due to political situation in 2014 and because of pandemic in 2020.



Figure 1. The increasing number of foreign students in Ukraine [11].

International students are very important for the educational system of Ukraine first of all because of the increase of academic prestige and financial advantages for universities and the state as a whole. Then, they enrich the culture of the higher educational establishments with their cultural and ethnic experience, which helps Ukrainian students develop their intercultural perception and skills of working with an international society. Also, international students represent economic value through expenses for accommodation and study materials.

In order to master successfully vocational education, the most comfortable learning conditions must be created for foreign students. The success of foreign students is determined by the readiness for those techniques and methods of teaching that are adopted in a particular institution of higher education.

For this purpose innovative teaching methods can be used, which are focused on dynamic changes in the surrounding educational and learning activities, which are based on the development of various forms of thinking, creativity, high social and adaptive capabilities of the individual, which is correlated with the purpose of modern higher education in Ukraine and widely uses those information and communication technologies that enable the implementation of an effective distance teaching process in modern realities. So, we can conclude, that successful combination of innovative interactive teaching methods in the educational process can be the key to successful distance teaching of foreign students.

There is currently no single definition of the term "distance teaching" in modern science. According to V. Prybylova, distance teaching is the organization of the educational process, the basis of which is the independent work of a student [20]. A. Ihnatieva defines distance teaching as a set of information technologies that

provide the student with the main amount of information, provide an opportunity to work independently with the assimilation of educational material, assessment of knowledge and skills in the learning process [5, 52]. O. Korbut describes distance teaching as a set of technologies that give students the main amount of educational material, it is an interactive interaction between student and teacher in the learning process, which gives students the opportunity to work independently [13]. L. Shtykhno notes that distance teaching is a form of educational process that uses computer and telecommunication technologies, they provide interactive interaction between teacher and student at different stages of learning and independent work with materials in the information network [24, 491]. Thus, we see that all researchers agree that the main feature of distance education is the opportunity for the student to carry out the learning process via the Internet, where he will have access to educational materials, communication with the teacher and the opportunity to examine his achievements.

Analysing the scientific achievements of Ukrainian and foreign scientists [5; 13; 20; 24; 28], we can conclude that distance educational process has a number of advantages and disadvantages.

The advantages of distance learning are that:

- students have the opportunity to get an education at a convenient time, at a convenient speed, being in any place that individualizes the learning process;
- students have access to educational resources without time restrictions, can consult with the teacher through telecommunications (e-mail, feedback system, social networks);
- students have the opportunity to choose a place of study regardless of current place of residence (possibility to study abroad);
- opportunity to conduct the work with each student individually;
- automation of routine processes, when technology can take over the most boring part of a teacher's job;
- low price and therefore more affordable education.

Also, distance education has certain disadvantages:

- lack of opportunities for discussions and interaction between students;
- lack of feedback;
- difficulties in involving all students in interaction during group classes online;
- lack of practical skills;
- dependence on telecommunications, inability to work with electronic resources;
- low level of student motivation;
- lack of constant control by the teacher;
- absence of a border between working and free time;
- lack of qualified specialists to develop programs and courses for distance learning.

The main principle of distance education is to establish interactive communication between teachers and students without their direct meeting, as well as independent acquisition of a certain array of knowledge using the selected

information technology. The main task of successful implementation of distance learning is to create new methods and technologies that correspond to the telecommunications environment. In this environment, the important fact is that students are not just passive consumers of information, but in the learning process they create their own understanding of the subject content of learning [28].

As already mentioned, the two most important disadvantages of distance teaching are the difficulties of involving all students in group online classes and quality feedback from students, so all the methodological and practical work of teachers was aimed at overcoming these difficulties.

In order to involve all foreign students to cooperation as much as possible, first of all it is necessary to create a favourable educational environment. The educational environment is a system of conditions that affect the formation of a personality, as well as a set of opportunities for self-development of students contained in the social and spatial-objective environment. If the teacher has to work with a new group of students online, or if classes have already been held in class, he can record an introductory video, audio or text about himself, show or describe personal workspace, talk about his hobbies; he can ask students to do the same; it helps to understand them and can give ideas for learning activities based on their interests. Along with synchronous classes virtual support should be added in the form of a forum, an electronic library, the transfer of lecture and teaching material to electronic media.

The attracting and supporting students for synchronous classes begins with the connection; not all students have the opportunity to access the Internet at the same time and freely. In this case, offline classes, which can be asynchronous, allow to follow a flexible schedule. This allows students to learn at their own speed; but such training requires certain skills, personal discipline and a clear structure to follow. Students should be encouraged to create their own schedules, learn to plan their own learning activities [6]. Pedagogical innovative interactive technologies can help to solve all the difficulties which teachers face during distant educational process (Figure 2).

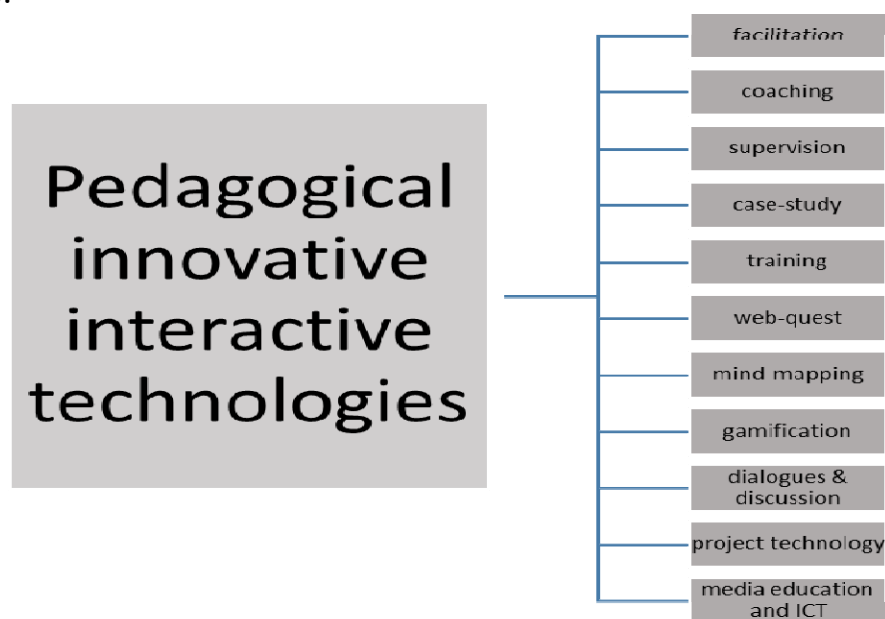


Figure 2. Pedagogical innovative interactive technologies

Let us study in detail each of above mentioned technologies, identify their features and peculiarities, as well as consider how they can be used in distance education of foreign students.

The use of pedagogical supervision technologies is effective in encouraging and supporting foreign students.

**Pedagogical supervision** is a support, individual guidance, aimed at identifying and solving problems related to difficulties in the educational process. The issue of the general content of supervision and its importance in the practical training of specialists violated in the works of researchers D. Jacobs, D. Meyer, A. Brown, A. Bourne. Yu. Zaporozhtseva describes the pedagogical support as an integral part of the organization of the educational environment: it is a system of professional comprehensive assistance needed by participants in the educational process (students, teachers, administration of educational institutions) in creating conditions for the full harmonious development of the individual, taking into account modern approaches to development, training and education [32].

The teacher-supervisor not only supports the learning process of foreign students, he helps to overcome various crises and conflicts, suggests how to activate and situationally use different personal resources [29]. Supervision helps to create conditions for independent analysis of problems that arise in students, and the ability to solve problems without assistance. According to N. Volkova, the main tasks of supervisory practice can be in following: development of training design; providing psychological (semantic and emotional) support in the organization and conduct of work; implementation of an analytical position during the course of training in the form of feedback (constructive criticism and wishes to improve working methods), resulting in the building of new creative approaches and innovative forms of work [29].

The student's learning environment plays an important role in successful distance learning. In the classroom, teachers control many aspects of it: ensuring safety, an inclusive environment conducive to learning and teaching. When working online, the teacher must also remember to support the student in his or her own learning space. And although the teacher during the distance work has no impact on the physical environment of the student, telecommunications resources, software, convenient schedule and well-chosen material can significantly affect the quality of interaction during learning. To do this, the teacher should pay attention to facilitation and coaching technologies to guide this process.

For the first time the effect of **facilitation** - the improvement of individual results due to the presence of another person - was discovered in the studies of N. Triplet (1897). The term "facilitation" first was used by A. Allport (1920). A significant contribution to the understanding of the concept of facilitation was made by American psychotherapist and educator K. Rogers, who understood facilitation to promote the process of personal growth, the formation of inner personal freedom [29]. K. Rogers investigated the qualities of facilitating learning as authenticity, trust, congruence, which enable the teacher to enter into a relationship with the student as a person with a person. The organization of distant classes using the method of

facilitation is advisable in cases when acute topics are raised that require specific solutions; when the situation needs to be considered comprehensively, from different angles; when it is required to organize an effective group discussion, where each participant can speak, share ideas, experiences and assumptions.

Facilitation technology is the organization of a collective solution to a problem in a group under the guidance of a facilitator. It is both a process and a set of skills that allow you to effectively organize a discussion of a particular problem in the short term and perform planned actions with maximum involvement of participants. The purpose of this technology is to organize the effective work of foreign students on the basis of humanism, personal self-development, constructive interaction [29]. The teacher with the help of facilitation technology creates a basis for providing pedagogical support to foreign students during their distance learning, increases the cognitive activity of students, optimizes the learning process. The role of the teacher-facilitator requires certain skills for productive communication in intercultural group. N. Volkova emphasizes on skills and abilities of a teacher, such as:

- the ability to listen carefully, observe and remember both the course of events and the style of behaviour of each student, which is important in intercultural group;
- the competence to establish simple but productive communication between members in the group of foreign students;
- the capability for analysing and correction the actions of students;
- the ability to diagnose and encourage effective (correct ineffective) behaviour;
- the skill to promote the creation of a model of effective behaviour;
- the insurance feedback between participants in the educational process, without using "offensive" and "defensive" forms of communication;
- the capability to find and activate constructive models of behaviour in intragroup interaction;
- the competence to activate similar models in intergroup work;
- the skill to inspire confidence of foreign students in the new environment of the educational establishment;
- the ability to be fair and to choose a neutral position in evaluating the work [29].

The main characteristics of pedagogical facilitation, described in the researches, are collaboration, individuality and equality, involvement of everyone in educational activities, which is significantly important in distance teaching.

During the distance educational process, teacher can use the following instruments of facilitation: World Café, Appreciative Inquiry Summit, Dynamic facilitation, Graphic facilitation, Action Learning, Future Search.

World Café is a method for organizing a real discussion, a focused informal communication. It is a valuable assistant when it is necessary to gather information in a group of people, exchange knowledge, experience, freely share ideas and opinions, hear what others think about issues that are relevant to the organization or community. The technology allows to involve each participant in the conversation, creating a comfortable atmosphere of openness, ease and psychological safety, when

students can communicate on equal terms [1].

Appreciative Inquiry Summit is a future project planning technology based on a positive approach. The authors of the method are D.L. Cooperrider, D. Whitney, J.M. Stavros. The method is used to carry out a wide range of positive changes in the group, including leadership development, future planning, changing relationship between participants, improving educational processes, clarifying vision and values.

Dynamic facilitation developed by J. Rough allows to find solutions to unresolved issues in a limited time. The sense of dynamic facilitation is to find deep problems and build thoughtful solutions, facilitation requires each participant to speak up. Great importance is attached to this. Everyone can calmly voice their opinion; they are not rushed or limited. One of the characteristic features of this approach is the ease of subsequent follow-up of decisions made that have matured in the course of such work. Implementing them rarely becomes an issue due to the high level of energy and involvement that accompanies the discoveries that the group has come to jointly.

Graphic facilitation allows the discussion to be visually displayed, enabling the participants to see how their discussion takes shape in front of their eyes. It helps to make ideas clear and measurable, which allows individual participants to think better with the new perspective that opens up, and allows the group as a whole to communicate and exchange ideas better. One of the ways to conduct graphic facilitation is SWOT analysis, method which was developed in 1963 by Harvard professor Kenneth Andrews, is used to analyse the development of the group, project, product, personality qualities in order to formulate the main directions of development through the systematization of available information about strengths and weaknesses, as well as potential opportunities and threats.

Action Learning is the analysis of complex situations in the group in the format of analysis of one's own experience of solving a real problem compared to the experience of others through interactive exchange of ideas and formulation of questions. This format helps both the person presenting the problem and other participants to find the most complete solution and share techniques and approaches to solving the problem [29].

Future Search is a facilitation method that is based on a systems approach and uses individual self-organizing elements of a larger system. The authors of the method are M. Weisboard and S. Jenoff.

One more effective innovative and interactive method of teaching is **pedagogical coaching**. Translated from English "coaching" means inspiration, mentoring, and the word "coach" means a private educator, instructor. Since the 80s of the XX century, coaching is officially recognized in business.

Coaching aims to reveal the inner potential of the student, to develop the personality through the delegation of responsibilities, to achieve a high level of awareness. Coaching is a decision-oriented and result-oriented collaborative process. During coaching the performance of the set tasks is improved and the experience is enriched, the potential of the student is revealed. Coaching does not teach, but only helps to be taught. Coaching technologies stimulate self-education, reveal the

potential of foreign students, because the teacher does not give them ready-made solutions and answers, does not indicate what to do, but helps to find answers, make their own decisions, which is extremely important for successful distance learning.

According to R. Hurevych, to achieve the goals of coaching, teachers should be guided by certain principles and use a number of methods. The principles of coaching include:

- the principle of awareness and responsibility;
- the principle of unity and interaction;
- the principle of flexibility;
- partnership principle;
- the principle of hierarchical development [10].

Coaching solves the problem of lack of motivation, which is the significant problem during distance teaching. The main feature and difference of coaching is that it is aimed to help people to learn themselves, not to lead them in this process. It is important that the teacher-coach can professionally talk about the mechanisms, paradoxes and the impact of motivation on the result. This stimulates development and contributes to the achievement of students' potential. However, it should be emphasized that the coach should set up and motivate students not only to achieve the goal and achieve results, but also to gain experience during the learning process [10, 45].

When working with foreign students by means of distant education, coaching helps to create a conversation aimed at self-realization of a person, which is more difficult in distance; the content of this conversation is determined by the student, and the course is determined by the coach; as well as the creation of an environment in the course of an educational conversation that facilitates the advancement of a person towards goals of studying; coaching is the process of creating conditions for the fullest possible disclosure of the client's personal qualities.

The creation of a coaching environment in the higher educational establishment allows teachers to work with in the format of a practice-oriented approach, appealing to their own experience, creating new, more effective models of pedagogical interaction through the use of creative potential of students.

The choice of educational material and approaches to its presentation can affect the quality of the educational process in a distance form. The successful combination of synchronous and asynchronous learning makes the process more flexible, accessible to students in other time zones, allows them to choose their own time of work, reduces the burden on students and teachers, opens opportunities for creative teaching and learning [6]. The development of independence and self-support of the student gives him the opportunity to build time and space for learning activities. The teacher should choose approaches on which to build independent work or expand creative research and project tasks. When working in the Internet, both synchronous and asynchronous, the starting point is a clear understanding of what the learning outcomes are. This understanding will help the teacher identify different ways for students to achieve these results and what can be done to support them in the process.

**Case-study or a technology of situation analysis** was developed in the United



States of America at the School of Business at Harvard University, where in 1910, in addition to traditional classes (lectures and practical work), additional discussion methods were introduced into the educational process to analyse the real management situation.

The problem of implementing the case-study method in the practice of higher professional education is currently very relevant, due to two trends:

- the first arises from the general direction of the development of education, its orientation not so much to obtaining specific knowledge, but to the formation of professional competence, skills and abilities of mental activity, the development of personality abilities, among which special attention is paid to the ability to learn, change the paradigm of thinking, the ability to process huge arrays of information;

- the second follows from the development of requirements for the quality of a specialist who, in addition to meeting the requirements of the first trend, must also have the ability to behave optimally in various situations, be systematic and effective in a crisis.

Case-studies are specially developed on the basis of factual material for the purpose of subsequent analysis in training sessions. In the course of analysing situations, students learn to act in a "team", analyse and make decisions.

The technology of case-study is worth to be used in educational process for teaching foreign students, it involves a detailed, in-depth study of a real or simulated situation. The application of such a method becomes the basis for the development of analytical thinking of students, the ability to work with information (analysis, synthesis, ranking, structuring); this is how communicative competence and the ability to choose ways of effective interaction are formed; stereotypes of thinking are destroyed. In the process of active case-study, students are presented with certain facts as situations to find a rational solution, first individually, then in a group discussion of solutions, i.e. in the process of intensive mutual interaction [29].

The case-study method promotes the acquisition of knowledge and professional skills and abilities based on activities in conditions close to real practice. Students are offered a real life situation, the description of which reflects a practical problem, actualizes a certain set of knowledge that must be mastered to solve it. The result of the educational process is not only knowledge but also skills of professional activity. This method involves a comprehensive active study of the material both under the guidance of a teacher and in a group in order to obtain as much information on the topic being studied, to analyse and make the best decision about the practical situation [29].

Case-study allows to activate theoretical knowledge and practical experience of using educational material, develop the ability to express thoughts in foreign language in multicultural groups, to understand the interlocutor, to show and improve analytical skills, to be ready to work in a team; it contributes to understanding the ambiguity of solving problems in real life.

**Training** is a pre-planned process, the purpose of which is to change the attitude, knowledge or behaviour of participants through a learning experience, and aimed at developing the skills to perform a specific activity or several types of

activities. Training technology in education was studied in different periods by N. Nychkalo, A. Aleksiuk, O. Padalka, S. Sysoieva, T. Poiasok.

The objectives of each specific training directly depend on its goals and reflect exactly what changes should occur in the consciousness of the emotional-motivational sphere of the participants within the training. A distinctive feature of trainings is the active interaction of the participants with each other and with the trainer. This approach is called interactive, which implies the use of active teaching methods, in which the involvement of the participants is high, as well as the training is primarily focused on the participants, and not on the trainer, since the training that becomes the main way of solving the problems of the participants. The trainer's activities are aimed at developing exactly those skills that are necessary for every personality.

Training technologies in distant education of foreign students are an active form of studying as a result of which theoretical knowledge and practical skills are acquired in a complex. The necessary abilities are formed, methods of appropriate behaviour and actions are mastered, methods of problem solving are identified and developed [29]. Training, as the interactive method, in the process of pedagogical interaction teacher - student, student - student contributes to the formation of the student as a subject of educational process, includes him in developing education through his own learning activity. Training should be structured in a such way when the student gets the opportunity to get a certain experience; reveal reflection on the gained experience; get feedback from other participants which allows the student to form a plan for further development. Training during distant education, when foreign students are gathered in international groups, allows to regulate relations in this group based on the acquisition of certain social experience by participants as a result.

In order to interest and motivate students in the process of distance education, the teacher should offer maximum support, challenge and choice in the learning process. For distance learning via the Internet, we turn to the technology of web-quest, gamification and mind-mapping.

A **web-quest** is a task with elements of a role-playing game, for the implementation of which the Internet is used. B. Dodge and T. March, who developed web-quest technologies, point out that this is a research-oriented studying activity aimed at finding information via the Internet and video conferencing [3; 16].

The term "web quest" comes from two English words that are combined to mean "Internet search". A web quest can be viewed as a pedagogical technology based on the method of developing students' research skills. For students, a web quest appears as a problematic task with elements of a role-playing game, for the implementation of which information resources of the Internet are used. Web-quest technology assumes that the student comes in the first place in the learning process. He chooses information himself, guided by his own views and ideas. The teacher acts only as an organizer of research activities, without imposing his thoughts and knowledge on them. Web quests are best for mini-group work, but there are also web quests designed for individual learners which is convenient for studying students during distance education. The web quest can be about one subject or be cross-

subject and due to it, they develop different skills of foreign students, not only in the area of one discipline, but interdisciplinary ones too.

Thus, this technology provides the development of such skills: search for the necessary information using various sources of the Internet; ability to highlight important information; analysis and synthesis of the received information; creative approach to the use of information; ability to draw conclusions, present their work and argue their point of view.

There is a shortage of professionals in various fields of activity who are able to solve problems on their own and in a team, using the Internet.

Therefore, training students with Web-quests in integration with other pedagogical technologies will promote an active process of obtaining knowledge, the ability to find the necessary information, use a variety of information sources, memorize, search for solutions, solve certain tasks and problems, organize themselves to work; as well as Web-quests help to improve the quality of higher education in whole [10; 95].

The idea of **mind-mapping** belongs to Tony Busen and appeared in the early 70s of the twentieth century [29]. Busen developed a technology for working with information, which he called "mind maps". In distance educational process, the technology of constructing mind maps can be used to study the material, to form motivation to study the subject, to determine students' understanding of the material, the process and tactics of its assimilation. A mind-mapping is an effective way to learn something new, discuss a current topic with participants in the educational process, find solution of the task. The associations built on the central object generate the following associations, etc., the memorization of one object is associated with other objects. Mind maps have distinctive properties: clarity; attractiveness; memorability; creativity; group work of students; advantage over lecture material.

This technology of mind-mapping allows the formation of the following general competences:

communicative - mastery of technologies of oral and written communication, including programming, the ability to use the Internet;

informational - possession of information technology, a critical attitude to the information received;

cognitive - readiness to constantly improve their educational level, the need to realize their personal potential, the desire to constantly enrich their professional competence.

The use of technology to build mind maps is possible in the process of teaching foreign students in the distance education; these technologies allow to structure knowledge about the content of each subject; to intensify student interaction; develop communication skills and reflection. The number of Internet resources can be used to create virtual mind maps: Free Mind, Free Mind Map, Mindjet Mind Manager, The Personal Brain.

**Gamification** is learning technology which uses the role structure of the lesson, the purpose of which is to provide a comprehensive and depth analysis of a problem. According to N. Volkova, games let to comprehend information more by

70% compared to the lecture (a student can reproduce 20% of the material after the lecture, and 90% after a role game). Thus, during the game, the level of memorization or reproduction is much higher than in the mandatory work or study activities [29]. Educational games can be introduced in distance learning process in form of different tasks in interaction of students, in form of projects, group tasks.

The pedagogical sense of the educational game is in following:

- to activate students' thinking;
- to increase the independence of the future specialist;
- to bring the spirit of creativity to learning process;
- to bring education closer to professional activity;
- to prepare the student for professional practical activity [10].

There different types of games which can be used in educational process, among them N. Volkova distinguishes business games, role games, interactive games, social-psychological games; they all with some changes can be implemented in distance education.

Game learning technologies are a given situation based on social experience. Having placed a person in certain circumstances, it turns out to develop new qualities that are new for him, and to control his behaviour. An important aspect of the educational game is intellectual competition. However, the competitiveness here is fundamentally different from games like a quiz. In this kind of game, not only memory and speed of reaction are in demand, but flexibility of thinking, logical, creative, communication skills. This is dictated by the nature of the tasks that involve productive and creative activities, research, design. In this case, there is a high probability of success for any team, regardless of the academic performance of the participants. An educational game, bringing the learning environment closer to life, develops in a person those qualities that are in demand in real social practice: the ability to work in a team, to cooperate, to coordinate their personal interests with collective ones. The introduction of business games into education is an important factor in improving the quality of education and preparing high school students for an independent life in the information society.

In distant teaching gamification also helps to maintain the motivation of students, to enrich educational environment with interactive communication and makes it possible to develop in intercultural groups social skills.

There are also some other methods and technologies, which aimed to help teacher to conduct productive educational process with means of Internet, among them dialogue and discussion technologies, project technologies and media education.

**Dialogue and discussion technologies** combine a lot of methods and types of work in the classroom which are aimed to develop communicative skills, critical thinking, involving a purposeful and ordered exchange of views, aimed at reconciling opposing points of view and coming to a common ground.

The introduction of dialogue and discussion technologies transforms the educational process into collective, group collaborative learning, where the student and the teacher are equal subjects of educational process. Dialogic communication is characterized by equality of the parties, subjective position of participants, mutual

activity in which everyone influences the others, and at the same time is influenced by them, is ready to accept the point of view of the other party, seeks complicity, empathy. This type of work includes dialogue, conversation, debate, discussion, brainstorming. At different classes such technologies make it possible to realize individual personal position, to respect someone else's opinion, to master skill of argument, to ask proper questions. Students, discussing routine and professional topics, develop not only language skills and abilities, but also learn to understand the representatives of other cultures and religions, develop tolerance, ethics, empathy, learn to conduct constructive dialogue and the ability to avoid conflicts.

There are many types of discussion, among them round table, expert group meeting, forum, brainstorming, symposium, debate, cross discussion, debate-dialogue, all of them can be used in distant educational process and aimed to develop communicative and social skills of foreign students, as well as knowledge of language and subject.

Thus, the use of these technologies provides productive constructive dialogue, discussion, based on the principles of subject-subject relations in all vectors of interaction, the establishment of parity, collegiality in project activities. Significant results of the implementation of these technologies should be in removal of "rigidity" in the manifestations of communicative behaviour during the implementation and discussion of professionally oriented situations; increase of options of application of various verbal and nonverbal means in their optimum combination; consistency of communicative actions with the situational context of communication; the ability to convey through external means of expression mood, shades of relationships, purposefully use verbal and nonverbal means to create the necessary emotionally positive relationships and restrain the manifestations of negative emotions [29].

Under the influence of the modern tendency towards the technologization of pedagogical science, project technologies developed from the project method (J. Dewey), and in the pedagogical literature were designated in the term "project method". Many pedagogical scholars were interested in project method: S. Shatskii, O. Makarenko, Ye. Polat, I. Yermakov, S. Honcharenko, A. Tsymbalaru, O. Piekhota.

**Project technologies** have a wide scope of application in education in a wide variety of fields of knowledge, in teaching almost any subject, increasing educational motivation, developing cognitive interest, creativity, etc. All researchers and teachers involved in the development of project technologies and using them in practice agree that these technology has broad pedagogical capabilities, contributes to a deeper assimilation of program material, planning of their own educational activities, the formation of abilities and skills in the practical use of the subject under study, developing the actual design skills and abilities, which are necessary qualities of a person in modern conditions. Thus, project technologies can be widely used in distant educational process with foreign students, because the technology includes a set of research, exploration, problem-solving methods, creative in nature and aimed:

- to teach independent achievement of the set purpose;
- to learn to anticipate mini-problems that need to be solved;

- to form the ability to work with information, to find sources from which it can be taken;

- to form the ability to conduct research, transmit and present acquired knowledge and experience;

- to form skills of joint work and business communication in group [10].

R. Hurevych describes project technologies with using of ICT which allow to conduct distant educational process. They help teachers to develop each student as a creative person capable of practical work; to involve each student in an active cognitive process; to increase motivation to learn, to work together in a group, cooperation, identification of communication skills, which are important for foreign students at the stage of adaptation to new educational environment; to work competently with information, providing free access to it in educational institutions, scientific, cultural, information centres around the world.

The project technology in teaching is multifaceted, including various types of activities, combined into an integral system: individual, research, organizational and pedagogical, professional-subject, professional, integrative and allowing to increase the effectiveness of the pedagogical process. Participating in project activities during distant education, foreign students demonstrate:

- knowledge and mastery of basic research methods (data collection and processing, scientific explanation of the results, vision and development of new problems);

- ability to make hypotheses;

- mastery of computer writing for the purpose of entering and editing information (text, graphics), the ability to work with audio-visual and multimedia equipment (if necessary);

- mastery of communication skills;

- ability to integrate previously acquired knowledge from different disciplines to solve cognitive tasks [10].

The use of project technologies makes it possible to form an objective system of ideas about the level of knowledge, capabilities and skills that they possess. In the process of implementing the project technology, students master the ability to set the goal of their learning independently. They also learn to select adequate means to achieve the goal, to choose the sequence of their actions.

Project method with its problems allows to realize the whole set of educational goals. Thus, after completing the training, future professionals will be able to organize and manage fully different projects, help and guide the work on those projects [10]. Also, among the important features of project activities there are significant opportunities for organizing collective work on solving practical life problems posed by students on their own. This is what determines the relevance of the application of project technology in conditions when it is necessary to form students' social and communicative competencies.

**Media education** is a direction in pedagogy, which involves the study of the laws of mass communication of the press, television, radio, film, video and others. Elements of the information environment are used as means of media education in the

educational process: textbook, mass media (print, radio, television), video, computer training programs, games, multimedia, Internet information networks [10].

Media education and the use of information and communication technologies at different levels in the educational process was considered by scientists both Ukrainian and foreign: V. Yu. Bykov, Ya. V. Bulakhova, O.A. Mishchenko, E. Wenger, K. Swan, O. Ron, M.V. Moiseeva, A.V. Khutorsky and others. In particular, M.Yu. Kademiia, I.Yu. Shakhina, R.S. Hurevych, V. Morozov wrote about the sense and content of ICT use. The advantages of using information and communication technologies in the process of language learning were highlighted by Yu.M. Burovytska. Prospects for the introduction of these technologies were described by G.O. Kozlakova, T.V. Kovaliuk. The works of B. Gershunsky, K. Dowling, M. Zhaldak, G. Kedrovych, N. Robert, O. Spivakovsky, N. Talyzina are devoted to the peculiarities of the use of ICT in the educational process.

According to M.Yu. Kademiia, a special place among innovative learning technologies is occupied by those pedagogical technologies that are integrated with information and communication technologies (ICT) and use the capabilities of global Internet services, which will improve the quality of training, mastery of modern ICT, ability to self-development, mobility, competitiveness in the labour market [12, 274].

In the educational process, the use of ICT is primarily embodied in the use of computers in the classroom, which provides significant opportunities for a foreign language teacher; as well as computers are the main resource in distant educational process. The computer is connected to the Internet allows a student to use electronic resources, both built-in software and online, e-textbooks, online learning programs, audio portals, video sites, online exercises for training and tests to determine the level of proficiency, electronic environments, social communication networks, communication programs. Online learning programs are programs that are freely available on the Internet and are logically constructed complexes that contain lessons on learning different topics of a subject. They are designed for students of different levels, have a distribution of educational material by age. Such programs allow not only to master the skills at the appropriate level, but are the basis for preparing students to take exams and tests.

The use of electronic textbooks, unlike online programs, does not depend on the connection to the Internet and also has a number of advantages. The use of electronic textbooks diversifies the presentation of material, audio-visual reinforcement of textbook materials develops all types of memory, which improves the assimilation of material.

The use of multimedia allows students to work independently on educational materials and decide independently how to study the materials, in what sequence and how to use the interactive capabilities of multimedia programs, how to implement joint work with other members of the study group. Thus, students become active participants in the educational process. Multimedia applications (programs, products) can be used as the main learning environments during the distance teaching of foreign students, applicable in numerous academic contexts, in which learners master the educational material and participate in a dialogue with other learners and teachers

about the essence of their studying.

In addition to above mentioned ICT, we should pay attention to such technologies as cloud technologies, virtual reality, m-learning as digital means which help a teacher to provide high-quality distant educational process.

Using file-sharing networks and cloud technologies is a great alternative for low-budget educational institutions to work efficiently with their information systems without spending more on computers and network devices. Educational institutions use available file-sharing and cloud programs that allow students to perform business and academic tasks more efficiently, it helps to intensify teamwork, feedback from the teacher, improves the presentation and perception of material, facilitates accountability.

Virtual reality originated in the field of entertainment, but over time it has also gained practical use in education. The main goal of virtual reality in education is to make the learning process more efficient and exciting. Virtual reality simulations provide a deep understanding of the material by the student with its subsequent application in real life. Evidence that virtual reality can benefit the education system is the human brain. The fact is that the brain tends to remember 10% of what it reads, 20% of what it hears, and 90% of what it does or imitates. Virtual reality makes the classic learning process an exciting experience. With its help, the audience is not limited to four walls, scientific subjects do not lack tools, it improves the perception and assimilation of material, which in turn affects the quality of education.

Mobile learning, also known as m-learning, is a new way to access learning content using mobile devices. Mobile learning supports constant access to the learning process via phone, laptop or tablet. With their help, you can access anywhere and anytime. Mobile learning is the most common way to use mobile learning. Students may be offered texts, videos or audio, assignments after viewing the material. To enhance interaction, teachers can ask questions while learning using online discussion forums or ask students to complete a post-study survey. The advantages of mobile learning are increased motivation, access to various content, the possibility of remote interaction between student and teacher. Teachers ask questions and students answer them with their mobile devices or communicate with each other in a group discussion forum. You can get immediate feedback. This is especially effective when teaching large groups.

**Lectures** occupy an essential place in the educational process at all levels of education, although their number has significantly decreased in the curriculum. In this regard, the teacher is required to have a creative attitude towards them. The lecture, meets modern didactic and educational goals, should form interest and desire for learning, bring the educational process closer to the conditions of professional activity, promote the exchange of knowledge, experience and feelings. For this purpose, certain techniques and methods of activating classical lectures are used, especially if there are lectures through the Internet.

There are many types of lectures, but the most appropriate for distant educational process are the following:

- problem lecture, which simulates the contradictions of real life; the main goal



of such a lecture is to involve students in active independent activity;

- lecture-consultation is carried out on the preliminarily formulated questions of students;

- lecture as press conference is similar in type to the previous one, since the content is drawn up at the request of the students, but conducted by several teachers;

- lecture-dialogue, in which the content is presented through a series of questions to which students must answer during the lecture; this type includes lectures using feedback techniques.

Effective implementation of feedback between teacher and student is one of the main requirements and the basis for the success of the learning process. When we consider feedback, we mean not only grading or determining test results, but also informal, gradual, timely feedback from student to teacher, which is extremely important for productive learning. Like many aspects of online teaching, feedback can take a little longer to plan and organize, as the special nature of informal feedback is limited in an asynchronous online environment. It is important to collect feedback and assessments from students, it significantly affects the understanding of what works and what does not, how students develop and what prevents them from doing productive work. The teacher already receives feedback from students during the lesson, which is embodied in the facial expression, raised hand, comments made. When working on the Internet, it is difficult to accurately read people's reactions, but this process needs to be adapted. Students can be the creators of their learning process; to do this, you can take into account their feedback and build changes on them. Examples of quality teacher-student feedback include surveys, messaging, live sessions, personal support in the form of consultations, satisfaction ratings, data collection from platforms, and more [6].

The quality of feedback is influenced by students' skills for retrospective reflection, when they are able to analyse their own activities, identify their strengths and weaknesses in it and communicate it to the teacher; as well as the phenomenon of pedagogical reflection.

The scientific substantiation of reflection was carried out by classical philosophers of the XVII-XIX centuries: G. Hegel, R. Descartes, I. Kant, J. Locke, B. Spinoza, I. Fichte, F. Schelling. Currently, reflection as a concept is considered as human activity aimed at understanding his own actions, inner states, feelings, experiences, analysis of these states and the formulation of appropriate conclusions [30].

Retrospective reflection is meant as the preconditions, motives and reasons for what happened, past behaviour, the result of activities, mistakes that were made. Pedagogical reflection consists in the consequences of the interaction between the teacher and the student, it is the feedback from the student after mastering the information provided by the teacher. Such reflection gives the ability to analyse the results of their activities, to adjust their own actions; it has the potential for development, which under certain conditions allows it to raise its activities to a new level. The following forms and methods can be used for the organization of reflection of activity at foreign students: group and individual work; discussion during classes;

written works (surveys, questionnaires, psychological testing, etc.).

An important role in the structure of students' reflective activity will be played by certain conditions, namely the performance of educational tasks that contain reflection and are aimed at self-analysis of educational activities; use of innovative methods in teaching: portfolio, project method, case method; fixation by students of the educational advancement (self-development) after each educational lecture, practical employment, and also after studying of subject discipline as a whole and their analysis; conducting special classes (or elements of classes) on the development of reflection skills. Retrospective personal reflection is activated in the process of self-reporting in accordance with the decision; It is extremely important to draw students' attention to the actualization of not only mistakes but also situations of their own success, it will warn them against lowering self-esteem [22, 298].

Regarding the assessment of learning results and control of knowledge, not all tools inherent in classroom work can be used during distance learning. During practical classes (video conferences) the teacher has the opportunity to assess the activity of each participant, to ask questions to each student. And to check the results of practical mastering by a student of a certain educational material during distance learning, test control is the most successful. Tests are convenient for self-control; they are effective for individual lessons [27].

Test control of knowledge has several advantageous differences from the usual system of control of knowledge:

- the test can be used not only as a control tool, but also as a learning tool;
- testing takes much less time;
- objectivity, the independence of the verification and assessment of knowledge from the teacher's opinion;
- an individual and differentiated approach to knowledge control;
- testing psychologically burdens the learner less than an oral examination or a written exam;
- coverage of large groups of students at the same time;
- the equal conditions for all students who are tested;
- faster data processing;
- due to the use of computer technology, the test results can be shown in the form of convenient reports, both for a particular student and for the results of the whole group;
- testing can be conducted in any discipline, remotely and without the participation of a teacher in a particular discipline (which is convenient in distance education).

Testing, like any evaluating and control tool, has its disadvantages:

- the test has a certain accuracy and a certain margin of error;
- falsification of test results are also possible;
- a student who passes the same test several times can gain only superficial knowledge of the subject and in the future find and receive answers by simply enumerating possible options;
- psychological attitude, fear of not being able to answer in the allotted time;

- the ability to guess, does not allow you to check the depth of knowledge (for tests consisting of tasks to choose the correct answer from among the proposed ones).

It is also should be mentioned that in the process of distance education there is a problem of the possibility of cheating during the tests. To prevent its occurrence, the test should be composed so that it does not have a direct association with the text presented in a particular educational source, questions and answer options should not textually match the names of paragraphs or sections of the educational information source [9, 33]. Also, at servers of special programs for test controlling there is a network knowledge control system. This control of knowledge reduces the possibility of unauthorized access to test tasks and test results, simplifies the procedure of updating test tasks and control over the testing process, allows you to use remote databases of test tasks [10].

But, in our opinion, the best way to check the quality of acquired knowledge, the ability to apply them, understanding of educational material, individual or group project tasks, cases, which require theoretical knowledge, practical skills; such tasks make it impossible to write off, develop creativity, critical thinking, motivate to learn.

It is important to note that the quality of distance education depends significantly on the teacher who works with students. Such a teacher must have some training, have not only modern pedagogical but also informational learning technologies, be psychologically ready to work in a new learning environment [8, 95].

A teacher-innovator, such as facilitator, tutor, coach, moderator, helps students to realize goals of learning process, organize a support during their distant learning, helps to find their own answers to the questions, helps students in self-awareness, supports the desire for self-development, self-realization, self-improvement, to promote personal growth, disclosure of cognitive abilities during distant education. He should not play the same role all the time. A teacher-innovator is an educator who combines all the features and acts in a certain way depending on the situation. He can stimulate and guide, accompany and participate in student's life, inspire and motivate, support and activate skills and abilities (Figure 3); the educator-innovator can act as a participant, creator and developer, researcher, user and promoter of new pedagogical technologies, theories, concepts.

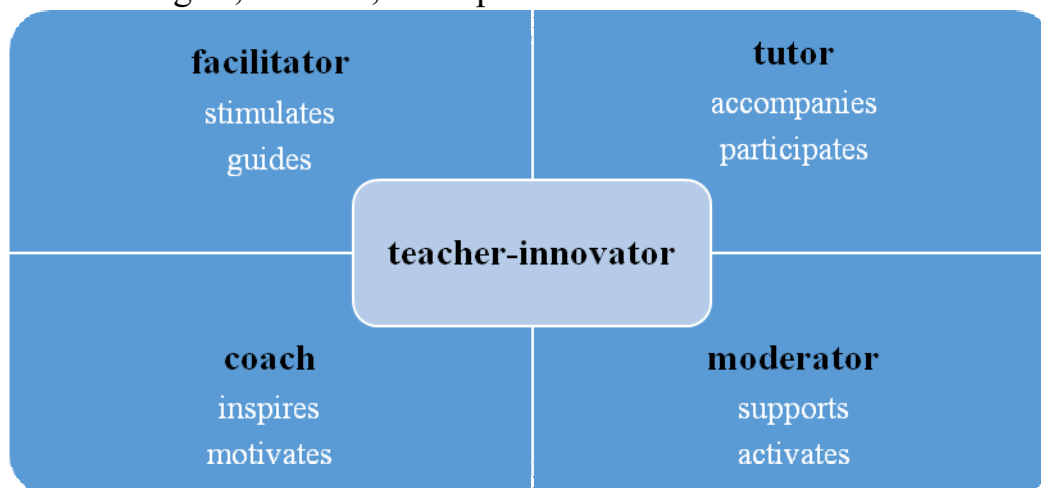


Figure 3. The personality of teacher-innovator

**Facilitator** is a teacher who stimulates and guides the process of independent search for information and activities of students, supports the desire for self-realization. The task of the teacher-facilitator is to organize communication of all participants in the discussion from the neutral side, to establish an effective exchange of views so that the clash of views can be turned into a constructive direction, differences successfully overcome and an acceptable solution made. The teacher-facilitator helps to increase the productivity of education and development of the subjects of the professional pedagogical process due to the special style of communication and personality of the teacher [7].

**Tutor** is a specialist who accompanies a student in the process of individual training, he participates in the development of individual educational programs for his wards; provides socio-pedagogical support to students in the process of learning in higher education, in particular with the help of information and communication technologies; teacher who ensures the unity of educational, social and professional environments that form a single educational space [26, 88]. There are the following functions of the tutor: organizational; information; communicative; developmental.

**Coach** is a teacher who inspires, motivates and maintains responsibility for achieving the desired results at the required level until their implementation, the coach helps to achieve the goal, move more effectively, develop the strengths of the individual [25]. The teacher-coach does not teach the student, but helps him to reveal his capabilities. Coach helps, using the knowledge and experience of the student himself, to solve his specific problems, tasks and goals, this technology helps, using his own potential, to increase the productivity and efficiency of learning, to increase self-esteem in the form of individual lessons and as part of organizational counselling.

**Moderator** is a mentor, a leader who supports and organizes the active work of the group. Teacher-moderator uses techniques, methods and forms of organization of cognitive activity which are aimed at activating the analytical and reflective activities of students, the development of research and design skills, the development of communication skills and teamwork skills [18, 263].

Today, distance education is one of the most important areas in the development of pedagogy, as it meets the demands of the information society, the environment that has emerged from Internet users in the process of globalization. In addition to the requirements for technology and material support of educational institutions, online technologies make new demands on the motivation and self-regulation of students. At this stage of development of distance learning technologies, it is important to organize the learning process so that the new forms give the same quality result as the traditional ones. Such innovative interactive forms and method as pedagogical supervision technology, facilitation, coaching, web-quest technology, the use of mental maps, case-study method, dialogue and discussion methods, project technologies and media education are the tools for teacher to create a new educational environment that meets the requirements of new generation's demands, to provide efficient learning for foreign students in conditions of distant education, to maintain motivation, to support in obtaining skills and abilities, to ensure feedback, to estimate

knowledge in proper way; the personality of the teacher as an educator-innovator plays a significant role in this process.

There is also an issue related to methods for measuring the effectiveness of distance learning, which instruments are in the process of developing. But, despite the disadvantages, a significant advantage of distance education is that it allows the student to learn not only in difficult times, such as the pandemic of 2020-2021, but continuously, throughout life wherever they are, providing high results.

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### **6.3. ORGANIZATION AND CONDUCT OF GAME TRAINING IN ORDER TO STRENGTHENING STUDENTS' MOTIVATION AT THE UNIVERSITY**

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**Annotation.** The article reveals the issues of relevance of active teaching methods, including gaming methods. The advantages and disadvantages of these teaching methods are considered. The characteristic of the pedagogical game is given. The methodological content of a modern foreign language lesson should be communicative - the focus of the educational process on its convergence with the real process of communication based on speech knowledge, skills and abilities. The need to ensure the communicative orientation of education of students of non-language universities requires the development and improvement of all types of speech and foreign language activities. The expediency of using interactive methods on practical English classes in agricultural universities allowing to make classes more diverse, enabling students to show their speech independence, to realize communicative skills and speech skills is considered. The expediency of using interactive methods aimed at enhancing the creative thinking of students is proved. University teachers have to use different methods and means of instruction that activate the educational and cognitive activity of students in the process of learning a foreign language; in stimulating interest in the subject and material that is taught. The use of methods and tools will depend on many factors. It is not effective to constantly use traditional methods and training systems, it is desirable to experiment, to test new techniques and tools, taking into account the requirements of today.

**Keywords:** active teaching methods, interactive teaching methods, game methods, pedagogical game, language competence, innovation, personality, structure, modernization, risk, activities, innovative pedagogical activities.



Scientific progress of the XXI century contributes to changes in both processes (teaching and learning) of foreign languages of future specialists in the field of agricultural production. There is also a link with comprehensive research that ensures the creation, application and distribution of knowledge in the socio-economic space, where innovation becomes a systemic phenomenon. There was a need to change the priorities of professional training in the direction of development of heuristic and creative thinking, the formation of the individual as a subject of self-development, mastering the tools to manage their own educational activities. Future professionals must be active participants in foreign language professional communication, master the rules of language behavior during the communicative process. Thus, scientists, methodologists and teachers of higher education face the problem of ensuring the highest possible level of language competence. The use of reference charts and tables is well used in the study of local lore (Topic: "Geography. My country, my city", "English-speaking countries"). Country information is widely used in pairs to study English. It is an excellent material for the implementation of interdisciplinary links. When constructing a message of local lore, you can effectively combine the assimilation of cognitive information with the successful activation of lexical and grammatical skills. But the main thing - the text, and the scheme (table) - an assistant in the study of the problem. There are three levels of problematization of the content of foreign language teaching: linguistic (problems related to phonetics, vocabulary, grammar); communicative (problems related to the types of speech activity); spiritual-cognitive (it is at this level you can create a full-fledged problem situation, which aims to develop educational, cognitive, professional and creative activities of students by means of a foreign language). Recently, such forms of learning have been used as active group classes aimed at gaining students' experience in applying concepts in model standard and non-standard situations; training (special system of exercises) on the development of students' creative working well-being, emotional memory, attention, imagination, imagination.

The purpose of the article is to reveal the issue of coverage of interactive teaching methods (especially games) of English students using communicative tables and diagrams and different types of games on classes.

Each of the teachers of a foreign language in a non-linguistic university faced such a learning task as increasing the efficiency of educational work in each unit of time, i.e., the optimal intensification of students' work. This problem is most acute when considering three objective factors: 1) high requirements of the state standard for a foreign language exam in a non-linguistic university; 2) limited clock grid; 3) average and below average language proficiency of the majority of applicants.

The main task of modern education is not just to give the student fundamental knowledge, but to provide him with all the necessary conditions for further social adaptation, to develop a tendency to self-education.

The modern educational system is characterized by:

- short training deadlines
- a large amount of information received
- serious requirements for the level of knowledge, skills and abilities of the

student.

One of the main tasks for the current teacher is to make the learning process interesting for students, dynamic and modern. And in this, interactive technologies came to the aid of teachers.

Information and communication technologies are gradually penetrating all spheres of education. This is facilitated by the global informatization of society, the spread of the latest computer technology and modern software in schools and universities, the creation of national and international programs aimed at informatization of education.

The main problem remains the passivity and inertia of students in the learning process, because not all even the most modern pedagogical technologies, methods and funds can fully ensure the high activity of educational and cognitive activities of subjects of study. Modern higher education faces the problem of forming an active personality position, forming motivation and interest in students.

Therefore, the processes of intensification of educational and cognitive activities in higher educational institutions, taking into account the specialization and features of educational programs are one of the priority areas for improving the educational process.

The main thing attention should be paid to the development of skills to perform all types of speech activities: listening - understanding (listening), speaking, reading, writing.

Thus, the main goal of teaching a foreign language is seen in the development of students' ability to use a foreign language as a tool in the dialogue of cultures of the modern world, the formation of their skills and abilities of foreign language communication to achieve high level of language competence in their industry.

An important role today belongs to interactive teaching methods and technologies, which develop students' critical thinking, enrich the imagination, improve the culture of communication and social behavior, as well as form the ability to make collective and individual decisions, which creates the conditions for effective improvement of the educational process in higher education institutions.

The interactive method implies that the student is not only an observer or listener, but also an active participant in the creative learning process which is important not only to answer questions, but also to ask questions and encourage students to independently search for answers. The basic principle of the interactive method is the principle of collective interaction, according to which students achieve communicative goals through socially interactive activities: discussions, debates, dialogues, role-playing games, imitations, improvisations, debate. Such activities correspond to a person-centered approach to learning, and it also provides a positive influence of the team on the personality of each student, forms a favorable relationship in the study group. Joint socially interactive work gives each student the opportunity to show their creative and intellectual abilities, encourages initiative.

Interactive learning changes the usual forms of teaching material to dialogical, which are based on interaction and mutual understanding. We can note the following methodological features of the organization of interactive learning: the use of

problem situations and formulations, the corresponding organization of educational space conducive to dialogue, motivational support joint activities, compliance with the rules of educational cooperation, the use of communicative methods and techniques, optimization of the process evaluation system and results of joint activities, development of skills of self-analysis and self-control of individual and group activities. The main feature of interactive learning – use of own experience in solving problem issues. Currently, the method of teaching a foreign language to Methodists and teachers is to strengthen the interactive side of mastering a foreign language, to move from learning a foreign language to the teaching of foreign speech and to the teaching of communication.

The main components of the above task include: increasing the purposefulness of training, strengthening its motivation, the information capacity of the content of education, the use of modern teaching methods, the activation of the pace of learning activities, the development of reflective labor skills.

The organization of various didactic, lexical-grammatical, speech, business and situational games is very active in the classes. When developing them, it is necessary to clearly formulate game tasks, to determine the exact time of the game. Preparing for such games and participating in them, students show not only cognitive independence, but also cognitive activity.

The organization of the multilateral communication process is facilitated by the use of appropriate interactive teaching methods aimed at developing creative activity-oriented abilities of students, which stimulates activity and "ingenuity". These include the following: pair and group classes foreign language, brainstorming, project method, exchange of ideas, pair interviews, role and business games, discussions, debates, round tables, methods such as "choose a position", "scale of opinions", etc. The technology of using such forms of learning is step-by-step, logically constructed use of forms of active learning from simple to more complex and includes the mastery of game techniques by introducing them into the practice of classes; expanding the use of game situations in the classes, elements of discussions, debates, conducting final classes on the topic in the form of games.

The game teaching method is widely represented in modern Western and domestic methodological (didactic) literature. This method can be used at any level of education with a certain adaptation of this or that exercise for different levels of students' language training.

Games in higher education are one of the most important elements of the volitional training of future specialists. By participating in them, students learn to solve professional problems in complex, close to real conditions, undergo a kind of psychological hardening. Currently, a significant arsenal of various gaming teaching methods has been accumulated in higher education. Let us consider the didactic possibilities of some of them, which have found the widest use in the pedagogical practice of Russian universities. The game as a teaching method is distinguished not only by the activity of the participants, but also by the greater, in comparison with traditional methods, the intellectual and mental stress of students. Teachers, when developing, planning and conducting game classes, must clearly imagine and take

into account their didactic features. For a teacher, didactic games are a rather time-consuming type of training. Preparation for their implementation requires both a deep understanding of the learning process in new conditions, and a large time investment of the teacher. Experience shows that 1 hour of work in a group of 15 people on a specific situation of medium complexity requires 12-15 hours of preparatory work. The question arises: aren't game teaching methods too time-consuming in terms of complexity, time and effort spent on their development? Isn't it easier to read traditional courses of lectures and conduct practical classes? However, if we weigh all the benefits of games, it turns out that the benefits of using them far outweigh the development costs. Of course, the expediency of developing a game must be brought into line with the scope of the discipline, the goals and objectives to be solved during its study, and the contribution to the professional training of students.

In order to increase the effectiveness of students' learning activities from the very beginning of the class, we propose to use the method of "brainstorming", which includes elements of the problem. In this case, it may be a problem question of the teacher: "What type of environmental / economics / self etc. problems can affect..?" These types of tasks stimulate students to active thinking, independent search for theoretical knowledge and active expression with using professional terminological units.

The approach to the educational process, which is based on the interaction of subjects of study, in our case - interactive principles of teaching non-language students specialties, based on the use of their own experience, interaction with the immediate sphere of future professional activity. With such training, the role of the student increases, as he no longer participates not only in obtaining professional knowledge in the field, but also in the search, development and transformation of acquired theoretical knowledge into practical skills and abilities. As practice shows, training in pairs or groups is much more effective. This applies not only to the academic success of students, but also to their intellectual development, because such are the qualities of teamwork employee as the ability to help each other, joint search for the truth or problem solving are always necessary prerequisites for successful professional activities in the future.

The use of role-playing games in which students communicate in pairs or groups not only allows to make the lesson more diverse, but also gives students the opportunity to show speech independence, to realize communicative skills and speech skills. "Role-playing games" contribute not only to the development of the ability to express their thoughts, but also to respect the opinions and suggestions of others. Atmosphere of kindness, encouragements during discussions determine the mental and emotional emancipation of students, reduce the fear of possible mistakes, promote developing the ability to argue.

Interactive methods are appropriate and justified use in the training of future professionals, as they are promising technologies in foreign language teaching and define dialogue as the leading form of educational and cognitive interactive interaction. This involves the integrated application of interactive methods, tools and forms of foreign language teaching selected on the principles of communicativeness

and cooperation in order to achieve optimal result.

When evaluating games as a teaching method, a number of circumstances should be kept in mind.

Firstly, games, compared with other teaching methods, have one indisputable advantage: the ability to integrate the acquired knowledge in relation to the chosen profession.

Secondly, once developed a good game can be used for many years as an effective teaching tool for several generations of students. Of course, the content of the game must be updated in accordance with the change in the content of the science itself.

Thirdly, game teaching methods, with the help of which students master professional activities and acquire knowledge without the direct intervention or assistance of a teacher (the latter remains, as it were, behind the scenes), is a powerful means of awakening interest in the content of this activity. In the context of an increase in the proportion of independent work of students, games are an effective form of its implementation.

Fourth, it is difficult to overestimate the expediency of acquiring responsible decision-making skills in an environment of conditional practice. Learning in the game can prevent real mistakes that future professionals make when they switch to independent professional activities.

Fifth, in the game, the learning process can be successfully combined with research tasks, thus clearly demonstrating to students the research method in action. Therefore, when developing a game plan, a number of questions (problems) are envisaged to be investigated, as well as the allocation of a separate group of game participants, whose responsibility is to keep time and fix private results.

Sixth, invaluable for a future specialist is the acquisition of experience in a complex formulation of the problem, the coordination of individual priorities in the group choice of a solution and its implementation.

Seventh, the game contributes to the development of group thinking, the ability to act as part of a team, seeking to develop an informed common decision.

Eighth, games allow you to try out new forms and rules, management structures, standards and methods, testing them, as on a test bench, which is the game itself. Thus, games have wide didactic possibilities. With their help, it is possible to form an extremely wide range of skills, abilities and professionally significant qualities of a person, depending on how the preparation and conduct of the game is organized, what motives are laid in its basis by developers and teachers. The high efficiency of gaming teaching methods is due to significant advantages over traditional ones. Some of them I would like to highlight in particular:

- ◆ visualization of the consequences of the decisions made: in the game, you can neglect the details, exclude from the information array the so-called "noise" generated by the properties of real processes that are not relevant to the case;

- ◆ variable time scale: the game allows you to "live faster" or "slower", speed up and slow down the course of events. In the conditions of conditional practice that the game creates, one can "live" several years in a few hours;

◆ repetition of experience with changing attitudes (accumulation of skills in the course of learning): in the game you can play the same situation several times, approaching its solution each time in a new way;

◆ the ability to change the scale of coverage, which can significantly reduce the time needed to search for fundamental solutions in different conditions.

Interactive learning also leads to the development of professional and personal qualities of students, including: growth of activity, critical thinking, development the ability to argue their views, strengthen the responsibility for decision-making, the formation of the ability to cooperate and work in teams, the development of the ability to further self-education, that is, all the qualities that should have a modern specialist.

Before choosing teaching methods, a foreign language teacher must be guided by those specific tasks of the educational process, the results of which meet the requirements of the formation of specific practical skills of students. Practical tasks that are built on the basis of interactive technologies provide an opportunity to effectively study the educational material. Thus, conditions are created for learning a foreign language at a qualitatively new and high level and for use these skills formed in practice. Students learn to communicate in a foreign language, participate in discussions, use grammatical constructions, activate their active (passive) vocabulary in the process of communicative activity.

Let's briefly consider the basics of planning, as well as the procedure for organizing and conducting training sessions using gaming teaching methods.

The decision to include the game in the curriculum is made at the stage of developing a general training schedule for a specialty. Before that, the nodal points of training specialists are identified and established, in which it is advisable to introduce game teaching methods. It is better to place them in the curriculum so that each lesson requires the accumulation of knowledge not in one, but in several related disciplines. At the same time, gaming lessons should become more complicated as you move from junior to senior courses, cover more and more real, most often occurring in practice problems and tasks. In this case, the role of intersubject and interdepartmental relations existing in the university is great. At the final stage of training, it is desirable to conduct complex faculty business games covering a number of disciplines taught by several departments, involving, if possible, students from different specialties. Pedagogical practice shows that it is expedient to plan and conduct 1-2 games and at least 2-3 game classes such as simulation exercises, analysis of specific situations, playing professional roles in a university every semester. When planning the time of the game, in addition to the general requirements for the schedule of classes, you should additionally keep in mind the following points:

◆ it is advisable to plan the game after the main lectures of the course have been read and the students are theoretically prepared to participate in it;

◆ for the game it is recommended to allocate separate days not loaded with other activities in order to focus the attention and strength of the participants on the game itself. If the game takes 2 or 4 hours, then it is advisable to complete the school

day with it, since students after the game cannot immediately leave the role, switch to other disciplines;

- ◆ before the game, time for preparation must be provided, for which it is necessary to provide that the time for independent work the day before was free from any activities other than preparation for the game;

- ◆ if the game spans more than one school day, you need to consider whether these days should be consecutive or better to take a break. During such a break, students can complete individual homework assignments, and the participants who lagged behind at first will be able to catch up with those walking at a normal pace and thus will not hinder the continuation of the game;

- ◆ the game takes a lot of time and attention of students, so it is necessary to coordinate the time of its implementation with the general schedule of work performed during the semester.

When conducting training games, their information support is important. Let's briefly dwell on this. Information support of educational games includes a number of components:

- ◆ description of the situation included in the game lesson;
- ◆ rules of conduct and criteria for evaluating the results of a game lesson, taking into account their complexity and significance;
- ◆ documents for planning and organizing a game session;
- ◆ normative and reference data.

Game situations form the basis of the game lesson program and, as a rule, include its detailed description. The latter can be presented by the beginning of the game in the form of initial data and replenished, refined during the game with the help of introductory tasks. The rules for conducting the game fix the rights and obligations of the teacher and students, the sequence, content and distribution in time of individual stages, stages and steps covered by the lesson, the order of interaction of its participants.

An important component of the information support of the game is documentation, which includes initial and planning documents issued to participants for testing and reflecting their decisions; and finally, the reporting documents, which record the results of the implementation of these decisions. Such results in games are most often identified with the help of expert assessments given by a group of the most prepared students or teachers who conduct these classes.

Reference data, as a rule, are represented by a special set of documents used by the participants of the game lesson. Standards can be permanent, i.e. unchanged for the entire duration of the game or constant only during a specific stage, or take a certain value (taking into account the established probabilities) from the range of possible values. The values of some standards may vary depending on the decisions made by the participants in the lesson. Developed information support allows you to create a game model that forms the basis of a game lesson. The success of games as a teaching method, to a much greater extent than traditional ones, depends on the material and technical support, which includes audiences (classrooms) specially equipped for games, information display tools, controls, simulators, computer

equipment, etc. Of course, the composition of the logistics and accommodation to a decisive extent depend on the form of the gaming session, the number of participants and many other factors.

For the success of gaming lessons, the system of stimulation and evaluation of students' activities is of particular importance. The assessment of the activity of the participants in the game each time consists of an assessment of the analysis of the situation, the developed and adopted decision, as well as its implementation at the time established by the standards. The analysis of each individual situation is a training not so much in the choice of decisions, as is sometimes believed, but in the analysis, which is the threshold for making them. In some cases, analysis is more important than the decision itself, although for many students it is the latter that is most difficult for them. The pedagogical practice of teaching game methods using in universities testifies to the expediency of building an incentive system based on arbitration.

The final score of each participant in the game in points is determined as the sum of individual scores (including penalty points). Approximate evaluation system for various types of students' activities during the game. Restrictions and controlled time given to participants in the game to solve problems mobilize everyone, thereby increasing the effectiveness of learning. It is known from experience that in groups where the game mode was not taken into account, 30-40% more time was required to solve similar problems. Moreover, the level of assimilation of educational material simultaneously decreased by 10% (compared to other groups). The experience of using arbitration shows that in this way it is possible to successfully solve a number of important didactic and educational tasks, among which are:

- ◆ prompt and reasonable assessment of all types of practical activities of individual groups and each participant in the game, as well as the degree of their readiness to perform the relevant functional duties;

- ◆ the direction of the work of the participants in the game in the direction outlined by the game plan;

- ◆ preparation of materials for evaluating the game as a whole and determining the effectiveness of the organization of the educational process in this discipline.[6] If we generalize the experience of conducting games, then the problems that inevitably arise in this case become clear. The first, and one of the most difficult, that the game manager faces is to provide the participants with a relatively even and uninterrupted workload throughout the game. Difficulties are formed due to the fact that most decisions are made sequentially, in the logical order of the game management. And hence the inevitable loss of time waiting for decisions or work results.

Another problem is an objective assessment of the individual work of each participant in the game. After all, the result of the game in some cases is not related to the activities of a particular student. This problem can only be solved by the active participation of teachers-leaders in the game, who in this case can get a more complete picture of the abilities of students and use these findings to evaluate results. An essential role in increasing the efficiency of the game process is played by the final stage of the game, in particular, the discussion of its results. The experience of a



number of universities shows that if there was no discussion after the game, then the skills acquired during the game are quickly lost. Therefore, after the game, a discussion of the results, revealing the reasons for obtaining certain results, is as important as the game itself. It is most expedient to discuss the results by the conference method, so that everyone has the opportunity to express their opinion on the methodological necessity and the results of such a lesson. The practical lesson ends with the presentation of the leader-teacher, who not only sums up the overall result, but also evaluates the work of each participant in the game.

The success of the educational process largely depends on the teaching methods used.

The essence of teaching methods is considered as a holistic system of methods, in a complex providing pedagogically expedient organization of educational and cognitive activity of students. Teaching methods can be divided into three general groups:

1. Passive methods.
2. Interactive methods.
3. Active methods [1].

Active teaching methods are a form of interaction between students and the teacher, in which students and the teacher interact with each other during the lesson, and students here are not passive listeners, but active participants. The activity of the student is productive, creative, search character.

At the term "active learning methods", in accordance with the definition of A.M. Smolkin, we will understand the system of activation of educational and cognitive activity of students, contributing to their active mental and practical activity and implying the activity of both the teacher and students [2].

Scientists associate the activation of learning, among other things, with the development of students' gaming activities. The role of the game in the ontogeny of the personality, in the development basic mental functions, in self-government self-regulation of the individual and, finally, in the processes of socialization - in the assimilation and use of social experience by a person (L.S. Vygotsky, E.E. Kravtsov, N.A. Korotkov) [3].

Active learning methods are divided into non-imitation and simulation. Non-imitation ones include: a problematic lecture, a problem-active practical or laboratory lesson, an actively conducted seminar, independent course and diploma design, industrial practice-internship at the workplace, the use of teaching and controlling machines and programs, active-group consultations, olympiads, student scientific conferences, sociological testing and questioning, etc. They are focused on the problem, the intensification of the logical and cognitive activity of students, but at the same time there is no imitation of real circumstances in a conditional situation.

Imitation technologies are based on simulation or simulation-game modeling, i.e. reproduction in training conditions with one or another measure of adequacy processes occurring in a real system [4,5].

Imitation classes-games, in turn, are divided into non-game and game. Game simulation methods include business (management) games, the role-playing method,

game production design, individual game lessons on machine models, individual game training on special simulators, automated workplaces. The essential difference between game methods is that they are based on game elements, connections, relationships.

We will consider the advantages and disadvantages of gaming learning technologies in the table:

Advantages	Disadvantages
1. Activates the activity of students. 2. Develops communication skills of students. 3. Strengthens social bonds in the group. 4. Develops practical skills	1. Requires considerable preparation. 2. It is inappropriate to use when learning new material. 3. Requires the teacher to complete control over the situation in the group.

The game form of classes is created in the classroom with the help of game techniques and situations that act as a means of encouraging and stimulating students to study in the following main areas: a didactic goal is set for students in the form of a game task; educational activity is subject to the rules of the game; educational material is used as its means, an element of competition is introduced into educational activity [7].

Game activity develops mental and volitional activity, trains attention, memory, develops logic and speech. Thus, the game method is able to carry out not only educational, but also educational and developmental tasks. Game exercises captivate even the most inactive and poorly prepared students, which has a positive effect on their academic performance, as well as the effectiveness of educational work in a single lesson.

All of us as students faced the problem of independent memorization and activation of lexical units. Our students also face this problem, especially when working with an adapted or non-adapted text in their specialty. Often a huge number of new lexical units becomes an unbearable burden for them. And all of us, consciously or unconsciously, use the associative method when memorizing vocabulary. For each student, depending on his psychological type of perception of reality (auditory, visual, kinesthetic or discrete), the associative connection of new lexical material with his personal experience and intellectual baggage is built differently. Therefore, in game exercises for automating vocabulary, the teacher can show the student different ways of memorizing lexical units using:

- the principle of visibility;
- method of “approximation”;
- handouts, cards;
- element of "fairy tale", "story" as a game situation on the practical lesson.

For each game exercise with the vocabulary aspect

you should remember the methodological formula 7 plus or minus 2 lexical units (it all depends on the level of students' preparation). Before the actual conduct of a particular game exercise, a presentation of new lexical units takes place, pronunciation is practiced, and understanding is controlled. The following examples

of game exercises with the "vocabulary" aspect can serve as "starting points" for creating your own game exercises in accordance with specific goals and objectives.

1. Game exercise using the principle of visibility.

Students are presented with a picture that is thematically related with activated material (world map, car, portrait person, etc.). The task of students is to arrange all the new lexical units in the picture so that in the future they can logically explain why they chose one or a different section of the picture for a particular word. Depending on the level of preparation, students can explain their choice both in their native and in a foreign language. You can also modify this exercise by dividing all students into groups, and in each group there should be students with different levels of training. In this case, the team performs its explanation collectively, first in writing, and then presents it to other groups in a foreign language.

2. Game exercise using the approximation method.

– Students are invited to find Ukrainian analogues of foreign words. (For example, Eng. “accurate at 5 o’clock” – Ukr. рівно о п’ятій годині, Eng. “cover” - Ukr. покривати, накривати, Eng. “cherry” - Ukr. вишня, черешня etc.).

3. Game exercise using cards, handouts.

- Word puzzles (words are divided or into individual letters, or into syllables, or directly according to the principle of puzzles, i.e. arbitrarily). The task of students is to collect words.

- Work with words on cards. All new words are written on cards in different directions (vertically, horizontally, diagonally), in different colors. The task of students is to memorize as many words as possible in a certain time. After this time, the cards are turned over, students must name the words from memory.

4. Game exercise using the element “fairy tales”, “stories”.

Let's make history together. Each student has their own word. According to the "snowball" principle, each student or each the subgroup composes a sentence with its own word, and logically connects it with the previous sentence.

The difference is that the reception is a short-term method that involves working with one specific group. And the method is a long process, consisting of several stages and including many tricks. Thus, the method of training is only an integral part of a particular method [8].

Methods are classified according to various criteria:

- by the nature of the educational activity: reproductive, problematic, research, search, explanatory, illustrative, heuristic, etc. ;
- by the degree of activity of the teacher and students: active and passive;
- by the source of the training material: verbal, visual, practical;
- by the method of organizing educational and cognitive activities: methods for obtaining new knowledge, methods of verification and evaluation.

*Active teaching methods* are based on the interaction scheme «teacher = student». From the name it is clear that these are methods that involve the equal participation of teachers and students in the educational process. That is, children act as equal participants and creators of the lesson.

The idea of active teaching methods in pedagogy is not new. The founders of

the method are considered to be such distinguished teachers as Y. Komensky, I. Pestalozzi, A. Disterweg, G. Hegel, J. Russo, D. Dewey. Although the idea that successful learning is built, first of all, on self-knowledge, is still encountered by ancient philosophers.

The most general classification divides active methods into two large groups: individual and group. More detailed includes such groups: discussion, gaming, training, rating [9].

The most common methods of active learning [10]:

- *Presentations* – the easiest and most affordable method for use in the classroom. This is a slide show prepared by the students themselves on the topic.

- *Case technologies* – have been used in pedagogy since the last century. It is based on the analysis of simulated or real situations and finding a solution. Moreover, there are two approaches to creating cases. The American school offers a search for the only correct solution to the problem. The European school, on the contrary, welcomes the versatility of decisions and their justification.

- *Problematic lecture* – in contrast to the traditional one, the transfer of knowledge during a problem lecture does not take place in a passive form. That is, the teacher does not present ready-made statements, but only raises questions and denotes a problem. The rules are deduced by the students themselves. This method is quite complicated and requires students to have a certain experience of logical reasoning.

- *Didactic games* – unlike business games, didactic games are strictly regulated and do not imply the development of a logical chain to solve the problem. Game methods can be attributed to interactive teaching methods. It all depends on the choice of the game. So, popular travel games, performances, quizzes, KVN are tricks from the arsenal of interactive methods, as they involve the interaction of students with each other.

- *Basket method* – based on a simulation of the situation. For example, a student should act as a guide and conduct a tour of the historical museum. At the same time, his task is to collect and convey information about each exhibit.

- In the *project method*, students are grouped into small groups and develop, for example, a program of sociological research on any issues of interest to them or a scheme for conducting an experiment in the laboratory. This analytical work includes several stages that allow you to improve the skills of logical thinking, maximize the creative potential of students and stimulate them to research. Such project activities, organized in this way, have many advantages.

- *Sparring* is a training fight in boxing in order to comprehensively prepare for competitions. Sparring partner - a rival in various training competitions. Accordingly, sparring partnership as a form of organization in extracurricular independent work is a kind of pair work in which students, playing the role of rivals in the competition, perform tasks according to a predetermined algorithm of the teacher.

- A striking example of the organization of *independent work* is the

technology of group project training, which is implemented not so much during scheduled classes, but also stimulates independent work and interaction of performers.

– *Business games* (including role-playing, simulation, role games) are a very popular method that can be used at any stage of training and for any age group. During the game, students play the role of participants in a situation, trying on different professions. Business play is an activity in which various practical situations are simulated. Game technology involves game simulation, when a model is created that replaces the real object of a situation, when the models are manipulated to replace real experiments with artificially constructed patterns of behavior. The rules of the game can be taken from a real situation or be invented. At business games at participants various positive attitudes are formed:

- Interest in activities and problems that are modeled and played out during the game;
- Assimilation of a large amount of information, which contributes to the creative search for solutions to problems;
- Ability to adequately analyze the real situation;
- Formation of objective self-esteem of students;
- Development of analytical, innovative, economic and psychological thinking.

For a business game to give the desired result, it must be based on theoretical knowledge, ideas about the field of activity that is simulated. Since one of the fundamental principles of the educational process is humanistic, it should be noted that the purpose of education should not be the child's acquisition of a certain amount or set of knowledge, but the holistic development of his personality. Independent thinking and cognitive activity is a means of developing a person's ability to reveal his potential abilities. Hence the conclusion - the teacher must set himself the task of providing such independent and thinking activities in the classroom, and this is facilitated by interactive technologies in which the student independently opens the way to knowledge, and the acquisition of knowledge is the result of his activities.

– *Bar Camp, or anti-conference*. The essence of the method is that everyone becomes not only a participant but also an organizer of the conference. All participants come up with new ideas, presentations, suggestions on a given topic. Next is the search for the most interesting ideas and their general discussion. One of the most productive pedagogical technologies is an interactive game, which creates optimal conditions for self-realization and development of students. Its purpose is to change and improve the models of activity and behavior of the subjects of pedagogical interaction, and their conscious assimilation of these models. Interactive games promote activity and social development, create a magical world where everyone accepts its laws and norms. Students do not hide their emotions, communicate freely with the participants of the game verbally and nonverbally, make decisions, try different roles.

During the game there is an interaction that supports the development of personality and socialization, allows you to determine the development and integration of knowledge and skills that are already available to students. Active

participants in the game learn more intensively, motivate themselves more, but those who focus on the leader - vice versa. Interactive games help children to establish contact with each other faster, the game helps to increase the pace of reaction, gives the opportunity to express their emotions, both negative and positive. The list of topics for interactive games is endless: the study of your body, seasons, colors, mood illustrations, mutual feelings, friends or family, home or classes, gifts. Games can also be held as genre productions, improvisations. The main areas in which to implement game situations during the lesson are the following:

- Didactic goal is set in the form of a game task;
- Learning activities are based on the rules of the game;
- Educational material is used as a means of play;
- The element of competition is included in educational activities, and the didactic task becomes a game;
- Successfully completed didactic task is associated with the results of the game.

In order to properly combine the elements of play and learning, to determine the place and role that are given to game technology in the learning process, the teacher must understand the classification and functions of pedagogical games. There are four main features of such games:

1. direct and indirect rules;
2. rivalry and emotional uplift;
3. active, improvisational, creative nature of activity;
4. free developmental activity, which is undertaken only at the request of the student.

- *Didactic game* is one of the most effective ways to arouse a lively interest in the subject. The inherent desire of children to play should be used, to direct it to the solution of various educational and training tasks. For the game to be interesting and accessible to students, the teacher must think it over and prepare it well, the rules of the game must be clear and concise. How effective the game will be depends on the teacher's interest and emotional attitude to the game, the course of its development and the result. How effective a didactic game will be depends on how systematically it is used, what is the purpose of the game program.

- *Learning how to speak Perfect English*. Students learning English as their Native language or as a second language always ask the question "How do I learn to speak perfect English?" Learning both grammar and pronunciation, is the best way to do this. Both form an excellent foundation for speaking perfect English. While the concept of perfect English is more an abstract one having no proper definition, those who speak English using proper enunciation and grammar are notably distinct and stand out as persons speaking perfect English. It is also despite the implied effects of one's own vernacular.

When learning to speak and write for your perfect English, merely listening to others speak English is insufficient when improving one's English pronunciation. It is only part of the equation. Confidence plays a significant role in learning to speak proper English. Students must always resist the urge to give up in the face of making

mistakes. Perseverance and confidence are essential to perfecting English as this will serve to motivate one to continue despite making errors.

Another useful trick in one's arsenal of English learning tools is to *use a dictionary*. It should not be confused with a thesaurus, which translates an English word or term into one's native language as many words in English do not have a clear and distinct translation into other languages. A dictionary, on the other hand, will undoubtedly define the term and enable students to understand the meaning of a particular word. Once the meaning is understood it is much easier to identify and translate it into one's native language.

Practising pronunciation is crucial to speaking perfect English. Employing phonetics and the phonetic alphabet is an excellent way to develop one's pronunciation as it uses letters and symbols to illustrate word and letter sounds in the English language. An excellent resource for learning proper pronunciation is the internet. Websites such as tv-english club are of immense help for students looking to improve English pronunciation and speak perfect English. English Club TV or ECTV is a website committed to helping students improve all aspects of English, from grammar to pronunciation and even improving listening and conversational skills. The method also uses vocabulary expanding techniques. Day by day, students have to learn more and more English words. With the introduction of new words, a student may think that he may not be able to grasp every word even though he or she learns English for the whole of their life. But qualified teachers use comprehensive exercises to make them understand new words via fun filled activities such as completing puzzles, scrabble, engaging in word searching games, quizzes, and other games.

*Interactive teaching methods* contribute to the independent search for information and the implementation of educational needs through practical activities, and are focused on the dominance of students' cognitive activity in the process of forming professional competencies. Their use involves modeling life situations, solving professional problems according to the analysis of the circumstances and situations. Interactive methods are based on the interaction schemes «teacher = student» and «student = student». That is, now not only the teacher attracts children to the learning process, but the students themselves, interacting with each other, affect the motivation of each student. The teacher only serves as an assistant. Its task is to create conditions for children's initiative. Interactive teaching methods (for example, learning games) contribute to the independent search for information and the realization of educational needs through practical activities, focused on the dominance of cognitive activity of students in the formation of professional competencies. Their use involves modeling life situations, solving professional problems according to the analysis of emerging circumstances and situations. In accordance with the aspects of the systemic, synergetic, personal, activity, competency-based approaches and based on the analysis of existing scientific and pedagogical works on the research problem (E. Zeer, N. Dvulichanskaia, I. Zimniaia, M. Iliazova, E. Kahakina, M. Krupina, O. Kurlyhina, A. Markova, L.

Mitina, Yu.H. Tatura, Yu. Frolov, A. Khutorski, T. Chekalina, V. Shadrikova and others) identified the following components of the professional competence of university students: value, organizational and motivational, knowledgeable, operational-active, individual psychological, social, evaluative-reflective, corrective. Based on the formation of the components of professional competence, all interactive teaching methods are systematized as follows [11; 12; 13]:

- organizational and motivational (discussion, role-playing game, dialogue, etc.);
- cognitive (demonstration of experiments, presentation, interactive game, analysis of specific situations, organizational and mental game, heuristic conversation, «round table», etc.);
- operational-activity («brainstorming», case method, project method, lecture, seminar, practical and laboratory classes of a problematic nature, lecture-visualization, conference, organizational-activity game, business game, modeling of professional situations, etc.);
- socio-psychological (method of cooperation, psychological training, warm-up, collective solution of creative tasks, etc.);
- assessment and reflexive (competition of practical works with their discussion, group discussion, exercises, tests, laboratory workshops, etc.); corrective (work in small groups, etc.).

Thus, the proposed classification of interactive methods contributes to the formation of professional competencies of university students. And the best way for teaching and learning English for future specialists in agriculture is mixing both, active and interactive methods.

The communicative approach combines traditional and interactive methods and techniques of organizing activities in teaching foreign languages. According to SB Suvorova, interactive learning is seen as a way of learning, carried out in the form of joint activities of students. Interactive learning is based on the student's interaction with the learning environment, the learning environment, which serves as an area of learning experience; based on the psychology of human relationships and interactions. This is learning, understood as a joint process of cognition, where knowledge is extracted into joint activities through dialogue, polylogue"[14, p. 34]. She provides a classification of interactive teaching methods based on communicative functions, which divides them into three groups: discussion (dialogue, group discussion, analysis and analysis of life situations); • game (didactic games, business games, role-playing games, organizational activities); • psychological group of interactive methods (sensitive); and • communicative training (empathy).

Just as interactive approaches, we can distinguish interactive lectures, role-playing, simulation, educational games ("Student as a teacher", "Everyone knows everyone", "Interview"). Active mental activity of the student involves tasks "A dozen questions", "Choice", in which the student demonstrates individual perception of the world around.

Interactive teaching methods give students the opportunity to take an active



part in the educational process, form and develop their cognitive activity. As correctly noted in the article by E. Petrashunas "Interactive technologies in the formation of language competencies of students" interactive approach is the basis of the principles of building a business game, as they include integration of content, scientific methods, didactic goals, forming the interactive nature of professional competencies [ 15, p. 52]. The game allows you to go beyond the traditional practical lesson, and not only in a foreign language. This form of organization of the learning process expands the opportunities of both teachers and students, and stimulates students to communicate, to dialogue in a foreign language within the group, allows each student to personally meet and experience the realities of foreign language communication without leaving the school. Role-playing games have a number of advantages in comparison with traditional forms of conducting foreign language classes in a non-language university:

1. Role play achieves a higher level of communication than traditional learning, because role play involves the implementation of specific activities (project discussion, participation in a conference, conversation with colleagues or classmates) [16, p. 156].

2. Role play is a collective activity that involves the active participation of the whole group and each member of the group individually.

3. Completion of various tasks leads to a concrete result, due to which students have a sense of satisfaction with joint actions and a desire to solve new problems. When using role-playing games in the process of learning English in high school, there is a simulation of natural foreign language communication.

The success of a role-playing game depends on clear modeling: both the plan-content and the plan-expression. In direct preparation of the role play, the teacher processes the material provided by the students, determines the type of game, the composition of participants, the goals of each project participant, plans possible ways to achieve them, predicts problematic situations that may arise in solving problems, specifies the place of communication at prepares the necessary props.

Learning a foreign language can be problematic both in form and content. There are three levels of problematization of the content of foreign language teaching: linguistic (problems related to phonetics, vocabulary, grammar); communicative (problems related to the types of speech activity); spiritual-cognitive (it is at this level you can create a full-fledged problem situation, which aims to develop educational, cognitive, professional and creative activities of students by means of a foreign language). Recently, such forms of learning have been used as active group classes aimed at gaining students' experience in applying concepts in model standard and non-standard situations; training (special system of exercises) on the development of students' creative working well-being, emotional memory, attention, imagination, imagination.

Advantages of interactive learning methods:

- learning becomes individual, taking into account the personality, interests and needs of each student;
- there is an opportunity to capaciously and concisely present any amount of

educational information;

- visual perception is improved several times, the process of learning material is greatly simplified;
- students' cognitive activity is activated, they gain theoretical knowledge and practical skills.

More and more teachers and methodologists now use Spoken English Teaching Techniques on classes. Instead of written practices, in this way students can effortlessly keep in mind the usage of words and their different meaning. Teachers play the role of a facilitator with this method and supply and encourage methods where students participate in talking and express ideas in English. Discussion among children, individual and group presentations, singing, dramatizing and many such methods can increase the vocabulary strength of students without forcing them to engage in rote practices.

In the classrooms, teachers ask students only to use English when they are talking and engaging in other classroom activities. It is called English Only Policy. The system allows students to use English the whole day. Students voluntarily engage in English conversation exercises keeping a check on the components of Grammar in their speech. Spoken English Only Policy teaches children to pronounce words correctly, use grammar and the right words in their sentences.

Also, the importance of *listening* properly and understanding what others say is taught in classrooms. Listening to audio and video tapes, speaking with native English people, listening and watching videos recorded on English people, listening to English news broadcasting, responding in English after the hearing, and reviewing past grammar and English papers are some of the methods being used to enhance the students' English listening skills.

Reading and Writing does not take a backseat in the classroom even though much importance to communicative methodology is given. Instant paragraph writing, writing formally as well as informally, resume and letter writing and many other techniques get the full attention of students and make them write in various ways. Students receive writing lessons according to their level and skills. Their interests, hobbies, approach and so on are taken into consideration when assigning writing exercises.

*Visualization* in the methodology of language learning allows to create conditions for sensory perception of information. It increases the effectiveness of learning, helps to meaningfully master the language elements, as well as to do so with great interest. At the moment, the importance of visualization is seen in the fact that it develops students' cognitive activity, awakening their interest in language classes, as well as expanding the amount of material learned. In addition, visualization can reduce fatigue, develop creative imagination, mobilize willpower and facilitate the whole learning process as a whole [17, p.115-124].

Visual teaching methods are teaching methods in which the assimilation of educational material in the learning process depends on the use of visual aids. These methods promote the development of memory, thinking, imagination.

Mental communicative map is a way to present grammatical structures, as well

as their practice. Its advantage is a clear logical structure and attractive design. Mental maps can be used to teach basic grammar structures as well as more complex ones for advanced learners. The following principles are taken into account when compiling logical-communicative reference schemes:

- Principle of accessibility of content - language material should not be too complicated;

- The principle of image accessibility - students get used to certain signals that express a grammatical or lexical phenomenon, and identify these signals with their inherent meaning;

- The principle of arranging information in a logical order.

The use of visualization in learning allows you to learn to perceive more deeply the phenomena, processes and objects of the world around him, creating ideas that correctly reflect the objective reality, at the same time the phenomena are processed and synthesized according to educational requirements. Students perceive the material that has been presented more clearly through visualization. In addition, clarity is able to activate mental activity, arousing their interest in the process of learning in pairs. Visibility is also able to expand the amount of assimilated material, reduce fatigue and develop creative imagination, it activates the willpower and simplifies the whole process of learning English.

Schemes can be used at any stage of the lesson (activation of knowledge or introduction of new material, consolidation or control of acquired knowledge) and they are the best way to develop pronunciation, lexical and grammatical aspects of speech. Information on the topic of the lesson can be divided into several sections: 1) General information about the country; 2) Geographical location; 3) Economics; 4) Population; 5) Political and administrative system.

Such a reference scheme creates a good basis for repetition, both in terms of the order of presentation of the material, and in the use of lexical units and grammatical constructions in the presentation of phrases. Compilation according to the reference scheme orients students to a systematic presentation of the material, instills skills in working with reference materials, focuses on the use of frequency structures. The scheme attracts with its ease of assembly (this can be done by any teacher or student) and ease of application, as it can be introduced to students using a blackboard, computer, interactive whiteboard. The use of this technology helps to increase the creative potential of students, the development of speech, thinking.

Learning methods are a prerequisite for successful learning of any foreign language. English is one of the subjects that students master in the process of active speech activity, such as speaking, listening, reading, or writing letters or translating texts (both to improve general knowledge and professional texts). That is why visualization can encourage not only to study grammar, but also to use it in communication as often as possible, to create an atmosphere of real communication.

Working in small groups is one of the most popular strategies, as it gives all students the opportunity to participate in work, practice skills of cooperation, interpersonal communication (in particular, the ability to actively listen, develop a common opinion, resolve differences).

The method "Modeling of production processes and situations" involves the simulation of real conditions, specific specific operations, modeling of the corresponding workflow, creating an interactive model, etc.

Training (from the English train - to educate, teach, accustom) - is the process of acquiring skills and abilities in any field by performing sequential tasks, actions or games aimed at achieving the development and development of the required skill.

In modern science, there is also the concept of interactive games for learning English by students of technical universities in their independent part of education. The main possibility of using interactive methods in independent work is to organize group work of students. Stimulating close communication between students leads to the formation of skills of social behavior, mastering the technology of teamwork. Working in a group is impossible without the ability to make quick and constructive decisions, take responsibility, communicate with other people and resolve conflict situations.

According to some psychologists, group assignments are possible insofar as there are conditions in which students are forced to help each other succeed and "push" their peers to do so. Positive interdependence creates relationships that are based on mutual stimulation.

When creating a group to perform extracurricular independent work, the teacher must:

- clearly indicate the purpose of the task;
- instruct students about the stages of the task;
- explain to the students what the interaction of the group members should be like in order for the set goal to be achieved;
- Advise students in case of questions on the merits of the assignment or to strengthen the relationship between group members.

At the same time, counseling between students and teachers during the development of the program can be carried out directly in the classroom, and with the use of off-line and on-line technologies.

When using interactive methods, the role of the teacher changes dramatically, ceases to be central, he only regulates the process and deals with its general organization, prepares necessary tasks and formulates questions or topics for discussion in groups, gives advice, monitors time and order of the plan. The use of interactive forms and methods of teaching in the process of learning at the university will allow you to purchase:

- experience of active mastering of the content of future professional activity in interrelation with practice;
- development of personal reflection as a future professional in his profession;
- mastering new experience of professional interaction with practitioners in this field;
- development of communication and interaction skills in a small group;
- formation of value-oriented unity of the group;
- encouraging flexible change of social roles depending on the situation;
- adoption of moral norms and rules of joint activities;

- development of skills of analysis and self-analysis in the process of group reflection;
- development of the ability to resolve conflicts, the ability to compromise;
- non-standard attitude to the organization of the educational process;
- formation of motivational readiness for interpersonal interaction not only in educational, but also in professional situations.

Organizational forms of the educational process are changing, the number of independent work of students is increasing, the number of practical and laboratory classes, which are research in nature, are spreading classes outside the classroom. The emergence of information technology in the educational process entails a significant change in the usual functions of the teacher, who, like his students, now acts in new roles: researcher, organizer, consultant.

The use of interactive technologies in the educational process helps students to achieve a smooth transition from the acquisition of lexical speech skills to their inclusion in independent communicative activities at a higher professional level.

Unlike games in general, a pedagogical game has an essential feature - a clearly defined goal of learning and a pedagogical result corresponding to it, which can be substantiated, explicitly identified and characterized by an educational and cognitive orientation. Thus, the essential difference between game methods is that they are based on game elements, connections, relationships. In pedagogical practice, the technology of classes in the form of games has been developed and applied. The main models of the game, which are most actively used in pedagogical practice: business, organizational - activity, role-playing, imitation. However, this does not mean that teaching should only be done through games. As is known from the methodology of teaching foreign languages, learning can only be effective and efficient when the teacher is able to use all existing methods in the aggregate, depending on the goals and objectives set by it. I would like to note that almost all we know language or speech exercises in their essence and in their "origin" - playful, however, over time, due to their "batteredness", the frequencies of use have lost their game component. Therefore, any exercise familiar to us, presented in a new way, already carries an element of the game. Interactive teaching methods contribute to the formation of motivation to learn a foreign language. Learning foreign languages – interaction, cooperation between teacher and students.

All active and interactive teaching methods are designed to solve the main task– to teach students to learn. That is, the truth should not be presented "on a saucer." It is much more important to develop critical thinking based on situation analysis, independent search for information, building a logical chain and making a balanced and reasoned decision.

The life cycle of modern pedagogical technologies is shorter than the professional activity of the teacher, actualizes the need to study the essence of innovative pedagogical activities and the implementation of ways to improve the preparation of future specialists for its implementation.

In recent decades, studies on pedagogical innovation have been intensified. Interest in the problems of innovation, the allocation of them as important directions

of modern scientific thought is due to the growth of the dynamics of innovative processes in society, which characterize its transitional state of modernization and reform.

In modern studies, such aspects of innovation are analyzed:

- problems of the general theory of innovation;
- aspects of innovative activities in the context of training specialists in high school;
- questions of the introduction of pedagogical innovations;
- problems of determining the structure of innovation;
- issues of innovative pedagogical activities by teachers practitioners;
- determination of the stages of the practical development of pedagogical innovation;
- analysis of innovative processes in education;
- theoretical substantiation of innovative pedagogical technologies [3].

Despite the large number of studies in the field of pedagogical innovation and currently there are no uniform approaches to the definition of the concept of "innovative pedagogical activity".

Integrated and comprehensive understanding of the term "innovative pedagogical activity" requires the analysis of each constituent concept of the indicated concept.

So, in the psychological and pedagogical dictionary edited by E. Rapatsevich concept is considering as "active interaction with the surrounding reality, during which a living being acts as a subject, purposefully affecting the object and that thus satisfies its needs" [10, p. 169].

Among the wide range of interpretations of the concept of "pedagogical activity", we closest to the justification of its essence I. Zima, which understands the educational and educational influence of the teacher to the student, aimed at his personal, intellectual and activity development, simultaneously performing the basis of its self-development and self-improvement [5].

According to Z. Abasov, innovative activity is a manifestation of an incoming personality activity, the exit of a subject beyond this situation, beyond the framework of the initial, regulatory activities. In this case, the teacher's pedagogical position is changing, there is a transformation in its professional and personal installations, motives, objectives, operating, reflexive components of its work, in the subject and object of pedagogical impact - students "[1, p. 98].

The generalization of scientific approaches to determine the essence of innovation activities made it possible to formulate several scientific approaches. So, the activities analyzed by the researchers are considered as:

- understanding of fast processes;
- formation of a new type of thinking;
- personal understanding of professional activities in the system of other activities;
- comparison of the results of the realized quality of activity with the planned;
- knowledge of modern activities [10].

On the basis of the concepts considered, it is advisable to apply to the rationale for the essence of the term protruding the object of this study. Thus, within the framework of this study, under innovative pedagogical activities, we will understand the special kind of creative activity of the teacher, which is aimed at updating the educational system. Analyzed type of activity is the result of human activity, which manifests itself not only in the adaptation to the conditions of the external environment, but also, first of all, in changing this environment in accordance with personal and public needs and interests.

In this key, it should be emphasized that the activity analyzed by us is not only in the presence of the ability to solve certain educational tasks, but also motivational readiness for finding the optimal solution to the tasks outside of external control.

Indicators of innovative pedagogical activities, the following are allocated:

- the variability of the teacher's activity;
- possession of creative activity methodology;
- possession of pedagogical research methods;
- the ability to generalize, analyze and the practical application of the experience of creative activities of other teachers;
- the ability to cooperate and mutual assistance [9].

The implementation of innovative pedagogical activities, according to modern researchers, is based on the following principles:

- integration of education;
- differentiation and individualization of education;
- democratization of education.

Accounting for these principles provides for a change in the nature of the education system, approaches, contents, methods, forms, teaching technologies and education [4].

Having considered the essential aspects of innovative pedagogical activities, it is worth emphasizing that its implementation is impossible without knowing its structure.

An analysis of theoretical sources in the field of pedagogical innovation suggests that at the present stage in this scientific industry there is no single approach to the determination of the components of the structure of innovative pedagogical activities. So, in view of what was said, it is necessary to refer to the consideration of several scientific approaches to identify the structure of the activities analyzed in this study.

Most scientists share the opinion that innovative pedagogical activities are multicomponent [2].

Analysis of the theoretical concept suggests that, according to a scientist, innovative activity is a holistic hierarchy of structures, within which:

1. A workforce, including a set of components: motifs, goals, tasks, contents, forms, methods and results;
2. Subject structure, which includes the activities of all participants in the innovative educational process: administration of educational institutions, teachers, scientists, students, parents, consultants, experts, and others;

3. The level structure, which includes the innovative activities of the subjects of innovative development at the international, federal, regional, district and local educational levels;

4. The substantive structure, components of which are the stages of the introduction of pedagogical innovations;

5. Structure of the life cycle of innovation, including their occurrence, development, maturity, development, distribution, saturation, routinization, crisis and modernization;

6. Management structure implying interaction of planning, organization, manual and control;

7. The organizational structure, the components of which are diagnostic, prognostic, organizational, practical, generalizing and implement stages of the development of innovation [7].

V. Slavinin determines the three-level structure of innovative pedagogical activities, components (levels) of which are:

- reflection;
- creative-converter;
- crection [10].

Analysis of other scientific approaches allows to determine the overall structure of innovative pedagogical activities. To its components, we will take the following:

- personal-motivated processing of existing educational projects, their interpretation of the teacher, the dissection and classification of problem pedagogical situations, an active search for innovative information, familiarization with innovation;

- an independent analysis of the teacher of its capabilities regarding the development or development of innovation, the decision to use its use; formulating goals and key conceptual approaches for the use of innovation;

- forecasting changes, difficulties, means of achieving the goals and objectives, the results of the implementation of innovation;

- discussion of ways to introduce innovations with colleagues, administration, participants in the experimental approbation of innovations;

- formulating the concept and stages of experimental work on the introduction of innovation into the practical activity of the educational organization;

- implementation of practical actions to introduce innovation and tracking its development in the educational environment;

- control and correction of the process of introducing innovation;

- assessment of the results of approbation of pedagogical innovation, reflection [9].

Consideration of the main approaches allows conclude that the structural and functional components of innovative pedagogical activities are in close cooperation, forming a holistic dynamic system.

Summarizing the above, conclude that innovative pedagogical activities are modern researchers in various aspects, namely:



- both developing, mastering and using innovations;
- as a way outside of regulatory activities;
- as an ability to generate ideas, their embodiment, analysis and production;
- as the highest degree of pedagogical creativity, invention, the introduction of a new one in pedagogical practice;
- as an experimental and search activity of teachers in order to develop, experiment, testing, implementing and applying pedagogical innovation.

Many approaches to determine the essence of innovative pedagogical activities and the definition of its structural components justify the need to develop a unified scientific system, which actualizes further scientific research in this key.

Innovative activities covered almost all structural links, education subsystems, since this is recognized as the leading condition for the renewal of education, the basis of its further development.

Teachers see in the concept of "innovation" two main components: this is something new compared with the previous one and this new is aimed at improving the quality of education. In general, the essence of the definition is indicated quite true. In a modern understanding, innovation is "manifestation of new forms or elements of something, as well as the newly formed form, element." Synonym for innovation is the concept of "innovation".

Pedagogical activity, based on the understanding of its own pedagogical experience with the help of comparison and studying the educational process in order to achieve higher results, obtaining a new knowledge, introducing new pedagogical practice, is a creative process on planning and implementing pedagogical innovations aimed at improving the quality of education. This is a socio-pedagogical phenomenon, reflecting the creative potential of the teacher. Innovative activity is unthinkable without developing the teacher of their professional skills, reaching the peak of their vocational maturity.

There are various classifications of innovator teachers. According to the nature of innovation, the creators and implementers allocate. The first are the authors of innovations. The second organize the process of its development.

The concept of "innovation" invests the following meaning: "Innovation applies not only to the creation and dissemination of innovations, but also to transformations, changes in the form of activities, the style of thinking, which is connected with these innovations" [11].

Many authors have created works on pedagogical innovation, such as M. Burgin, V. Pontaghansky, S. Polyakov, V. Polonsky, M. Potashnik and others, the concept of "new in pedagogy" correlate with such characteristics as useful, progressive, positive, modern, advanced.

The main value of the term characterizes the active, conscious action of a person with hope for good luck in the face of uncertainty of the actions. At the same time, volitional qualities are noted. The second interpretation takes into account the unfavorable outcome of the events with the same accentuation of attention on the qualities of the person - courage, courage, determination, enterprise.

The risk is a rather complicated phenomenon inherent in any field of human

activity associated with many conditions and factors affecting the positive outcome of decision-making solutions. This is more often an action associated with overcoming uncertainty on the way from a goal to the result, with a possible adverse outcome or consequences. Currently, an active study of the risk problem is underway. Modern risk management is focused on risk management, the ability to analyze and assess the risk to prevent, avoid or minimize the risk of activities of the subject. Since in each of the sciences or areas of activity, its peculiar risk is considered, the uniform classification of risks does not exist.

Risks can be divided into: strategic, physical, risk of mismatch, dispositional, technological, risk of inconsistency and risk of inaction.

Considering the risk system that teachers may be subject to innovative activities, we consider the teacher as a subject of innovation, creating a special social space, which ultimately determines the course of innovative development, direction and result. Innovative activity acquires meaning when the effectiveness of the desired result exceeds the possible risk in achieving it. The probability of obtaining the results of innovation, in which the goal is not achieved, is called an innovative risk or risk of innovation.

The consequences of risks can manifest itself both on the personality of each of the participants in the innovation process and on their relationship.

Since pedagogical activities are often carried out in conditions of uncertainty (especially in the process of communicating the teacher with students), it is closely related to the risk of adopting a teacher inadequate to this situation, and therefore with the ineffectiveness of pedagogical impact. Any extraordinary teacher's decision is associated with risk, therefore it will be accepted or not, depends on the readiness of the teacher to risk.

The optimal level of readiness to risk is the result of a teacher's professional development strategy, involving the self-improvement and self-implantation of the teacher. Increasing the level of such components of self-consciousness, as self-efficacy, self-imministration, self-esteem, self-interest, is a psychological condition for optimizing the readiness for risk at teachers [14].

Thus, it is impossible to avoid completely risk in innovation, as innovation and risk are two interrelated categories, but as we see, they need a teacher for full vocational and personal development in the modern world.

A significant indicator of educational innovation is a promising start in the development of the university, the introduction of changes in the modern system. In particular: new approaches to the structure of the basic curricula; Modern curriculum; high-quality educational and methodological support for each subject; other approach to modeling classes and evaluation of students and teachers; To the recognition of the advantages of the learning process.

In order to achieve the effectiveness of the innovation introduced, it is important to realize what they need, whether they will benefit society, whether there is a need for their introduction, etc. The following requires taking into account the factors of innovation needs, in particular:

- ✓ the creation of new educational institutions in type and form leads to their

competition and requires high-quality training, which is possible to implement only through the innovation system;

✓ a change in the list of educational items, the combination of several items in one requires not only the correction of the content of education, but also to continuously update learning technologies;

✓ the development and improvement of innovative activities of teachers, including the development and application of modern pedagogical technologies and aimed at the formation of both the competence of teachers and students;

✓ changing the role of the teacher, which from the knowledge translator should go to the role of the partner, the creator of the competencies of students.

Modern teachers are associated with the use of various educational technologies in the educational process, among which the most popular innovative technologies can be distinguished.

1. Information and communication.

2. Personally oriented technology in the teaching of the subject.

3. Information and analytical support of the educational process and managing the quality of students' education.

4. Monitoring of intellectual development.

5. Educational technologies.

6. Didactic technologies based on the development of the educational process of the university.

7. Psychological and pedagogical support of the introduction of innovative technologies in the educational process of the university.

Innovation occupy a special place in the education system, as the social institution and the readiness of teachers to innovative transformations, is an important condition for the modernization of education. From the readiness of teachers, to accept and realize innovation largely depends on the quality of the educational services provided and, as a result, the result of education. However, in the scientific literature there is not enough research confirming the need to form the preparedness of teachers to innovative transformations in educational and professional activities.

Innovative activity must meet standards. To identify the degree of effectiveness of innovation activities, criteria are needed, without which an objective assessment of the innovative activities of the university is impossible.

The main criteria of innovation are:

• compliance with the tendencies of the development of society, its social order;

• the effectiveness and effectiveness of pedagogical activities;

• optimal consumption of forces and means of both teachers and students;

• stability of the results of the educational process;

• the presence of novelty elements in the educational process;

• the relevance and prospect of innovation;

• Compliance with modern achievements of pedagogy, psychology and techniques.

• To make changes to the education system, engage in innovation activities,

you need to rely on the experience gained earlier, to consider the dynamics of the development of innovative education, starting from the moment of the emergence and further spread of innovations in order not to make mistakes of past years.

Knowledge of the criteria for innovation and innovative universities and innovative training is all the terms of the innovative movement in education, which is aimed at the formation of a competent personality.

Today it becomes obvious that inevitable changes occur in public life. The transition to the post-screw stage of the development of society, accompanied by the rapid dissemination of information technologies in all spheres of life, requires rethinking the established approaches to education and search for new ones.

Therefore, a qualitatively new educational system can be created, capable of designing and reproducing all wealth of phenomena and ties of the material and spiritual life of society.

Human readiness for effective activities is considered in the theory and practice of education as a condition for successful performance, as election activity, as an identity relationship, as a complex of abilities, including various properties and quality of personality in the structure. The readiness for innovation to know, possess the qualities and abilities that ensure the organization of the educational process in development. The readiness of teachers to innovative transformations in educational and professional activities is considered as the necessary component of personality-professional development, which ensures the formation of new moral and humanistic positions, qualities, continuity of the growth of vocational education.

The objectives of education relate to historically socially variable ideals personality and educated person. The objectives of society and the objectives of students are also associated with each other: the less educated person is educated, the more spontaneous goals with public and pedagogical purposes. The removal of this contradiction involves a gradual rapprochement and, ultimately, the coincidence of the personal meanings of the activities of participating in the formation of the parties. In this regard, the analysis of the trends, which, originating in the last century, can have particular relevance and significance, which in the present century, which have a significant impact on the formation of the education system.

In modern conditions, the modernization of education before the pedagogical community is updated with new targets for the implementation of professional activities in the search for new content of education, innovative teaching technologies, on the basis of which conceptual thinking of students can be formed and the choice of conceptual grounds for their future professional activities, the opportunity for students to learn, making it , solving problems, critically analyzing a variety of points of view.

The objects of innovation in the education system the objectives, forms of organization and structure of the educational process, teaching technology, subject interaction, etc. From the point of view of belonging to one or another part of the educational process, allocate the following groups (or types) of innovations:

- in the content of education;
- in techniques, technologies, methods of the educational process;

- in the organization of the educational process;
- in the management system of the general education institution.

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In the analytical model of the modern personality, significant features of the personality of the innovative type are identified: openness experiments, innovation, changes; readiness for pluralism of opinions, recognition of the existence of different points of view without concerning the change in its own vision of the world; orientation on the present and future, and not for the past; confidence and ability to overcome the obstacles created by the life; planning for future actions to achieve goals, both in public and in personal life; faith in the ability to regulate and predict social life; a sense of justice based on confidence in the relationship from deposit and skill; high value of education and training; respect for the dignity of others, regardless of the status position. [12]

In the field of education, the efforts of the world community are focused on the resolution of the following contradictions: between general and private: the gradual transformation of a person in a citizen of the world without losing their roots and with active participation in the life of the nation and its regional communities; between traditions and modern trends: adaptation without denying its own roots, dialectical communication of independence with freedom, technical progress management associated with the development of new information technologies; between a significant increase in information and the possibility of a person to learn it; between rivalry in achieving success and desire for equality of opportunities in the field of economics, social development and education; between the market economy and socially oriented market society.

In addition, three leading education principles should be attributed to the main elements of training: learn to acquire knowledge; skill work; Learn to live.

In the context of scientific program and the development of new forms of economic and social activities, the most optimal is the combination of broad general cultural education with a deep development of specific highly specialized knowledge. In the modern world, a common cultural level is a foundation for continuous education throughout life.

The priority task of adult education is to provide a person with a complex of knowledge and skills necessary for active creative and bringing life satisfaction in a modern dynamically developing society. It is about the constant, incessant human development as an employee, a citizen, personality, individuality throughout his life.

The ability of people to the initiative becomes in modern conditions a more

significant development factor, rather than operating material resources, so competitive struggle focuses not around the problem of possession of material resources, but for the ability to rapidly update, the ability to innovation. Among the leading qualities of the personality of the employee, along with the competence, the knowledge of the case, the initiative, readiness for innovative changes becomes equally significant. And the mobilization of these qualities directly depends on readiness and ability to learn.

In a modern pedagogical tradition, the continuity of education is mainly considered in relation to all units of the educational system [3]. Under continuous education is understood as "stadium and holistic in its elements a lifelong process, providing the translational development of the creative potential of the personality and the comprehensive enrichment of its spiritual world. A wide understanding of the category allows you to analyze the most different forms and types of education from informal to informal, from children-youth before the formation of the "third-age". It should be noted that in the proposed wording to a greater extent, an adult period in the life of a person will be emphasized.

Y. Kulytkin is considering continuous education in two aspects: 1. organizational and pedagogical as a "actually functioning and ever-developed system of state, public and private institutions, ensuring the possibility of general and professional education of a person on throughout his life "; 2. as "the most important socio-pedagogical principle that reflects the current tendency to build education as a holistic system aimed at the development of the person and the component of the condition of social progress." From this point of view, continuous education is an "element of the personality of the individual as a whole, the condition of the continuous development of intellectual potential in the temporary changing world"[6].

As they transition to a continuous, basic education, performing in the form of a universal mass, necessary and mandatory for each member of society, increasingly needed in addition to them with species, forms and methods of training that meet educational needs, especially different, the more activities differ, In which they arise. In this regard, the issue of large-scale innovative processes, social and pedagogical creativity processes is updated. Today it is not separate islands, but a mass phenomenon, the deep flow of pedagogical thought, one of the leading strategies for the development of domestic education.

The innovation was asked as an interdisciplinary area of research at the junction of philosophy, psychology, sociology, theory of management, economics and cultural studies.

The development of pedagogical innovation in our country is associated with a massive social and pedagogical movement, with the emergence of a contradiction between the existing need for the rapid development of education and the inability of teachers to implement it.

Most researchers determine innovative processes in education as a system that is actively responding to the challenges of socio-cultural reality and non-rejecting existing traditions makes fundamental changes in training, education and identity

development. In innovative processes, it is converted not only to the most pedagogical activities inherent in the means and mechanisms, but also its target attitudes and value orientations are significantly rebuilt.

The public adoption of innovative ideas in education can be implemented if the pedagogical interaction of all subjects of the educational process is provided.

As part of innovative education, conditions for the development of the individual are created, its right to an individual creative contribution, to personal initiative, to freedom of self-development.

Innovative educational processes are based on various forms of interaction that develop in the logic of restructuring the levels of self-regulation.

Considering the microstructure of the innovation process, scientists allocate the concept of the "life cycle" of innovations, which comes from the fact that the innovation is the process proceeded in time. In this process, the stages differing by type of activity ensuring the creation and execution of innovation are extended.

Innovation acts as specially organized activities, self-reproducing itself, so it claims a completely definite set of character characteristics, among which the authors distinguish:

- the need for change, the ability to escape from the authorities of the traditions, determining the development points and the social mechanisms adequate to them;
- the presence of creativeness as personal quality and creative thinking;
- the ability to find ideas and use the possibilities of their optimal implementation;
- systemic, prognostic approach to the selection and organization of innovations;
- the ability to navigate the uncertainty and determine the permissible degree of risk;
- readiness for overcoming constantly emerging obstacles;
- developed reflection ability, self-analysis.

In the field of education, they allocated the criteria parameters of the typology of innovation as the quality of professional-pedagogical culture:

- is innovation adopted as a personally significant value;
- is the approach to innovation shall be divided as the necessary social mechanism for the development of the education system;
- is innovation is understood as a holistic system of relations and specifically organized activities;
- is this attitude to the organization of own professional activities translated;
- to what extent in its own activity is assigned the specificity of its innovative organization.

The innovative process is to form and develop the content and organization of the new. It is a combination of procedures and funds by which scientific discovery or idea turn into a social, including educational innovation. An innovative process can be viewed as a process of bringing a scientific idea to a stage of practical use and the implementation of related changes in the socio-pedagogical environment. In general,

the scheme of the innovation process can be represented as follows.

Innovative processes include many components, but their simple amount is insufficient without structural connections and patterns characterizing the innovative process as a whole.

Holistic understanding of innovative processes requires disclosure of leading trends and contradictions in their development. Innovative processes uniting the creation, development and application of pedagogical innovations, due to their unity, can significantly speed up the processes of updating the education system as a whole. And it is not randomly the study and implementation of all three links of innovative processes, is increasingly included in the education system at different levels, right up to individual schools.

One of the important tasks of modern pedagogical innovation is the classification of innovations, the knowledge of which is necessary to the teacher in order to understand the features of pedagogical innovations, it is understood that they are combined and distinguishes from each other. It is usually believed that the laws are expressed by relations, and the classification and their private case - typology - only precede the discovery of laws. Modern studies in the field of science methodology show that classifications are also the laws of science, only having a different type.

It is important to lay the robust foundations of innovative pedagogical competence, set the vector of the further professional personal self-development of the teacher, including with the help of informal and informal education.

The organization of the educational process is the main training and professional activities of the teacher, so all innovations should be reflected and formed in the processes of training and training of students and can be directed to the change in technology, learning, forms of work in order to form professional competence, educational education. Building an innovative educational process is due to the following principles:

- principle of value orientation (formation of professional position);
- principle of flexibility (adaptability), (operational response to needs, challenges, changes in professional environment, accounting for employers' requirements, which increases the competitiveness of future graduates);
- the principle of conscious perspective (understanding and awareness of the nearest and future prospects);
- principle of intensification of training (the management of independent work of students in order to increase the activity and the formation of a continuing learning need);
- the principle of modularity, according to which the learning content is represented in the form of modules, each of which includes the requirements for the result, content, technology of training, organization of independent work, forms of control.

In the context of the global digitalization of all sides of public life in a substantial filling of the concept of "innovative competence", including "innovative pedagogical competence", increasingly acquires digital literacy, which is a set of



knowledge and skills necessary for the safe and efficient use of digital technology and resources, internet.

Digitalization of education has a significant impact on the content of the activities of vocational training teachers: new competencies caused by rapidly developing digital technologies appear.

The teacher should be able to apply modern technical training and educational technologies, including, if necessary, carry out e-learning, use remote educational technologies, information and communication technologies, electronic educational and information resources; Know the electronic educational and information resources necessary for the organization of educational, research, project and other activities of students, psychological and pedagogical frameworks and the methodology for the application of technical means of training, information and communication technologies, electronic educational and information resources, remote educational technologies and e-learning.

In this regard, the content of modern additional professional programs for university professors and colleges should include issues of applying digital technologies in the educational process, developing adaptive electronic educational resources, organizing pedagogical interaction with students in the Internet environment, etc. [8].

In connection with the requirements of the new digital reality, the development of innovative pedagogical competence of teachers of agricultural universities acquires particular relevance.

Innovative thinking as a component of pedagogical thinking is a cognitive formation, a specific intelligent tool, which provides a certain technology of the flow of mental processes, as well as the possibility of a teacher's implementation of cognitive and search activity.

The innovative activity of the teacher becomes the source of new ideas for students and increases their motivation to achieve success in learning activities. The organization of innovative student learning assumes that teachers should be able to not just strive for enriching their professional experience, but also be able to perceive and introduce innovations, develop the ability to create a new experience.

In the pedagogical literature there are two types of innovative processes in the field of education. The first type is innovation, which is largely spontaneously, without accurate binding to the most generating need or completely consciousness of the entire system of conditions, means and ways to implement the innovation process. The second type of innovation is innovation in the system of education, which is a product of a conscious, targeted, scientifically cultivated interdisciplinary activity. A generally accepted system classification of innovations in education has not yet been created.

Education as a social system should be flexibly adapted to changes in the social environment and, as a result, change and develop. From the readiness of teachers, to accept and realize innovation largely depends on the quality of the educational services provided and, as a result, the result of education.

The formation of an innovative culture of the teacher is implemented on the

basis of the development of innovative thinking in the process of implementing innovative behavior. In turn, innovative culture plays the role of the socio-cultural mechanism for regulating the innovative behavior of the teacher.

The person's readiness for effective activity is considered in the theory and practice of education from various points of view: as a condition for successful performance, as electoral activity, a configuring personality for future activities and representing the concentration or instantaneous mobilization of personality forces, aimed at the right time on the implementation of certain actions, as personality relationship.

The uncertainty of the parameters of social innovations and results allows you to imitate the required changes without the fact of their implementation. Social innovations have a closer connection with social relations, culture, a large scope of application, stronger dependence on personal qualities of innovators, the advantages are not so obvious and provisions. The subject of the changes, become the people themselves, their position, status, habits, relationships. As a result of innovation, there is a voltage caused by change, stressful situations are found.

Keeping all the generic features of innovative processes, pedagogical innovations differ from similar processes in other areas primarily by the fact that the object of exposure to innovation, the subject of their activity is a living, developing, who has a unique student's identity. It is on the improvement of the process of developing this person and any pedagogical innovations should be sent.

The structural and functional approach under the innovation culture implies an understanding of a certain system of material and ideal elements reflected in the consciousness and behavior of a person, unity with their real functioning.

Innovative culture of the teacher is advisable to consider as a professional phenomenon that is based on certain qualities and the views of the teacher and manifested in two levels: personal and professional.

The modern education system has accumulated a rich experience, which must be implemented in specific pedagogical activities, but often remains unclaimed, since most teachers and managers have no need for learning and applications, there are no skills and skills in ERO selection and analysis. In reality, teachers often do not think about the need and appropriateness of the analysis of their own pedagogical experience and experience of their colleagues.

The teacher should have great performance, the ability to restrain strong stimuli, high emotional status and desire to approach their work creatively. In addition, the teacher must have some special qualities. These include knowledge of new technologies, the ability to develop projects, mastering the latest learning techniques, as well as the ability to analyze and identify the causes of the existing shortcomings.

The strategy of innovative processes in the modern education of Ukraine provides for a substantial reorganization of existing pedagogical systems, understanding the values, objectives and content of their activities and the root transition from totalitarian unification, old stereotypes, inefficient templates and rigid forms to the creative initiative and individual responsibility of teachers in the design

and organization of the pedagogical process. We indicate that pedagogical innovation exists on two levels: theoretical and technological. In modern pedagogical science, a variety of ideas, theories, concepts, models of innovative pedagogical processes are sufficiently developed, which are not enough intensively

Innovations in pedagogy must necessarily provide for the design of the technological level of the implementation of the pedagogical theory. Such a break

Between fundamental studies and applied innovation is filled with pedagogical design - the main way, according to V. Sukhomlinsky, the unification of the pedagogical theory and practice.

The reasons for the low innovative culture of the teacher are the invertation of the theoretical foundations of the design and introduction of innovative-pedagogical technologies.

The main criterion of innovation is a novelty, which has an equal attitude to the assessment, both scientific pedagogical studies and advanced pedagogical experience. Therefore, for a teacher who wants to join the innovation process is very important to determine what the essence of the proposed new, what is the level of novelty. For one, it can be really new, for the other it is not. In this regard, it is necessary to approach the inclusion of teachers in innovative activities, taking into account voluntariness, features of personal, individual psychological characteristics. Several levels of novelty are isolated: absolute, locally absolute, conditional, subjective and distinguished by the degree of fame and application area.

The possibility of creative use of innovation in mass experience can be considered as a criterion for assessing pedagogical innovation. In fact, if a valuable pedagogical idea or technology remains within a narrow, limited application, due to the characteristics and complexity of technical support or the specifics of the teacher's activities, it is unlikely that we can talk about the pedagogical innovation in this case. The creative use of innovation in mass pedagogical experience is confirmed at the initial stage in the activities of individual teachers, but after it is approbation and objective assessment can be recommended for mass implementation.

The management of innovation activities is carried out in various forms. The basic principle of management is to support the teacher with various means, as educational (pedagogical studies, consultations, seminars, etc.), and material (various forms of surcharges, premiums, etc.) One of the most important points is to unfold among the process teachers Reflection and understanding regarding their own pedagogical activities. For any innovation, an innovative pedagogical activity of a particular teacher is assumed. Consequently, it is necessary to create conditions for pedagogical creativity, improving forms and methods of training and education, it is necessary to ensure variability in the selection of content.

A competence approach to the organization of the teacher's activities is, first of all, in the awareness that human professional activities cannot remain unchanged throughout his career and provides for a continuous increase in their professional competence. Modern approaches to the organization of the teacher's activities are asked by the logic and trends of the development of higher professional education: replacing the reproductive functional model of education by the competence model.

As a result of such a replacement, the formation of forms, procedural characteristics of education occurs. Accordingly, the teacher's position is changed: a teacher who is learned to be replaced by the teacher who is accompanied by the most important functions of which will be diagnosed and counseling. This in turn will increase the relevance of instructing and training technologies that contribute to a deeper assimilation of ways of activity. Based on such technologies, problematic, interactive, research technologies can be applied more successfully.

The innovative focus of the teacher is characterized by the presence of motivation of achievement. The motivation of the desire for success encourages teachers to activity, helps purposefully overcome difficulties, contributes to the development of personal and professional abilities. Motivation of achievements is one of the varieties of motivation of activities related to the need of an individual to achieve success and avoid failure.

In order to be formed by motivation predetermining success or to avoid failure, certain conditions of upbringing and environment are needed, as well as personal standards, self-assessment of the attractiveness of personal success failure in certain activities and individual preferences.

It is impossible to prepare a modern specialist who traditionally working teacher. Most of the teachers still retain a conservative approach to the transfer of knowledge to students who are not capable of independent work is becoming an increasingly serious obstacle to a positive public response, the Society is growing discontent with the highest school, the highest school investment is unattractive, innovatively slow. Situation is exacerbated by weak attempts to introduce innovative approaches to the process of professional training of future teachers of the university and into the system of advanced training and retraining of the faculty, which in practice it is predetermined by the episodic of innovation activities, its implementation by the "method of trial and error". In this regard, the need to prepare teachers capable of implementing innovative activities in education is updated.

This problem can be effectively solved in the process of retraining and improve the qualifications of higher education teachers in a self-learning organization. In a self-learning organization are created, acquired, knowledge is transmitted and saved. Most often, we are talking about creating in the framework of one organization, institutions, firms of a continuing training system aimed at preparing employees to solve innovative professional tasks.

Consider the concept of a self-learning organization. A self-learning organization is an organization that creates, acquires, preserves, multiplies and transfers knowledge, skills and skills. A self-learning organization is a model of the organization of the future, which quickly adapts to changes due to continuous training of personnel based on the constant increment of professional competencies in demand. A self-learning organization allows you to build the most productive forms of organizational cooperation of personnel, qualitatively transform its dynamic and structural characteristics and on this basis to increase the innovative susceptibility of the modern company.

Consider the concept of a self-learning organization. A self-learning

organization is a place that creates certain conditions that contribute to the preservation of the acquired knowledge, skills and skills, as well as to bring and transmit them to others. This is an organization that is adjusted to various changes due to continuous personnel training due to a systematic increase in professional competencies that are in demand.

This organization is changing traditional methods and forms of behavior, through their continuous update, which leads to innovation and competitiveness.

Innovative activity includes the following components, such as: motivation, creativity, technological components and reflexive, which are led by a teacher to innovative activities.

The motivational component is based on how the teacher refers to the innovations on its needs for innovation. The most important component that characterizes innovative activities is the creative component. This component shows the activity of the teacher in his professional activities. This component is sods with changes and introduction of various transformations to the already existing professional experience of the teacher. The technological component shows how technologically ready to implement innovation activities. Relaxing shows the ability of the teacher to evaluate its professional activities and its capabilities, on the ability to control the innovative changes that occur in the educational process, the ability to look for new ways to solve and improve this process.

In order to be achieved by the relationship between all the components of the functionality and structure, the teacher's subtype to innovation should be implemented in stages and should include an innovative process of transformation, as well as the process of professional self-development. Such activity includes the following steps: creative, motivational, technological, reflexive. Each of the stages listed includes the following components: goal, means and result. In turn, each of the listed stages is determined by such levels of development as: adaptive, basic, creative, professional.

Adaptive level. This level includes teachers who prevail an unstable attitude towards innovation. Teachers seeking to fulfill innovative activities partially leaving pressure from outside. Own creative activity is minimal; mainly it is associated with copying someone else's experience, foreign techniques, methods, forms, innovative technologies. On the part of technological readiness, there are their own developments here and applies their experience. The professional readiness is characterized by small knowledge and skills, minimal and does not always have due effect, used by teachers episodically.

The basic level includes teachers who are open to innovation; they have a positive motivation and are ready to apply everything new in pedagogy. In creative activity, there is a creative ability to imitate; here teachers use someone else's experience in a modified form, preventing its own elements into it, separate methodical techniques, without changing the techniques in training and education.

The ability of teachers to apply innovative technologies, the possession of knowledge on the basics of pedagogical innovation is one of the characteristics of technological readiness. If the teacher has formed an understanding of the need to

fulfill the reflection of its own activities and give a personal assessment by introducing innovations, then these qualities characterize reflexive readiness. At this level, the teacher understands and wants to self-improve and he has formed reflective knowledge and skills.

The next level we will look at is a professional. At this level, teachers have a certain desire to apply innovative activities. At a professional level, various professional tasks are solved quite successfully, in the design and use of various techniques, forms and methods. In the formation of the personality of the teacher, creative activity is manifested as a subject of innovation. Innovative pedagogical activities are carried out thanks to the use of knowledge and skills that are directly related to technological readiness. In innovative activities there is a constant search for solutions for the implementation of this activity. At this level, teachers are evaluating and professional activities are constantly being implemented, the success and disadvantages of this type of activity are systematically analyzed, which are associated with innovation. Teachers are actively self-improvement.

At the creative level, teachers are aware of the possibilities of innovation, in dire need of the exercise of the manifest need. Teachers have a creative approach in solving professional tasks, which are created by author's doctrines in education and methods of learning. Innovative activities can be carried out and adjusted at all stages of its manifestation: at the stage of analysis, planning, implementation of innovative actions, control. Innovative activity is successfully analyzed, and the data obtained are applied to increase its efficiency, and actively implements itself in innovation.

Having considered the levels of the development of each of the components of innovation activities, some principles of self-learning organization can be distinguished:

- The person is the most important bioresource in the development of the university, since it is he who makes the university competitive in the educational market among other educational institutions;

- In the professional activity of any teacher, creative activity is very important. There is a connection of listeners to the search for non-standard, something new, non-template, which can contribute to their self-realization in the creation of a new educational process, programming the innovative development of the university;

- The learning process is based on team education. Groups are formed, each of the members of this group should clearly imagine the purpose and objectives of the work that will need to be performed, as well as types and methods of activity to implement this work and the final result. All team members are involved in this activity in proportion to their interests and desires. Thanks to the joint activity, the team forms new levels of command interaction. The team may include teachers not only from various departments, but also of various faculties, this will not negatively affect team collaboration.

- Training is based on the personal experience and skill of each teacher; Teaching experience, building individual training graphs Taking into account the professional difficulties, which allows the distribution of pedagogical experience using the self-assessment of the learning and recognition of the value of self-

education.

- In group training, various methods and forms of training are used: professional trainings, analytical and design seminars, individual consultations, role-playing or modeling games, project development, round tables, discussions, etc., all forms and teaching methods should be associated with specific situations this institution. This will allow teachers to master innovative technologies.

- During classes, due attention is paid to the development of the ability of systemic thinking. Taking into account the educational process of the university as a system, students develop a holistic idea of the processes and phenomena taking place in the university, in the course of this they will be able to understand how all this can be carried out most successfully.

- In order for training to have guaranteed success, its effectiveness is achieved by performance and focus on the casual application of the knowledge gained and ways to solve problems in practice.

- In the learning process, a personal position of each of the participants is guaranteed. Each teacher can evaluate at what stage of professional development it is now, what is his place in the university, what is the further prospect and what resources necessary for this. Special importance is paid to each employee to determine for himself, how his personal activity and creativity affects the implementation of innovative goals and objectives of the institution.

The innovative activity of the teacher performs a phenomenon, which reflects the creative potential of the teacher. This term is relatively young, if we consider it from the point of view of its application to a general education process. Therefore, there are many different methods that explain this concept from a particular point of view.

Under the term pedagogical innovation understands various changes aimed at changing the technology of upbringing and learning to increase their effectiveness. At times, this concept is attached to a completely different meaning. Not only the creation and popularization of innovations, but also changes and reorganization with the help of thinking and in the field of activities that are associated with these innovations may be attributed to the concept of innovation. One way or another, it is something progressive, useful, advanced, modern and positive.

In modern socio-economic conditions, the professional activities of the university teacher are based on certain factors (social values and norms adopted in the teaching community, the role of the teacher in society, etc.) and new social conditions (globalization and commercialization of education, a change in the social status of the teacher and prestige profession, etc.). Analysis of the professional activities of teachers of the university dedicated to the study of many scientists [1]. The practice of higher education, as well as its own experience in the higher education system, shows that the professional activity of the teacher is carried out in the following aspects: pedagogical, organizational, methodological, scientific, innovative activities [2, p. 138]. In other words, in the professional activities of the university teacher, it is necessary to combine and integrate methodical, innovative and scientific activities. In addition, modern trends in the development of higher education and qualification

requirements for the university teacher are talking about nomination of scientific and innovative activities and the constant need to develop the scientific and innovative potential of the teacher.

Analyzing the structure of the scientific activity of the teacher, it can be concluded that university teachers can be divided into two groups: the first - with the prevailing scientific focus, the second - with the prevailing pedagogical orientation. Also in the structure of the scientific activity of the teacher, the constructive and gnostic components play a leading role, and in the structure of his personality, non-discursive, heuristic thinking, integrity of intelligence and long-term preservation of intelligent functions are dominated. It is important to note that the activities of university teachers are aimed at organizing not only their scientific work, but also scientific activities of students and graduate students, which helps him promise to plan collective research, to anticipate their results.

The first trend is associated with the nature of the implementation of scientific and innovation activities in the real practice of the university functioning. The traditional forms of scientific and innovation activities used there are more reproductive. With all this, the current conditions and requirements for the organization of scientific and innovation activities require the use of individual-personal forms of activities, orienting teachers for knowledge and rethinking their own experience, on the development of a personal pedagogical system, for the correction of different types of professional activities. The second trend is found in the teaching tendency to use well-known, justified forms, methods and techniques for innovative and scientific activities. It is clear that such "dedication" of the teacher does not contribute to the development of its scientific and innovative potential. The third trend is based on the existence of a contradiction between the scientific and pedagogical activities of the teacher. Indeed, if you bind the personal self-realization of the teacher through its inclusion in pedagogical and scientific activities, it is impossible not to see the differences in the relevant results, both in character and in content, and how to achieve. Actually, this indicates the need to resolve this contradiction by developing the scientific and innovative potential of the university teacher. The fourth trend is directly related to the definition of the driving forces of the development of the scientific and innovative potential of the university teacher. Practice points to superficial possession of teachers in knowledge of the preparation and implementation of scientific research; the use of the scientific literature focused on the formulation and simplifying innovative actions. It is clear that overcoming this contradiction requires the study by teachers of the specifics and features of scientific and innovation activities, the methods of its implementation in the practice of higher education.

Innovation should be the property of pedagogical activity of the coming decades. And if so, then the university education and the professional postgraduate education of teachers should be built taking into account the urgent need for the formation of an innovative component of pedagogical activity, the formation of readiness for innovative activities of teachers.

One of the interesting models focused on identifying the patterns of the process



of developing the professional experience of the teacher is the model of the professional evolution of the teacher. Within the framework of the model, several stages of the professional formation of the teacher's experience were allocated. At first, the teacher seizes its technical side (the development of role-playing behavior), then switches to the actual content side of the subject, which he teaches, to those techniques and methods, with which he informs this content to students. Only mastering this side of the activity, the teacher becomes able to control the main link of the learning process, the interaction with the student. And it is at this stage that the ability of a teacher to evaluate its professional-based potential not only from the point of view of those professional knowledge or techniques, which he owns, but also from the point of view of his personal-professional qualities, which are necessary for the effective implementation of new techniques, Method, technologies [7].

The process of changing priorities in the professional activity of the teacher is a reflection of one of the psychological patterns of conscious regulation of its own activity through a constant reflection of his own experience, which, in turn, is an important condition for the development of professional experience from the level of mastering the basics of professional activity to the level of professional skills.

An important component of the readiness of the teacher to innovation is the presence of a motive for inclusion in this activity. The motive gives the meaning of activity for a person. A high level of readiness for innovation activities corresponds to a mature motivational structure in which the values of self-realization and self-development play a leading role.

The next important component of readiness for innovation is knowledge of innovative models and educational technologies. This is primarily important for the teacher to understand the goals of school education and compare them with the requirements for the results of its work.

The problem of motivational readiness is one of the most significant, since only an adequate goal of improving professional experience will ensure the development of the preparedness of the teacher to innovative activities.

When considering the peculiarities of the motivational sphere, it is necessary to stop on the problem of motivational target regulation of activities. The goal may represent as direct

And the nearest expected result of human activity and the perfect, mentally represented result, what is really no, but what should be obtained in the future.

Depending on the depth of the analysis, the following levels of professional goals can be distinguished: middle targets for which the regulation and recipes of professional activities are characterized, where the main content of the analysis is the nearest practical actions that are manifested in immediate results; far, promising goals are associated with the understanding of the teacher causal reason for their activities; At this level, the teacher analyzes its professional actions, which are expressed in the development of personal qualities, achievements of their students, in their own personal development and professional achievements.

In the structure of the departments of the teacher, the objectives associated with the requirements of the Social Environment include: students, administrations,

parents, colleagues, and objectives related to personal expectations, with personal evaluation of performance, professional activities [2].

An important question arises: how the behavior of the teacher is regulated not only in relation to the near future, but also distant in the time perspective - promising purposes, not only the objectives of the personal, but also the goals of society?

In the overwhelming majority approaches to the definition of the concept "arbitrary (volitional) behavior" awareness or consciousness is distinguished as the main characteristic.

In the way, in the formation of the preparedness of the teacher to innovative activities, as part of the stage of motivational focus on the development of experience, it is necessary to understand that: the motives and objectives of professional activity should be conscious; the teacher in its activities should be guided not only to the neighboring goals, but also to promising, where a significant role should be assigned both vocational and personal development and the development of the personal potential of students.

In the preparedness structure for innovation activities, also a complex of knowledge about modern requirements for the results of school education, on innovative models and educational technologies, about all that defines the needs and opportunities for the development of existing pedagogical practice is also important.

The effectiveness of the teacher's activities at the stage of reflexive reflection, the evaluation of new experience depends on the formation and development of pedagogical thinking.

In modern psychological and pedagogical studies, much attention is paid to the analysis of practical thinking and its comparison with thinking theoretical. Such a comparison is conducted from the point of view of their fulfillment of various tasks. The work of theoretical pedagogical thinking is mainly aimed at understanding the teacher of his professional experience or experience of colleagues, and therefore the construction of plans, forecasts for the further development of educational theory and practices in general and its future activities in particular. In contrast to theoretical thinking, whose task is to search for general patterns, practical thinking is focused on the possibility of applying new knowledge, new experience in specific, multidimensional, individually peculiar situations.

Success in planning activities depends on how the teacher knows how to associate the solution of operational tasks with tactical and strategic objectives. And this is possible only if the teacher is aware of the ultimate results of its activities. The level of pedagogical professionalism and skill is largely determined by the extent to which the planning and solving of pedagogical objectives relies on the assessment and understanding of their own activities, when the upcoming activities are associated with the levels of generalization of their own practice.

In the process of forming the preparedness of the teacher to innovative activities in the framework of the reflexive reflection stage, the evaluation of new experience should be focused on the fact that: a necessary condition for the development of experience is the solution of pedagogical problems on theoretical and practical levels, taking into account the requirements, patterns of pedagogical

processes, the actual conditions for their implementation. ; The development of pedagogical experience should be focused on all levels of reflection (reflection before action, reflection in action, reflection after action); In the process of developing experience, a significant element is the planning process focused on assessing and understanding its own activities, to develop a common strategy for carrying out activities.

The originality of the professional activity of the teacher is that it is mainly built as interaction and communication in the "teacher - student" system. Depending on how the leading idea directs the strategy of the professional activity of the teacher -triter (teacher - the central figure, he directs a student to purchase specific

Knowledge, skills, skills) or humanistic (central figure - studying, and the purpose of the teacher - to teach him to learn with help and together with the teacher), distinguish authoritarian and reflective management. With authoritarian administration, the teacher is the subject of the pedagogical process, while students are only objects that are forced to act in the direction of the teacher. Reflexive management puts students to the position of active subjects of the exercise, develops the ability of their own teaching to self-government and organizes the learning process as a solution to educational and cognitive problems based on the productive interaction of the teacher and the student.

An important component of readiness for innovation is knowledge of innovative models and educational technologies. This is primarily important for the teacher to understand the goals of school education and compare them with the requirements for the results of its work.

In the modern system of higher education, qualitative changes are observed in the content, methods and forms of training, which is characterized by the need to develop and use various innovative technologies. For this, there is a need to move from the traditional system of organizing the educational process to developing, based on the principle of cooperation and the interaction of the subjects of the educational process, the implementation of the creative approach.

It is important to admit that in such pedagogical activities there are certain difficulties that determine the greater psychological restructuring of the teacher: the rejection of the stereotype of professional thinking, overcoming the "Barrier of Creativity", awareness of the insufficiency of the results achieved and the desire to improve them, raising the level of professional claims, the need for novelty, in risk, overcoming routine.

The teacher, well-prepared for innovation in this aspect, not only knows how to study the experience of innovators teachers and analyze pedagogical systems, curricula, technologies and didactic learning tools, but also can develop innovation projects, to set the goals of experimental work and plan it. The highest degree of readiness is the ability to analyze and evaluate oneself as a subject of innovation.

The readiness for innovative activity is determined by its focus on the development of their own pedagogical activities, as well as its ability to identify actual problems of activity, find and implement effective ways to solve them.

Almost fully agreeing with such a definition, it seems necessary also to

designate the role of the development of professional experience in the preparedness structure of the teacher to innovative activities. Upon readiness for innovation activities should be understood as a combination of professional personal qualities aimed at improving their own pedagogical activities, the development of its own professional experience through the perception, development and implementation of new methods, methods, techniques of activity.

We highlight the following stages in the process of mastering the teacher of the new experience: the stage of obtaining a new experience (characterized by the specificity of the focus on professional development and in accordance with this susceptibility to new information and impressions); The estimates of the new experience (characterized by the ability to aware of a new experience, its estimates primarily from the standpoint of theoretical thinking, its interpretation from different points of view); The stage of reflexive understanding of experience (characterized by the ability to reflect, evaluations with the orientation on specific objective and subjective conditions for professional activities); The implementation of the experience (is characterized by the ability to communicate interaction, openness to the dialogue, flexibility to build training activities, depending on how an academic situation is developing).

Technologies involvement in innovative activities of university teachers provide:

- Innovative productivity expressed in the publication activity of the teacher following the implementation of innovation;
- Self-realization in innovation, characterized by achievements in the implementation of innovation activities, recognizing these achievements by the medium, satisfaction of the teacher of the innovation environment of the university.

This article discusses the issue of innovative pedagogical activities and, which contributes to the emergence of pedagogical innovation needs. Also definitely, which components are based as innovation and pedagogical and which component includes its structure. The development of modern education and a number of trends that contribute to its upgrades are described. The concept of risk is considered which types of risk are characteristic of innovative activities of the teacher. It was analyzed that the modernization of the modern education system is aimed at the formation of the student's personality. The authors revealed that for the development of various trends it is necessary to introduce numerous innovations into the education system. This article discloses scientific and theoretical aspects and leading trends in the development of innovative processes in the education system, the principles of the innovative educational process are allocated, integrative qualities that constitute the essential features of the innovative type identity.

Innovative activity can be interpreted as a personal category as a creative process and the result of creative activities; It assumes the presence of a certain degree of freedom of action in the relevant entities. The value of innovative activities for the individual is associated with the possibility of self-expression, the use of their abilities, with creativity. The difficulties arising in the innovation process appear to the person as a prospect of the possibility of their permission to their forces.

Innovative productivity is characterized by the publication activity of the teacher following the implementation of innovation activities, the choice of innovative products that demonstrate its confidence of this activity.

Innovative activities can be viewed as an individual category, as a creative action and the result of creative activities; It contains the presence of a certain degree of freedom of action in certain subjects. The advantage of innovative activities for the subject is associated with the possibility of self-expression, the use of its abilities, interrelated with a creative approach. The difficulties that may arise in the innovation process appear before the personality as a prospect of the possibility of their permission to their forces.

The relevance of the problem under consideration is due to the paradigm of the modernization of the Russian Higher Education system. The author determines the involvement in innovation as a multidimensional, managed system of targeted processes. The article identifies the main process components of engaging in innovation activities - the processes of managing innovation in high school, the management of the university environment, managing personality and professional resources, overcoming the barriers of innovation and psychological and pedagogical support. It emphasizes the role of psychological and pedagogical support to overcome innovative barriers systematizing external processes involvement. The conclusion is justified that the management of the process of engaging in the innovative activities of teachers of the university provides manifestation of the innovative activity of university teachers.

For the development of innovative activities of the teacher, it is necessary: the support of the state, the support of the university itself and the desire of the teacher itself to develop.

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#### 6.4. THE DEVELOPMENT OF FOREIGN LANGUAGE PROFESSIONALLY-ORIENTED COMMUNICATIVE COMPETENCE AS AN INTEGRAL PART OF THE FUTURE DOCTORS PROFESSIONAL COMPETENCE

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**Abstract.** In the modern world, foreign languages have become not only a mean of international communication, but also a way to achieve a better standard of living. Without knowledge of foreign languages, it is difficult for doctors to get an education in a foreign university, to find a good job with the prospect of an internship abroad and, as a result, career growth.

The purpose of the research is to give definitions of the term «foreign language professionally-oriented communicative competence», to consider the ways of this competency development at English for specific purpose lessons in higher educational medical institutions.

The methodological basis of the research forms the principles of scientificity, systematicity and objectivity. The general scientific methods (of analysis, synthesis, comparative, systematization, generalization) have been used when writing the paper. The material has been presented according to the thematic principle. Comparative, typological and functional methods have been used for a comprehensive research of the topic.

Theoretical analysis of the problem of foreign language professionally-oriented communicative competence formation of future doctors leads to the definition and differentiation of the concepts of "competency" and "competence".

Special attention is devoted to the motivation as an important factor of students desire to learn foreign language. Motivation directs the student to a thorough mastery of professional disciplines, including foreign languages for specific purposes, focusing them on future professional activities.

Authors study the most potential and promising ways for developing foreign language professionally-oriented communicative competence, which are used in the educational process of higher medical institutions: internet resources, textbooks.

So, in today's global world, the importance of English cannot be denied and ignored since English is the most common language spoken everywhere. With the help of developing technology, English has been playing a major role in many sectors including medicine, so health world requires English.

**Key words:** competence, competency, communicative competency, grammatical competency, motivation, English for specific purpose, electronic recourses, textbooks.

Global integration and the development of modern technologies have significantly expanded the boundaries of intercultural communication. We have a unique opportunity to use the intellectual achievements of the world's treasury.

However, for many people these borders remain closed because of languages ignorance.

In the modern world, foreign languages have become not only a mean of international communication, but also a way to achieve a better standard of living. Without knowledge of foreign languages, it is difficult to get an education in a foreign university, to find a good job with the prospect of an internship abroad and, as a result, career growth.

Nowadays there are lots of controversial views that the role of the English language for specific purpose in the medical universities curriculum is a life skill and should be taught as a core curriculum subject like Anatomy, Physiology and other medical subjects.

The reason for this is globalization and the fact that to operate internationally future doctors will need to be able to use a lingua franca. For the next twenty to thirty years at least, that language is likely to be English. That means that English will be a core communicative skill and will need to be taught at universities.

In current economical and political situation, an expert should understand modern market requirements for the profession he or she has chosen, so should be adaptable to new social and cultural forms of global interaction. Knowledge of English as a language of international communication can help future doctors to promote their professional contacts, to study and use foreign experience in their future work, to participate in international congresses, conferences and seminars, to have internships abroad.

The aim of the research is to give definitions of the terms «competence», «competency», «communicative competency», «English for specific purpose» and to reveal the concept of foreign language professionally-oriented communicative competence, to consider the ways of this competency development at English for specific purpose lessons in higher educational medical institutions.

Research methods. The general scientific methods (analysis, synthesis, comparative, systematization) have been used while writing the paper. The material has been presented according to the thematic principle. Comparative, typological and functional methods have been used for a comprehensive research of the topic. The method of analysis has been used for a detailed investigation of the concept of foreign language professionally-oriented communicative competence to study scientific viewpoints on this phenomenon.

### **1. Theoretical analysis of the main definitions of the study: competence, competency, professional competence, communicative competence, English for specific purpose (ESP)**

Communication is terribly important, especially in a human-oriented field like medicine. If the patients speak English, doctors should learn English to be able to tell their patients when something is wrong. If the doctor and the patient can't communicate the chances of something going wrong increase. For example, if the doctor does not know the English word for «cough», «inflammation» or «cancer», he or she may say the wrong thing, so he/she cannot explain properly what is the problem and it can result in misunderstanding and some stress for the patient.



Basically, medicine is a very "people-oriented" field of learning, and in order to do well with patients, doctors need to be able to communicate clearly and efficiently.

Theoretical analysis of the problem of foreign language professionally-oriented communicative competence formation of future doctors leads to the definition and differentiation of the concepts of "competency" and "competence". These concepts are significantly different in the modern scientific literature, so it is advisable to consider them as those that have various levels and define them in different ways.

A review of dictionary sources showed that the concept of "competency" in different publications has no significant differences and means having the knowledge necessary to think about something, awareness, competence in a particular field of knowledge. The Latin dictionary interprets the concept of "compete" as to answer, to be capable, suitable, and the concept of "competentia" – as compliance, consistency [8]. According to the large explanatory dictionary of the modern Ukrainian language: competence means good knowledge of something; range of powers a particular organization or person. Competent - who has enough level of knowledge in any field; qualified, based on knowledge, with something well aware, intelligent [6, p. 445]

The concept "competence" in the broadest understanding of the word means perfect knowledge of one's work, the essence of the work performed, complex relationships, phenomena and processes, possible ways and means of achieving the stated goals. The content of competence includes the level of basic and special education, work experience, the ability to accumulate extensive life and professional experience, knowledge of the possible consequences of a particular way of influencing the individual.

It should be noted that at the present stage of development in pedagogy there is no precise definition of "competency" and "competence". Researchers define the issue in different ways. In our opinion, this is due to the fact that pedagogical science began to deal with issues of competency later than other sciences, based on the results of research in the field of sociology, psychology, philosophy, mathematics, cybernetics and others. On the one hand, the expansion of the terminological apparatus, the introduction of new categories is an integral part of the development of pedagogical science, which must not only meet the requirements of modern society, but also move ahead. On the other hand, new terms often cause inaccuracies and ambiguities in interpretation.

In the context of our study, we consider A. Khutorskyi's attitude to be decisive as he interprets the concept of "competency" and "competence" as follows: "competence includes a set of interrelated personality traits (knowledge, skills, abilities, methods of activity) objects and processes and necessary for quality productive activities in relation to them. Competency - "a person's mastery of a certain competence, which includes personal attitude to it and the subject of activity" [11, p. 141]. According to this definition, competence is a set of personal characteristics necessary for functioning in society; competence is experience in a particular field.

Adhering to a similar opinion on these concepts, I. Zymnya defines "competency" as an intellectually and personally determined experience of socio-

professional life, based on knowledge. In contrast, "competence" is considered as "hidden", a potential reserve that has not found "application" yet [30, p. 34].

In a broad sense, competence is mainly understood as the degree of social and psychological maturity of a person, which involves a certain level of mental development, psychological readiness for a particular activity that enables an individual to function successfully in society and integrate into it. In the narrow sense, competency is seen as an activity characteristic, a measure of human integration into activities. And this implies a certain worldview of the individual, the value of the activity and its subjects. Thus, competency is the willingness and ability of a person to act in any field. It presupposes the possession of a person with the appropriate competence, which includes his personal attitude to the subject of activity [30].

Thus, in our opinion, a person competent in a certain field has certain knowledge and abilities that allow him to have sound judgments in this field and to act effectively in it. We believe that it is important not to oppose competency to knowledge or skills, because the first concept is broader than the concept of "knowledge" or "skills". Thus, competency includes the traditional triad of "knowledge-abilities-skills", integrating them into a single complex. In addition, competency is defined as profound knowledge of the subject or mastered skill.

H. Kozberh, studying the problems of formation of professional competency of a specialist, identified the following essential features of the concept of "competency":

- knowledgeable, with sound knowledge in a particular field;
- erudite;
- recognized reputation in a particular field, any issue;
- experienced;
- one who has the right in accordance with their knowledge or authority to do or decide something, to evaluate something [13, p. 22].

Recently, a number of works have appeared in pedagogical science and attempts are made to generalize or detail the structure of competency. Thus, N. Borysko includes three aspects in the content of the concept of "competency":

- problem-practical aspect - the adequacy of recognition and understanding of the situation, adequate formulation and effectiveness of goals, objectives in this situation;
- semantic aspect - adequate understanding of the situation in the general cultural context;
- value aspect - the ability to adequately assess the situation, its essence, goals, objectives from the standpoint of their own and generally accepted goals [5].

There is also the opinion of a number of scholars, that the competency model has the following levels:

- competency as the ability to integrate knowledge and skills, to use it in a changing environment in which there are constant changes;
- conceptual competency;
- competency in the emotional sphere, in the field of perception;

- competency in specific areas of activity [2].

Hierarchically subordinated to the concept of "competence" is important for our study of the concept of "professional competence". The term "professional competence" appeared in scientific works in the late 80's of XX century (B. Hershunskyi [9], N. Kuzmina [16], V. Slaktionin [23], etc.).

The professional competency is defined in V. Adolf's research as readiness for productive activity, which includes the following components:

- theoretical and methodological;
- cultural;
- subject;
- psychological and pedagogical;
- technological [1].

According to B. Hershunskyi, professional competency of a teacher is the level of professional education, experience, individual abilities of a teacher, his/her constant desire for self-education, the level of creative and responsible attitude to work [9, p. 83-84].

Considering the formation of the competency of future professionals, E.F. Zeier identifies four components that should be considered in the process of preparing a specialist for professional activities:

*1. Socio-professional orientation of the individual.*

This system-forming factor includes motives, intentions, interests, inclinations, ideals; value orientations; socio-professional status; professional position.

At the university training stage the role of educational-cognitive and social activity grows. It should be taken into account that educational activities are characterized by cognitive motives, and practical activities - professional motives.

*2. Professional competency.*

Professional competency is a set of professional knowledge, skills and methods of performing professional activities and includes the following competencies:

- social and legal competency (mastery of personal and professional interaction with representatives of public institutions, including at the international level);
- special competency, which includes readiness to solve typical professional tasks, including in a foreign language;
- personal competency (ability to improve skills and professional growth, the ability to realize oneself in professional activities);
- self-competency (mastery of technologies to overcome professional deformities, the ability to self-reflection).

*3. Professionally significant psychophysiological properties.*

When determining professional suitability, psychodiagnosis of specialists is carried out, as success in many professions is determined by psychophysiological properties, and their development occurs in the process of mastering the activity.

*4. Professionally important qualities.*

Professionally important qualities are understood as individual qualities of the subject of activity that affect the efficiency and success of its mastering. Abilities are also professionally important qualities. When organizing vocational training, despite

the fact that professionally significant qualities are multifunctional, it is necessary to take into account and develop personal qualities that are important for each profession [29].

Agreeing with the opinion of many modern researchers, we believe that foreign language professionally-oriented communicative competency is an integral part of the professional competency of a modern specialist, including in the medical field. An effective means of forming foreign language professionally-oriented communicative competency of future doctors is the introduction of such a mandatory educational component as a foreign language for professional purposes.

Internalization of science, technology, education, and business has led to the worldwide demand of English for Specific Purpose (ESP). The field of ESP has rapidly developed recently to become a major part in English language teaching and research.

ESP is traditionally been divided into two main areas according to when they take place: 1) English for Academic Purposes (EAP) involving pre-experience, simultaneous/in-service and post-experience courses, and 2) English for Occupational Purposes (EOP) for study in a specific discipline (pre-study, in-study, and post-study) or as a school subject (independent or integrated). Pre-experience or pre-study course will omit any specific work related to the actual discipline or work as students will not yet have the needed familiarity with the content; the opportunity for specific or integrated work will be provided during in-service or in-study courses.

Another division of ESP divides EAP and EOP according to discipline or professional area in the following way: 1) EAP involves English for (Academic) Science and Technology (EST), English for (Academic) Medical Purposes (EMP), English for (Academic) Legal Purposes (ELP), and English for Management, Finance and Economics; 2) EOP includes English for Professional Purposes (English for Medical Purposes, English for Business Purposes – EBP) and English for Vocational Purposes (Pre-vocational English and Vocational English); in EAP, EST has been the main area, but EMP and ELP have always had their place. Recently the academic study of business, finance, banking, economics has become increasingly important especially Masters in Business Administration (MBA) courses; and 2) EOP refers to English for professional purposes in administration, medicine, law and business, and vocational purposes for non-professionals in work (language of training for specific trades or occupations) or pre-work situations (concerned with finding a job and interview skills)

## **2. Formation of motivation to study English for specific purposes**

Effective organization of the pedagogical process is impossible without taking into account the motivating factors that determine the applicant's activities, and therefore, the process of forming foreign language professional-oriented communicative competency of future doctors in higher medical institutions requires a high level of student motivation to learn a foreign language.

The issue of human activity motivation has been widely raised in the works of domestic and foreign psychologists since the first decades of the twentieth century to nowadays (K. Madeleine, A. Maslow, H. Murray, H. Allport, H. Heckhausen, R.

Weissman, P. Jacobson, L. Zankov, S. Zaniuk, Y. Ilin, D. Leontiev, and others. ). Some studies in pedagogical and methodological science are devoted to intrinsic motivation as a driving force of the educational process of students (I. Vartanova, S. Zaniuk, I. Zviagintseva, M. Lukianova, A. Markov, Y. Pasichnyk, N. Khlopkova), and students (Y. Ilin, O. Kutsevol, P. Luzin, O. Malykhin, O. Seminog, O. Yatsyshyn). A much smaller number of works is aimed at solving the question: how, what way to create a favorable atmosphere for the successful formation of this motivation within the educational process.

In modern psychology and pedagogy, despite the similarity of the general approach to understanding the motive, there are significant differences in some details and the definition of this concept. Analysis of the work of scientists allowed us to formulate a working definition of the concept of "motive". Thus, the motive is the inner motivation of the individual to a particular type of activity that is associated with the satisfaction of a particular need. We believe that the motives may be the ideals, interests of the individual, his/her beliefs, social attitudes, values [15].

According to modern psychological ideas, the category of motivation is a system of motives that determines specific forms of human activity or behavior. The classic Yerkes-Dodson law formulated several decades ago has already established the dependence of human activity, its effective activity on the power of motivation. According to this law, the higher the strength of motivation, the higher the effectiveness of activities [10].

There are different types of motives in the scientific literature. They can be reduced to two major groups partially: extrinsic (external) and intrinsic (internal, procedural). Describing these two groups, researchers (in particular, S. Zaniuk, L. Kopets, A. Markova, P. Jacobson, etc. note that internal motives are directly related to the learning process.

We agree with the opinion of researcher I. Krasnoholova that in the context of the formation of motives in the process of teaching students in higher education institutions, the question inevitably arises as to what motives should be formed. It is not just a question of finding and selecting a particular motive in order to form it, but to determine the optimal structure of the motivational sphere of the applicant [14].

A. Markova emphasizes that "learning motivation" consists of a number of motivations (needs and meaning of learning, its motives, goals, emotions, interests), which are constantly changing and entering into new relationships with each other. Therefore, the formation of motivation is not simply the growth of positive or increasing negative attitudes to learning, but the complication of the structure of the motivational sphere, the motivations that are part of it, the emergence of new, more mature, sometimes contradictory relationships between them. Due to it, the analysis of the motivation of educational activities requires not only the definition of the dominant motive, but also taking into account the entire structure of the motivational sphere of a person. Considering this area in the context of educational activities, A. Markova emphasizes the hierarchy of its structure. [19].

It should be noted that among researchers there are differences of opinion on the priority of certain types of motives for the success of educational activities.

Cognitive motives (broad cognitive, educational-cognitive, motives of self-education) are considered by some researchers to be the most adequate for educational activity.

A. Markova identifies a qualitatively unique type of motives specific to educational activities - educational and cognitive, i.e. the focus on mastering new ways of action. In her opinion, the focus on mastering the methods of educational and cognitive activity ensures the formation of the subject of educational activity. However, this does not mean that cognitive motives are always leading in the structure of learning motivation [19].

Psychological studies of the dynamics of learning motivation indicate significant changes in their personal significance and effectiveness during ontogenesis. For example, in adolescence the leading role in educational activities is played by the motives of self-affirmation and self-development, self-improvement. Despite the unconditional value of the actual cognitive motives in learning, it is impossible to abandon external social motivation. We fully agree with S. Rubinstein that direct and indirect interest in learning are so interconnected that it becomes obvious that it is impossible to oppose them purely externally [22].

In N. Bondarenko's research the broader list of motives of educational activity is allocated: broad social motives; cognitive motives generated by the educational activity itself; communicative motives, motive of participation in the educational process; motives of social identification (with parents, peers, teachers); motives of personal development (professional self-determination, material well-being); motives for success (self-affirmation, self-expression); motives for avoiding trouble [4].

According to V. Tymoshenko, the leading in the structure of educational motivation are communicative, cognitive and social motives, the most effective of which is the motive of achievement - the desire to succeed in professional activities [25].

O. Leontiev emphasizes that the teacher has the right to decide independently what kind of student motivation should be relied on in the first place - communicative, cognitive, aesthetic or playful [17].

However, the motive can be characterized not only quantitatively (weak or strong), but also qualitatively. As a rule, there are internal and external motives. If the activity itself is important for the individual (student) (for example, the cognitive need in the learning process is satisfied), then we talk about intrinsic motivation. If other needs are important (for example, the need for social prestige, praise, avoidance of punishment, etc.), then we talk about external motives. External motives also include stimuli, objective conditions of the environment in which a person is.

According to S. Zaniuk, internal (procedural) motivation is the conditionality of behavior by factors directly related to environmental influences and physiological needs of the organism. The researcher notes that procedurally motivated behavior is carried out for its own sake, it is accompanied by a sense of joy, satisfaction with one's own work [28]. With the formation of such positive motivation, students are driven by the need for knowledge, interest, desire to learn something new. This motive is also called functional, because emotional satisfaction brings the process itself [12].

Scientific psychological and pedagogical works, consider cognitive motives, motivation of achievements, the need for self-actualization, the motive of creative achievement as procedural in particular.

Cognitive motives according to A. Markova are divided into three groups: 1) broad cognitive motives, which consist in the orientation to the acquisition of new knowledge; 2) educational and cognitive motives aimed at mastering the methods of acquiring knowledge: interest in the methods of their independent acquisition, methods of scientific knowledge, methods of self-regulation of educational activities, rational organization of their own educational work; 3) motives of self-education, which are expressed in the focus on self-improvement of ways of acquiring knowledge [19].

Motivation of achievements is manifested in the ability to compete, the pursuit of excellence, the desire to work hard. The presence of the formed motivation of students' achievements is a qualitative indicator of their professional growth. It determines the desire to develop their abilities and skills and maintain them at the highest possible level in those activities in which achievements are considered mandatory. That is, this motivation directs the student to a thorough mastery of professional disciplines, including foreign languages for specific purposes, focusing them on future professional activities [12].

### **3. Formation of applicants' grammatical competency at English for specific purpose lessons**

The experience of teaching foreign languages in a non-language higher education institution shows that a certain number of students do not have the necessary level of basic grammatical skills in either oral or written speech. As language competence is an integral part of foreign language professional-oriented communicative competency, the lack of at least one of its components, such as grammar skills, hinders the achievement of the main goal - learning to read literature and communicate with foreign colleagues on professionally relevant topics. The burning problem of each teacher is the intensification of the process of acquiring basic grammatical skills by students in the relevant types of speech activity. Its relevance is reflected in one of the principles of optimizing the teaching of foreign languages in a non-language university - the principle of concentrated processing of language material and skills of its use and understanding in the speech process [24]. But to implement this principle in the practice of teaching, it is necessary to have the appropriate learning technology.

Given the above, a group of teachers of the Department of Language Training of the Dnipro State Medical University developed a technology of integrated management of operational and motivational components of educational and cognitive activities of students in teaching English grammar to students of non-language universities.

To achieve this goal, the following methods were used (according to the classification of E.A. Shtulman): analytical (psychological-pedagogical, methodological, linguistic, psycholinguistic analysis), generalizing (formalization, description, synthesis), design (prediction, modeling), interpretive explanation,

comparison, analogy), data collection and accumulation (observation, questionnaires, interviews, study of students' works, experience of learning grammar of native and non-native languages, described in literature sources), data registration (registration of student errors, timing), control and measurement sections), data processing (tabular, mathematical, statistical), verification (methodical experiment).

A very important point of this technology is that the educational material is presented on the principles of "pedagogical grammar" [7], which require special organization of educational (language) material. It is no secret that the "grammatical problems" of students that arise during speech are often associated not only and not so much with the forms of grammatical units, but with their meanings, namely, the inability to correlate the meaning of future statement with grammatical meanings of foreign languages implementing it. Moreover, some students are unable to make a semantic organization of a statement, and it is difficult for them to distinguish between concepts that are close in meaning, as well as grammatical concepts that are not represented in their native language (such as precedence or procedural action).

These are some examples of grammar exercises:

**Task 1. Fill in the gaps with the verbs in Passive Voice.**

1. *Herbarium (to organize) of dried plants.*
2. *Some herbs (to use) in cooking to flavor food.*
3. *Gardeners plant herbs in good soil that (to cultivate).*
4. *The flowers of poppies (to admire) for their delicate beauty and gracefulness.*
5. *These remedies (to prepare) in such a way that they are non-toxic and do not cause side effects.*
6. *Saffron (to pick) for its buds and flowers, fennel seeds (to use) in relishes and seasoning.*
7. *This biological function often (to discuss).*
8. *The carbon compounds (to study) by organic chemists.*
9. *Chemical bonds (to create) at the atomic level.*
10. *Chemical reactions (to produce) by electric current.*

**Task 2. Make a comparative or a superlative degree of comparisons for the underlined adjectives.**

1. *Biochemistry is important in agriculture than in building.*
2. *Colloid chemistry is the study of the behavior of matter particles that are large than ordinary molecules but small than objects that can be seen with the best optical microscope.*
3. *This function is essential of all.*
4. *This disease is severe than that one.*
5. *Given substance could be dangerous of all.*
6. *Starch is common food reserve material in plants.*
7. *Important carbohydrates are sugars, starches, and celluloses.*
8. *Proteins, carbohydrates and lipids are big classes of organic compounds.*
9. *Good temperature for enzyme activity is 40 degrees Celsius.*
10. *These herbs have serious side effects than those.*



Meanwhile, comprehension, i.e. the establishment of semantic connections of different levels in a statement, is considered to be one of the main mechanisms of speech activity. Indeed, the very fact of choosing a language structure that reflects objective semantic connections already indicates that the speaker fulfills the grammatical obligations due to the peculiarities of the language. Thus, the awareness of objective conceptual categories and inter-conceptual relationships embedded in the idea of a statement, and their correlation with the adequate grammatical meanings of foreign language tools should be the object of purposeful learning.

A prerequisite for the success of grammatical competence formation is adequately stated goals of organizing educational material. First of all, the systematization of language material should be carried out on the principle of semantic commonality. This means that it is done by analyzing a sufficient number of contextually conditioned sentences (speech situations), which provide a constant "collision" of similar concepts, as well as different concepts, for the expression of which homonymous grammatical structures are used in the native language. As a result of matching and comparing such concepts, there is awareness and establishment of the real relationship between conceptual categories and foreign language means that express them, i.e. the formation of "language consciousness". Since thinking in content is universal for all languages, these speech situations are presented in the native language.

Checking the effectiveness of teaching English grammar on experimental textbooks is carried out in the conditions of experimental training, which was conducted at the Language Training Department of the Dnipro State Medical University.

To identify the personal traits of students, a survey of first-year students was conducted, and to determine the initial level of mastery of the material to be mastered in the future, a pre-experimental test was conducted.

The questions of the questionnaire included identifying such features of the motivational sphere of students as the individual level of development of needs for achievement, dominance, affiliation, as well as cognitive needs. It turned out that only **8%** of students have a high level of need for achievement, and most of them (**79.8%**) are characterized by an average level of development of this important personality trait. Half of first-year students have a low need for dominance, while only **4.2%** of students have a strong desire for leadership. A pronounced affiliative trend was found in the majority of students (**63.3%**). The average level of development of cognitive needs is typical for more than half of students (**55.7%**).

The results of the questionnaire confirmed the relevance of learning technology that can use the existing motivational features of students and at the same time strengthen their personal qualities, the underdevelopment of which affects the success of learning negatively.

Experimental training was conducted in 10 student groups. After studying each topic, the current control test was performed.

At the end of the third semester, a survey of students was conducted in the experimental groups. Among the most eloquent results of the survey are the

following:

**95%** of students believe that they will need knowledge of a foreign language in their future professional activities;

**70%** noted that little attention was paid to grammar at school in English lessons;

**20%** of students believe that speaking and reading a foreign language is possible without knowledge of grammar;

**90%** of respondents said that their knowledge of English grammar has significantly improved at the university;

**80%** of students believe that the grammar textbooks used contribute to their progress in English;

**95%** of students positively assessed the possibility of working together in class;

Thus, actually on the basis of the first data it is possible to speak about positive effect of the considered technology both in the increasing success plan of educational activity, and in the students attitude to training plan.

#### **4. Effective ESP learning tools**

##### **4.1. ESP textbooks for future doctors as an effective means of developing foreign language professionally-oriented communicative competence**

The peculiarity of teaching English for specific purpose (ESP) in higher medical institutions is that the language needs of students are determined not only by their future professional activities, but also by current academic tasks. This means that ESP is integrated into the subject area of students' learning activities, i.e. learning combines their specialty with ESP learning. This combination has a significant motivating effect, as students can apply what they learn in ESP classes, in the study of professional disciplines, and vice versa, knowledge of a special subject has a positive effect on the ability to master ESP.

For example, to make a presentation at an international conference, the student should first prepare it in written form, which, in turn, becomes possible only after reading the relevant literature, including in a foreign language. In addition, the speech itself requires the student to have oral skills - both productive and receptive (to understand possible questions on the topic).

Unfortunately, the existing domestic and foreign textbooks on medicine in a foreign language do not fully meet this requirement, as they are based on the principles of broad specialization, i.e. on topics that give only a general idea of medicine, without more or less deep penetration into a particular field (that is valid only for the 2nd stage of training). As a result, applicants are not able to use ESP fully to study problems in their field.

Considering the purpose of ESP as teaching the language of the specialty, the teaching staff of the Language Training Department of Dnipro State Medical University tried to create textbooks in English for such specialties: "Medicine", "Dentistry".

The authors relied on two key points in developing the manuals. First, the ESP textbook should sufficiently reflect the content of the student's specialty, and

secondly, in accordance with the main principle of ESP - to be "task-oriented".

The structure of each textbook consists of units devoted to certain topics. The content of each section is determined by the task. At the same time, the teachers assumed that in the teaching of ESP, along with real-life tasks, there are so-called pedagogical tasks [31], which are only indirectly related to the problems of real life and the needs of students, and are aimed at developing their communicative competency.

Therefore, during the creation of the system of exercises, attention was paid to the means of solving professionally-oriented problems, as well as the development of speech skills. In other words, each professionally-oriented task must be preceded by work with language material aimed at removing language difficulties, so that at the stage of solving a professionally-oriented task significantly reduces the load associated with information processing, which allows students to focus on tasks content and ways to solve it. In addition, such a means of activating educational and cognitive motivation as the formulation of professionally-oriented problems is widely used.

When selecting topics for each manual, the authors used the existing qualification characteristics of specialties, as well as consulted with leading teachers of the relevant special departments of the university. Authentic texts were selected from these topics and systems of exercises were developed that would provide a solution to one or another professionally-oriented task.

For example, the English language textbook for future therapists contains texts that give an idea of the patient's examination, medical history, and diagnosis. Each section of the manual contains a main text with a corresponding vocabulary, one or two additional texts and exercises aimed at developing reading, speaking, listening and writing skills in a foreign language.

These are some examples of the tasks:

**Task 1. Look at the pictures (jamboard), name a dental emergency and tell how to deal with the problem**

*For example, when your tooth is knocked out, rinse it gently with tap water while holding it by the top of the tooth (crown). Do not rub or scrub the tooth or touch the root. Store the tooth properly for transport to the dentist.*

**Task 2. Look at the pictures (jamboard), name a symptom and tell what system of the body does it belong to.**

**Task 3. Complete the following sentences with proper words. The first letter is done for you.**

1. Local anesthesia causes the temporary loss of **s.....** in some parts of the body.

2. Uncontrolled and persistent **b.....** can occur in some patients after dental extraction.

3. Anaphylactic shock is a severe life-threatening **a.....** reaction.

4. Having completed history taking, usually a **p.....** diagnosis is established.

5. Dental **p.....** is an intense fear.

6. Pulp **v.....** test is applied to assess the state of the pulp.
7. Injectable local anesthetics create a chemical roadblock between the source of pain and the **b....** by blocking sodium channel of a nerve.
8. The permanent **d.....** is made up of four **i.....**, two **c.....**, four **p.....**, and six **m.....** in each jaw.
9. **P.....** is a colourless, soft, sticky layer of harmful bacteria.
10. The clinical signs of abscess include swollen face, permanent pain and a severe **t.....** on tapping the tooth.

**Task 4. Find 1 grammar mistake, 1 spelling mistake and 1 meaning mistake and correct them.**

1. Dentists practice the extrection of teeth in the 19 century.
2. The barber dentists pulls teeth to treating decey.
3. Fauchard has stated that shugar derivative acids are responsible for tooth development.
4. A German sientist discovered procaine which will start the era of painful dentistry.
5. The brisle toothbrush is spread from China to Europe with travellers.
6. A periodontist deals on various forms of malloclulsion.
7. The hygienist performs an operetion at 10 o'clock yesterday.
8. Maxillofasial surgeons was removing decay in the facial area.
9. The middle layer of the tooth are composed of dentine which is harder than enemel and similar to bone.
10. The 32 primary teeth begun to erapt about 6 month after birth.

**Task 5. Complete the following sentences choosing suitable words:**

1. The surgeon.....an appendectomy now.  
a) is passing      b) is performing      c) is training      d) is promoting
2. Medical students....basic knowledge during the first two years of training.  
a) became      b) pass      c) acquire      d) find
3. The lungs belong to....system.  
a) urinary      b) respiratory      c) digestive      d) vascular
4. The....is the largest and longest bone in the trunk.  
a) ulna      b) radius      c) femur      d) breastbone
5. The....contains only one large bone – humerus.  
a) foot      b) hand      c) arm      d) thigh
6. The....branches into two smaller arteries in the lower body.  
a) heart      b) atrium      c) aorta      d) vena cava
7. The blood bank encourages every....to donate as possible  
a) recipient      b) universal donor      c) transfusion      d) plasma
8. The liver excretes about 2 pints of ....a day.  
a) acid      b) saliva      c) bile      d) water absorption
9. The ....removes excess water from food as it is turned into waste.  
a) small intestine      b) large intestine      c) liver      d) pancreas
10. The blood is discharged out....  
a) of the ventricles      b) of the atria      c) of the vena cava      d) of the arteria

Most tasks are designed to work in pairs or small groups, which has a positive effect on the emotional and motivational sphere of students and thus facilitates the learning process.

In addition, the textbook includes an additional part with texts for independent work, which covers such important topics for future health professionals as "Patient examination", "Medical history taking", "Types of medical institutions", "Emergencies and life-threatening conditions", "Providing first aid" and others.

The above mentioned textbooks have been tested in the real learning process, after which the authors have made some additions and adjustments. In order to conduct the approbation phase, an experimental group (EG) was created, in which 115 people participated. Teaching English in the experimental group (EG) was carried out according to the specialized manuals under consideration.

In order to obtain a subjective assessment of textbooks, students conducted a survey. Students were asked to rate textbooks on a 5-point scale (0 to 4 points) on a number of indicators. A score of "0" meant that a certain indicator was completely absent, a score of "1" - "2" indicated that this point is available, but not always, and a score of "3" - "4" indicated a sufficient level of presence of this indicator. The results of the questionnaire indicate a better fit of specialized manuals to the needs and interests of students. Consider the most interesting data.

Thus, **85%** of EG students found that the information contained in the textbook helps them to study the professional discipline (they rated this indicator at 3-4 points). In addition, **67%** of EG students identified the usefulness of working independently with English-language professional literature. For **70%** of EG students, the texts of the textbook are accessible in their content. The rate of ease for the language perception in which textbooks are written is **53%**.

In addition, students had to evaluate the tasks contained in the textbooks. It turned out that **66%** of EG students consider the tasks presented in the textbooks as those that allow them to use the acquired skills and knowledge in interpersonal professional-oriented communication. For **83%** of EG students, post-text assignments help to better understand the important facts and details contained in the texts; only 1 student (**0.6%**) indicated the complete absence of this indicator. According to **66%** of EG students, the skills of writing an annotation of the text acquired through the textbook can be useful to them during the preparation of a research work or a thesis. 2 students (**1.3%**) from EG noted this indicator as zero.

The students of EG praised the design of textbooks. Thus, **77%** of respondents believe that the latter have a convenient structure for studying the material (division into thematic sections, subsections, etc.), and for **70%** of students graphic design of textbooks (font, highlighting semantic parts, etc.) facilitates the perception of information.

Finally, **90%** of EG students enjoy working together in FL classes, as provided in the textbooks under consideration.

Students were also invited to speak freely about the advantages and disadvantages of textbooks. The analysis of the answers allowed to generalize the advantages as follows: 1) interesting texts; 2) various tasks; 3) the vocabulary

presented in the textbooks corresponds to the specialty of students; 4) the subject of the texts corresponds to the curricula of other subjects. Among the shortcomings, EG students noted the lack of translation of new words, lack of keys to tasks, the difficulty of some texts.

In addition, an effective mean of forming foreign language professional-oriented communicative competency of future doctors is the use of authentic texts, which are textual material used in real life of the countries in which they were created. Thus, the authentic text created by native speakers is part of the information addressed to native speakers of this language and this culture. Working with similar texts in foreign language classes in a professional field allows you to optimize the process of forming a foreign language professionally-oriented communicative competency because they:

- differ in the naturalness of vocabulary and grammatical forms use, including professionally-oriented, illustrate the use of language in a natural professional context in the form adopted by its speakers;

- are characterized by the situational adequacy of the language used, i.e. the content of the authentic text is represented by vocabulary, which includes the most communicatively significant lexical units characteristic of typical situations of communication in the work environment;

- are an illustration of language tools for achieving different goals due to the variety of genres;

- have logical integrity and thematic unity;

- are able to arouse the interest of applicants and increase motivation to learn the language, because they are characterized by diversity in style and subject matter;

- are informative;

- are an incentive to discuss a variety of issues, including professional ones. [27, p.83-84].

In the process of working on the text there are three main stages: pre-text, text, post-text. At the pre-text stage, students perform exercises that promote knowledge of lexical units, grammatical structures specific to English, as well as exercises aimed at forming such components of foreign language competency as skills to choose the language form of culturally marked material and its expression depending on the nature speech act, skills of interpretation of components of verbal communicative behavior, etc. At this stage, applicants perform exercises with the following tasks:

- paraphrase this expression;

- transform the proposed grammatical form in the completed time;

- choose the words from the list that contain professionally-oriented information.

Exercises performed by students at the stage of working with the text, help students to formulate their opinion about the information learned, express their intentions and feelings, present their position, while choosing the right speech style, subordinate the form of expression to communication goals, using the most effective language tools.

Also at this stage, students should be offered tasks in which they could

communicate freely with each other, to express their views. The main types of exercises at this stage are:

- fill in the gaps in the sentences with words from the text;
- find in the text English equivalents of Ukrainian words and expressions and make sentences with them in English;
- tell which of these expressions the author would not agree with;
- cross odd word out from the line and explain your choice. Use text if necessary;
- comment on the sentences highlighted in the text. What is the meaning of the author?
- select from the list of expressions that correspond to the content of the text;
- comment on the statement
- based on the information provided in the text, report on the events covered
- imagine the situation (given by the script), choose the right solution to this problem according to the style of communication, justify your answer.

These are examples of the tasks:

**Task 1. Read the text “Chemistry” on p. 75-77 and fill in the gaps with the words from the list: *properties, alteration, occur, comprise, quantity, bond, join, particle, unique, reaction, solution, equilibrium.***

1. *All the chemical elements differ by their physical and chemical....*
2. *The ...of mercury with water may lead to very negative consequences.*
3. *Natural ...was destroyed because of government experiments with ecosystems.*
4. *This specimen is ...I have ever seen anything like this.*
5. *Two these elements have ionic ...that is why they together form a very stable complex substance.*

**Task 2. Correct the statements below:**

1. *Chemists investigate properties of the substances that make up living things.*
2. *Chemists study how chemical substances behave under unique conditions.*
3. *There are 101 elements known to exist on the Earth.*
4. *All chemical reactions involve formation or destruction of atoms.*
5. *Chemical engineering is the study of chemical composition of living matter.*

**Task 3. Match English words and word-combinations with the corresponding Ukrainian ones:**

1. <i>artificially</i>	<i>а. тверда речовина</i>
2. <i>solid</i>	<i>б. відбуватися, траплятися</i>
3. <i>destruction</i>	<i>с. руйнування</i>
4. <i>alteration</i>	<i>д. вуглевод</i>
5. <i>quantity</i>	<i>е. штучно</i>
6. <i>reaction rate</i>	<i>ф. властивість</i>
7. <i>occur</i>	<i>г. зміна</i>
8. <i>carbohydrates</i>	<i>h. кількість</i>
9. <i>behavior</i>	<i>і. темп реакції</i>
10. <i>property</i>	<i>ж. характеристика, поведінка</i>

**Task 4. Match the words with their synonyms:**

<i>1. a compound</i>	<i>a. synthesized</i>
<i>2. to contain</i>	<i>b. to change</i>
<i>3. amount</i>	<i>c. to happen</i>
<i>4. to alter</i>	<i>d. to try</i>
<i>5. a device</i>	<i>e. a makeup</i>
<i>6. to create</i>	<i>f. to live</i>
<i>7. artificial</i>	<i>g. a tool</i>
<i>8. to attempt</i>	<i>h. quantity</i>
<i>9. to exist</i>	<i>i. to produce</i>
<i>10. to occur</i>	<i>j. to include</i>

At the post-textual stage, the main emphasis is on preparing applicants for participation in professional communication in a foreign language, i.e. on improving the ability to take into account the specifics of communicative behavior when building discourse in professional communication.

At this stage, students will need to use previously acquired knowledge in new practical conditions within the collective and creative activities solving the problem situations. An example of students' teamwork is role play, which is the basis for further development of communication skills in a professional environment. As such projects are a solution, research of a certain problem with the help of additional teaching aids (the Internet, books, articles, encyclopedias, etc.), a significant number should be designed for independent work, which consists in individual search and processing of information.

Among the exercises of the post-text stage are the following:

- having studied certain information, discuss in pairs, and then write a post in social media;

- write a note to the local newspaper in which you express your attitude to a certain problem, for example: food with GMOs, etc.

Thus, the formation of foreign language professionally-oriented communicative competency of future doctors by means of authentic texts contributes to:

a) increase of communicative and cognitive abilities, and at the same time increase of students motivation to study a foreign language;

b) positive impact on the personal and emotional state of applicants;

c) ensuring the possibility of simultaneous appeal to language and culture;

Besides, Ukrainian medical students are facing a huge problem of passing new format licensing exams due to recent reforms in medical education. Based on USMLE (United States Medical Examination), a pilot project IFOM appeared to be complicated for our students. So there is a need to intensify preparing future medical specialists by means of various approaches.

Mastering specific vocabulary should be one of the core tasks taking into account the words of Greek and Latin origin. Terms rotation, using images, finding words with close meanings will help to remember necessary information.



Consider the example of the following task:

*A shepherd, who tended to the flock of **sheep** with his dogs, gradually developed pain in the chest and bloody expectorations. X-ray revealed spheric helminth **larvae** in the patient's lungs. Specify the helminth that could be the causative agent of this disease.*

First, students should find the correct answer without translation of the task. Therefore, we can evaluate their basic medical knowledge and English reading and understanding skills. After that we can translate and analyze the task. Revision of plural irregular nouns is required particularly here. A sheep – sheep, a larva – larvae, a vertebra – vertebrae, an atrium – atria, a bacillus - bacilli, a uterus – uteri etc. Students should be asked to find synonyms to the word *disease* as it used widely (illness, disorder, sickness, ailment, pathology, affection etc.)

Secondly, grammar structure is analyzed. Students can form affirmative and interrogative forms of given sentences paying their attention to regular and irregular verbs.

In conclusion, it should be said that the creation of textbooks of these types can be effective only if the authors work closely with the clinical departments of the university. Obviously, not only ESP teachers, but also teachers of specialized departments should stimulate students' need to master ESP. Such coordination of efforts will have a beneficial effect on the success of ESP students and their mastery of professional knowledge.

#### **4.2 Advantages of using electronic resources for learning English for specific purposes(ESP)**

Nowadays, a great variety of English learning tools makes it challenging to find the most effective one. However, the role of the most widely spread and useful resources for learning English belongs to the Internet. Present-day English learners do not even need to leave their homes to take English lessons - they just turn on their computer, Ipod or other device, connect it the worldwide web and have a plenty of opportunities to learn English. People are able to take English lessons on-line and absolutely free of charge; they can choose a tutor and work with him/her via Skype/GoogleMeet/Viber. We can easily download audiobooks and develop our pronunciation skills or just read English newspapers and magazines to master a living language.

Electronic publications are among the most popular means of learning a foreign language for professional purposes in medical institutions of higher education, because for many students they become more convenient to use compared to printed counterparts. In the electronic environment today there are several types of texts, which can be called books:

- electronic copies of printed publications;
- original layouts of books;
- electronic texts that are created in an electronic environment and can be fully presented in print;
- electronic texts that are created and can be fully perceived only in the electronic environment;

→ electronic texts that function in the current mode (hypertexts with the possibility of interactivity, the so-called "network literature").

In addition, in the era of mass introduction of distance education caused by the global pandemic, the importance of information technology for the needs of quality education is growing and in the new socio-communicative reality more and more attention is paid to the creation of electronic products. By combining components such as text, graphics, animation, video, audio, and more, they greatly facilitate the visual perception of information.

Due to global quarantine educators all over the world are trying to do their best to continue training process and make it effective. Nevertheless, there are lots of issues concerning on-line education.

- A lack of experience is considered to be one of the largest problems. That is why it is necessary to develop new skills using webinars, relevant articles, and communication with colleagues now and to start training educators for distance teaching after the quarantine. The educators shouldn't use on-line education as just sending and receiving home task, they should apply a great variety of methods: on-line teaching, video-chatting, conferences, quizzes, surveys, multimedia presentation, gamification, blogging, vlogging, using anti-plagiarism tools that provide feedback to writers,

- A lack of guidelines, strategies or action plan makes it difficult to work as one team. Thus, it is important to design a proper common syllabus and add it with new suggestions and ideas from time to time. On-line activities should be included into the syllabus as obligatory elements of education not only in emergency situations. Therefore, educators will be able to develop their skills and share their experience.

Nowadays, on-line teaching seems to be a real challenge taking lots of energy and time. It is stressful and exhausting as well. But we cannot make a step forward without such collaborative efforts.

Today assessment in on-line mode is getting more complicated as students have access to a great choice of the Internet resources and they can help each other in group chats while answering the questions as well to get a better grade. Actually, assessment does not concern only grading. It should demonstrate what students have already learnt, prepare them to apply their knowledge in practice, motivate them to acquire more skills in their field. That is why assessment should take different forms.

Among a variety of assessment methods there are: on-line quizzes, open-ended questions, on-line interviews, on-line polls, drag and drop activities, dialogue stimulations, game-type activities, peer evaluation and reviews and forum posts.

On-line quizzes can contain multiple-choice questions or fill-in-the blanks form. The main benefits are: a short period of time needed to do it and randomized order of questions and options.

The basic purpose of open-ended questions is to develop critical thinking of students and to make them analyze own thoughts and feelings.

On-line interview is the best way to demonstrate speaking skills and mastery of specific vocabulary.

On-line poll is a great opportunity to share own opinions both at the beginning of the session and at the end of it.

Peer evaluation helps to review each other's answers and provide feedbacks.

Applying different types of assessment makes it possible to watch students' progress, to develop teaching skills and therefore to create a new form of educational process.

From this perspective, one of the most useful resources is a podcast. A podcast is a digital medium consisting of an episodic series of audio, video, PDF, or ePub files subscribed to and downloaded through web syndication or streamed online to a computer or mobile device. Merriam Webster defines Podcast as follows: a program (as of music or talk) made available in digital format for automatic download over the Internet. A list of all the audio or video files associated with a given series is maintained centrally on the distributor's server as a web feed, and the listener or viewer employs special client application software, known as a podcatcher, that can access this web feed, check it for updates, and download any new files in the series. This process can be automated so that new files are downloaded automatically, which may seem to the user as if the content is being broadcast or "pushed" to them. Files are stored locally on the user's computer or other device ready for offline use, giving simple and convenient access to the content. As we know visual memory plays an important role in learning. It makes things easier to remember podcasts for medical students is obligatory because video podcasts extend and consolidate their knowledge in other disciplines such as Anatomy and Physiology. Playing podcasts also turns boring activities into interesting effective work and develops both and students a teacher.

Conclusions. In today's global world, the importance of English cannot be denied and ignored since English is the most common language spoken everywhere. With the help of developing technology, English has been playing a major role in many sectors including medicine, so health world requires English.

Most of the theories are written and spoken in English, even more when the globalization phenomenon has come and shorter distances require that everybody speaks the same language that allows communication and the elaboration of new perspectives and ideas full of diversity of thoughts and multiple intelligences, English will be there. A number of studies have consistently demonstrated that those who have an advanced knowledge of the English language are much more likely to advance their careers. In addition to this, these studies have also demonstrated that a strong command of the English language will lead to higher paying jobs, more social mobility, and a great deal of social success. Having a powerful command of the English language will greatly increase future doctors' odds of success.

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## **SECTION 7. LANGUAGE AND PROFESSIONAL TRAINING OF THE SPECIALIST IN AGRICULTURAL SECTOR**

### **7.1. INNOVATIVE AGRICULTURAL TERMS AS AN OBJECT OF SOCIOCOGNITIVE TERMINOLOGY**

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**Abstract.** The study of agricultural terminology from the standpoint of sociocognitive terminology is relevant. Sociocognitive terminology as a new linguistic direction develops on the postulates of sociolinguistics, cognitive linguistics (cognitive semantics) and terminology, studies the origin and functioning of the term in the social context, taking into account human cognition (naive / scientific and professional knowledge, professional communication).

**Key words:** agricultural terminology, term, sociocognitive terminology, conceptualization, categorization.

Today the meaningful task is to form language and terminology culture of agrarian students to achieve high performance in professional activities. Linguistic and terminological culture is one of the components of the professional culture of an agrarian specialist, which enables his / her competitiveness on the labor market. The most relevant parameter in professional communication is terminological competence. Extension of the system of general and professional knowledge begins with the development of special terminology. The basis of professional communication is literary language, and the most important mount is terminology.

The study of communication features of students at agricultural universities at the lexical and semantic level revealed that the main means of their educational interaction is the language of the profession, an integral component of which is terminology. Terminological vocabulary is of great importance for research and professional communication, promoting its intellectualization, facilitating the process of learning and implementing them in future professional activities, deepening students' knowledge of term concepts, features of special concepts. It is a means of expanding active vocabulary.

In order to be fluent in oral and written forms of professional communication, specialists must have a considerable active vocabulary of professional terminology. Special branch terms make up more than 82% of the professional vocabulary of a specialist, the rest is occupied by general scientific terminology and commonly used tokens.

A prerequisite for the active use of scientific and professional terminology is a rational combination of communicative approach, professional context, ability to study independently, research activities, because free understanding and reading of scientific texts requires approximately 95–85% of all terms available in professional

discourse. Terminological competence of a specialist includes the ability to freely interpret professional terms in literary language; ability to choose terms for definitions or described phenomena, processes, objects; ability to compile a glossary of terms to the professional text with the addition of explanations of terms; ability to confidently retell highly specialized texts with a high density of complex terms; higher level of mastery of terminology – terminological erudition, namely – creative approaches in professional communication – term creation, term generation; ability to choose terminological synonyms, to introduce them into the professional text; knowledge of the nuances of the use of synonymous terms in professional texts; ability to make in mind hyper- and hyponymic terminological nests, lexical and semantic groups of terminological units; ability to find antonyms to terms, knowing counter-positions, inverse processes, opposite phenomena; skills in correcting professional texts, where there may be errors in the use of terminology, their interpretation, the use of terms in their uncharacteristic meaning; the ability to impromptu professional speech, presentation, explanations with a high content of accurate and complex terminology of the industry.

Virtuoso mastery of professional terminology helps the professional to feel the specifics of rare and complex concepts, to feel the nuances and transitions from normative professional speech using standardized terminology to colloquial and everyday working speech with the use of professionalisms, as well as to use such proverbs their point of view, the assurance of the employer in the benefits of employment, etc. Terminological competence of international class specialists is also manifested in their ability to translate complex specialized texts that contain terminology, standards, specific characteristics, in general, reproduce the background professional knowledge.

Terminological literacy of the specialist helps to avoid blind tracing when translating professional literature and creating professional texts, focuses on the use of normative forms of terminological tokens and professional phraseological phrases. The study of terminology in the process of forming the communicative culture of agricultural specialists involves the implementation of a number of tasks:

- 1) providing students with theoretical and practical knowledge necessary for a sufficiently free orientation in basic concepts and definitions used in terminology and terminology;

- 2) acquaintance of students with the basic ways of creation, models, types, structural and semantic features, stylistic and sociolinguistic functions of modern terms;

- 3) teaching students the basic methods and techniques of translating terms in professional texts and in the process of professional communication, as today about 50% of translation errors are errors related to terminology.

Realization of these tasks is quite possible if we take into account the motivational aspect of learning, because today the recognized fact is that the success of professional communication is largely determined by verbal communication culture, achieving a sufficient level of which is impossible without deep knowledge of laws of formation, development and terminology.



Special terminologies (ie sets of terms of specific fields) are called terminological systems, or terminological systems. Systematic terminology is due to two types of connections that give sets of terms of a systemic nature:

1) logical connections (if there are systemic logical connections between the concepts of a certain science – and they are in every science – then the terms that call these concepts must also be systemically connected);

2) linguistic connections (although terms denote scientific concepts, they remain units of natural human language, and, accordingly, they have all the connections that are characteristic of commonly used words – synonymous, antonymous, word-forming, grammatical, etc.).

A terminological system is a system of terms in a particular field, sub-branch of scientific or technical knowledge that serves a scientific theory or scientific concept. The sources of terminological systems are terminology. But, unlike terminology, the terminological system is formed not together with the formation of a particular science, but in accordance with the stages of formation of the theory of this science. However, the terminology is not necessarily based on scientific theory. Sometimes it is enough to have just a concept or generalized ideas. There are 3 stages of formation and operation of the terminology system: 1) the transition from the absence of theory to the state of its formation, ie the transition from a disordered set of terms to a terminological system; 2) the growth of knowledge within the accepted theory due to improvements, achievements of scientific and technological progress; 3) the change in theory and, as a consequence, a change in the terminology. First, the new theory is described in terms of the previous theory, then new terms are introduced that reflect new concepts. Thus form a system of concepts of a new theory, and each place in this new system occupies a new term, and together there is a new terminology. Some of the terms of the previous terminology are left, but they are already related to new concepts. So, without theory there is no terminology, without terminology there is no theory.

The terminological system is formed at a certain stage of development of a certain branch of scientific knowledge, when a scientific theory has already been created, objects and connections between them have been marked. There are several typical features of the terminology system:

1) integrity of the terminology system. For example, economic concepts, terms together constitute a holistic terminology system, which gives us a general idea of the functioning of the economy.

2) correspondence of the sum of parts to the whole. If we are dealing with a terminological system that describes the general foundations of economic development, the terms of the market, capital, wages, wages, property relations in their entirety should give a complete description of this topic.

3) a certain constancy of the terminological system. It reflects the system of views in economic theory at a certain stage, which has a certain duration.

4) structured nature of the terminology system. The structure of the terminological system can be one-level linear and hierarchical, ie with subsystems that reflect the genus-species relations, the relationship of the whole and its parts, the

relationship of cause and effect, the relationship of objects and their features.

The active formation of the terminology of the agricultural sector took place in a not so long time and depended on its extraordinary development in recent years, which makes it difficult to establish the gradual formation of its terms, their specialization, and determine the prevalence of means of expression in certain periods. The most basic concepts of agriculture appeared long before the formation of science itself. These words came into scientific circulation as a result of terminology – a device for the nomination of special concepts. The specificity of terminology is that the semantic structure of the word undergoes complete or partial modifications due to qualitative semantic transformations. The term formed in this way in the terminology acquires its own specific features, in particular the specification and detail of the scope of meaning.

The terminologisation of most commonly borrowed tokens has taken place recently, due to the need to name the active changes that have taken place in the last decade in the agricultural sector. This process has led to a different lexical combination of borrowed words, which is manifested in the presence of a clarifying noun in the genitive case or adjective, and thus generates new terms.

One of the reasons for the qualitative development of the terminology of a certain science is the emergence of a new science on the basis of the previous one, which contributes to the constant growth of new terms, which at some stage turns into the formation of terminology of this new science. This is what led to the enrichment of the terminology of the agricultural sector with a large number of terms borrowed from these donor industries, and most of all from the economic, from which it separated. The interaction of the studied terminology and economic has the following forms: 1) the functioning of basic economic terms in industry terminology with the same meaning and without changing the semantic structure; 2) narrowing the semantics of the economic term as a result of entering the terminology of the agricultural sector; 3) the involvement of economic and special terms as structural components in combination with new semantic concretizers in the formation of terminological phrases of the agricultural sector - this is the most common form.

Reterminologisation has given rise to a diverse heterogeneous composition of this terminology, which is difficult to understand which of the basic and basic terms have fully retained their original meaning, which have been modified, and which have completely changed their original meaning and specialized.

All this creates difficulties in defining the boundaries of terminology. These are mostly innovations, but their origins and stages of development are easier and more appropriate to trace in connection with the maternal economic terminology. The terminology of the agricultural sector has a small number of own terms and it is very difficult to separate them from the general continuum due to a number of extralingual and intralingual factors.

In each terminology there is a tendency to an exhaustive representation of the concepts of the relevant field of knowledge. Due to this trend, we observe a constant process of complication and detailed development of terminology, which serves as a means of advancing knowledge. On the one hand, the tendency to save mental effort

in language is obvious: it is expressed in the formation of analytical terminological forms; in the pursuit of systematic creation of terms with the predominant use of a limited number of templates (samples); in the direction of semantic clarity (intelligibility) of terms and the development of syntactic means of formation of the term, very convenient for expressing the characteristics of the concept and explicit representation. On the other hand, there is a tendency to save expression, which is manifested in the compression of terminological forms, in the conversion of phrases into complex words, and words – in affixoids, and then in – affixes, which helps to reduce the most common forms. In terminology, these two trends of the principle of economy are realized only in the case of compliance with the requirements of accuracy (ie, expressed in terms of the maximum number of characteristics of the concept) and brevity. But even more important is the knowledge of linguistic trends in the formation of terminology, because attempts to prevent the influence of natural laws are not very effective, while their conscious use allows the creation of stable terminological systems. And all this together gives rise to the choice of the most convenient and perfect form of the term for nominating the concepts of the agricultural sector.

Therefore, terminology, given its systematic nature, is generally characterized by a desire to fix certain suffixes and prefixes of certain terminological meanings, which explains the productivity of the morphological method. To denote the same type of concepts are mostly used the same type of word-formation tools.

The terms of the agricultural sector arose as a result of the following ways of nomination: terminology of commonly used words to denote a certain scientific concept; reterminologizing the finished term of the economy; use of existing word-forming types or foreign language components to form new names. However, regardless of how the terms got into the studied terminology, they denote similar agro-economic concepts and have common linguistic characteristics.

Today, sociocognitive terminology helps to solve the problem of teaching agricultural students special agricultural terms, which studies terms mainly in human speech and mental activity as a result of cognitive, intellectual and productive activity aimed at forming special names in scientific and professional communication / discourse. The new approach forms a complete and diverse idea of the essence of the term, as it takes into account cognitive processes, categorization, conceptualization of scientific or professional reality, explores the formation of individual and collective lexicon of a scientist / specialist [4].

Sociocognitive terminology uses the following metaterms [4]:

**Concept** is a unit of mental resources of human consciousness and the information structure that reflects human knowledge and experience, operational semantic unit of memory, mental lexicon, conceptual system and brain language (*lingua mentalis*), the whole picture of the world reflected in the human psyche.

**Scientific concept** is a "quantum" of knowledge determining the intentional content of a new scientific text and is the source of its meaning.

**Scientific concept** is a multidimensional, integrative unit, nominated by the term in the relevant scientific discourse, linguocognitive education and the construct

of research reflection, which can be a source of meaningful generation of scientific text and scientific discourse.

**Scientific concept** is a concept as a result of scientific knowledge, a product of cognitive activity of scientific subjects, which is actualized in scientific discourse as a set of scientific texts.

**Scientific concept** is a concept including an objective and subjective reflection of the signs of objects of knowledge, because it also depends on the individual personality traits of the scientist, creative and emotional situation, historical conditions in general.

**Scientific concept** is a linguocognitive concept (unit of scientific consciousness) embodying scientific knowledge obtained as a result of research activities and verbalized in the subtext of science.

**Scientific concept** is meta-meaning-value, or sense-importance, relevant in specific circumstances for the subject of knowledge; it is mental "reconstruction", passed through the individual personal experience, which he acquired in a particular field of his professional activity.

**Scientific concept** is a mental category that reflects the universal scientific knowledge; in its linguistic representation it reveals the features inherent in a particular language community, which determines the specific aspects of its structure and content.

**Scientific concept** is a value-semantic constant of the term, dominant of the linguistic and mental organization of the scientific text, which is a cognitive image generated by understanding, awareness and experience of the set of features of the object of knowledge, as organized in a certain way on the basis of key terms.

**Professional concept** is a concept operated by specialists in terms of professional communication, the use and understanding of which does not require its definition due to the commitment of specialists to the specifics of the subject, joint professional thinking.

**Professional concept** is mental-linguistic structure, which is an operational unit of professional knowledge (technical, technological, expert, etc.), verbalized in the appropriate terms of the specialist.

**Terminological concept [term concept]** is a localizer of scientific / professional meanings that corresponds to common situations in the scientific / professional community.

**Terminological concept [term concept]** is a constructed concept, the definition of which resembles the definition in logic.

**Terminological concept [term concept]** is a rationally meaningful operational unit of scientific, professional, expert knowledge, which has a complex structure, complex content, broader and narrower scope, reflected in a set of categorical features that are also elements of a system in a separate segment of reality.

**Terminological concept [term concept]** is a typical cognitive structure that reflects embodied in the linguistic form of knowledge and experience of specific social communities and groups.

**Terminological concept [term concept]** is a holistic fragment of the scientific

picture of the world, a rationally meaningful concept in the structure of special knowledge, the value-semantic universe of the profession or expert knowledge.

**Conceptual sphere** is a nuclear mental sphere, which, on the one hand, denotes a limited fragment of conceptual space, and on the other, is in a relationship of departure: it may itself contain another level of conceptual space.

**Scientific conceptual sphere** is conceptsphere, which consists of concepts of different fields of knowledge and is reflected in the language in the form in which it is perceived by experts.

**Scientific conceptual sphere** is a set of scientific concepts verbalized by terms that represent fragments of cognition in various fields of scientific knowledge, formalize specific scientific and empirical material.

**Scientific conceptual sphere** of special field of knowledge is a conceptual sphere, which consists of scientific concepts that reflect the characteristics of the relevant fragment of the world, both in the concepts themselves and in the principles on which the scientific picture of the world is built.

**Professional conceptual sphere** is a multilevel sphere of conceptualization of cognition, thinking, knowledge, experience, skills acquired by a person in the process of professional activity within the social division of labor.

**Professional conceptual sphere** is a set of individual, group, universal and professional concepts with an integrative feature "professional world", which represents professional knowledge, ensures its storage, transmission and understanding by a specialist as a carrier of professional mentality.

**Professional conceptual sphere** is a macro-fragment of human cognition, which reflects the reality in a certain organized set of general and professional concepts that are in one way or another, accumulating professional knowledge.

**Conceptual sphere** is the sphere of specialized knowledge of reality in a certain segment of human activity, which unfolds in the human mind in the processes of conceptualization.

#### **Relevance of the methodology of sociocognitive terminology.**

Sociocognitive approach to the study of professional terminology, in contrast to traditional, complicates and deepens the understanding of the term. If in traditional terminology the subject of research is mainly linguistic characteristics of the term, then sociocognitive terminology is interested in the ratio of conceptual or categorical and linguistic structures in the scientific or professional sphere, features of conceptualization of scientifically or professionally significant objects.

Sociocognitive terminology considers the term not as a static unit, but as a unit dependent on the nature of professional communication. It is logical that the type of communication determines the form and content of language signs.

The new approach offers its interpretation of phenomena and processes in scientific / professional consciousness, language, society, and therefore it allows:

1) analysis of the term not only as the actual object of description, but also in the form in which it actually functions in cognition, discourse (various discourses), communication;

2) study of specific internal properties of the term – the content of the term

concept, the most significant semantic component, cognitive features – basic meaning-knowledge, meanings-values, meanings-rules, meanings-proofs, meanings-norms, meanings-ideals, meanings-beliefs, meanings -potencies, functional or role meanings, etc.;

3) analysis of the origin and evolution of special knowledge in a broad scientific and professional context and understanding of historical processes in special (scientific / professional) spheres, terminospheres, conceptspheres;

4) study of the dynamics of special structures of knowledge and their verbalization, i.e. diachronic analysis of changes in the content of the concept, terminated by the same term;

5) analysis of dynamic processes in terminological spheres taking into account the changing cognitive and communicative needs of people;

6) logical and rational analysis of term definitions, composition of term concept definition according to modular or target principle depending on the final type of terminological information consumption – universal minimum definition of term for explanatory dictionary, extended interpretation for encyclopedia, constructive specialized definition for scientific / professional definition for the situational user of this concept (e.g. website glossary), modular definition for computer terminology, etc.

The sociocognitive approach to the description of terminologies requires that terminological units be described conceptually (as conceptual structures) and categorically (as categorical networks).

The **terminological sphere** is a set of key terms, formed both as a set of units and as a very complex network of knowledge that can be represented by terminology, conceptual spheres and sets of categories and more.

The **sociocognitive paradigm** explains the laws as the terminology reflects the scientific / professional ideas about the world and deals with concepts, i.e. with logically meaningful concepts and naively or analytically distinguished categories that arise from the separation of essential characteristics of objects and phenomena or epistemologically, axiologically, pragmatically, socially significant meanings (with the leveling of other meanings).

The study of scientific or professional conceptual sphere by reproducing the processes of conceptualization and categorization gives an idea of the participation of structures of knowledge and human experience in special (scientific / professional) cognitive-discursive human activity.

The technique of conceptual and categorical modeling of the terminological sphere performs several functions: it limits the terminological array in the discourse; serves as a basis for the development of terminological networks; makes it possible to further use the term in the function of generic to build a short classification definition of this concept in the dictionary and multi-module definition in a special lexicographic source.

The most important principles of the methodology of conceptual and categorical modeling of the terminosphere include:

1) analysis of the conceptual organization of the conceptsphere by finding key

concepts and subspheres that profile the term space of a given conceptsphere languages;

2) study of diachronic development of term concept from concept or concept by establishing etymology of key concept, research of historical development of concept content by scientific / professional historical literature by choosing definitions of concept content from special texts, compiling chain of diachronic conceptualization;

3) analysis of the conceptualization of the term concept in lexicographic sources and normative documents by discursive choice of definitions and logical-rational selection of key concepts in the structure of definitions, modeling their relationships;

4) compilation of corpora of definitions, recomposition of the definition of the term concept on a modular or target principle depending on the needs of the user of terminological information, compilation of the minimum universal definition of the term for the glossary;

5) research of the terminosphere as a result of conceptualization in scientific / professional discourse (textbooks, manuals, reference books) by choosing term concepts and building models of their conceptual organization;

6) analysis of the conceptualization of the term concept in scientific / professional discourse (articles) by choosing prototype structures (in simple and common sentences) and highlighting derivatives and interpretations of sociocognito;

7) study of conceptualization of the term concept in the minds of scientists / specialists with the help of psycholinguistic experiment – coordinated and uncoordinated establishment of associative connections in mental and linguistic introspections of the scientific / professional world;

8) analysis of language categorization of primary (universal) and secondary (scientific and professional) knowledge through sets of naive and derived categories;

9) study of terminological representation of lexical primary (universal) categorization in the terminology;

10) research of terminological representation of lexical secondary (scientific and professional) categorization in the terminology;

11) analysis of the processes and results of foreign language borrowing, import of term concepts, semantic specialization of concepts, term generation and concept formation in the terminology sphere.

### **The origins of the concept of sociocognitive terminology.**

Certain concepts of sociocognitive terminology are presented in the studies of the Belgian terminologist R. Temmerman [5,6], who:

1) combines terminological meaning with communicative attitudes and human interests; emphasizes the diversity of terminological meaning and the risk of distortion of understanding of the term in terms of its standardization, fixation of one or a limited number of meanings;

2) considers the essence of the term as a linguistic, semiotic, sociological, cognitive, communicative, pragmatic phenomenon; explores the construction of the definition of the term (the degree of its detail / generalization, specialization,

selection of more significant / less significant features) depending on the target user of the term; refers to the concept as a set of cognitive categories; allocates terminology instead of artificial terminology;

3) emphasizes the importance of training terminologists who can create templates for terminological representation of professional knowledge, develop matrices for describing terms, know methods of analysis of textual corpora (professional discourse);

4) studies the perception and transmission of terms by specialists and non-specialists, analyzes the processes of term and term use in the field of natural sciences (biology, biochemistry, biotechnology, microbiology, immunology, physiology, genetics, molecular genetics, ecology, etc.);

5) analyzes the term through the prism of human consciousness, reason, erudition, competence, experience, motives, culture, profession, and therefore studies the functioning of the term in the social environment;

6) brings to a new methodology of terminology analysis, explains new principles of construction of terminological matrices, knowledge bases, software, which are based on the sociocognitive approach in terminology;

7) proves the socio-cultural conditionality of terminology;

8) emphasizes the need to study texts, discourse, analyzes the variability and situationality of term use as a cognitive potential of terminology in professional discourse, in communicative environments.

The introduction of the provisions of cognitive semantics to the general theory of the term has caused contradictions in the theoretical postulates, which were previously considered basic. Consider the controversy over key aspects of terminology, in which we observe significant differences depending on which of them the researcher adheres to.

Thus, the Belgian researcher R. Temmerman notes that the term concept is a relative category, and there are no clearly defined fields or areas of knowledge. If we take a closer look at the ideas of this provision, it becomes quite logical to deny a fixed definition of the term (it should be one for a non-specialist and another for a specialist), and the issue of term polysemy, and, of course, the dynamics of understanding and using the term.

In addition, Western terminologists offer different interpretations of the five basic principles declared by traditional terminology, including Wuster, from radical denial to the assumption that the application of a particular principle can be useful "only in a certain case."

Thus, the new paradigm led to the emergence of new concepts and concepts, which, in turn, led to some changes in the traditional theory of terminology. However, the fundamental questions still remain: what is the term, what does it mean, how does it mean, what is the limit and depth of the denoted; what is the definition of the term, how it is formed; what is reality, can it be systematized or better categorized; how the term is verbalized representation, and so on. In the same work, R. Temmerman draws parallels between the principles of traditional and sociocognitive terminology, which she presents in opposition [6]. Note that the



researcher, describing the principles of traditional terminology, uses traditional terminology in this area – the concept, logical conceptual structure, ontological conceptual structure, special definition of the term, substantive definition of the term, hyponymic term; describing the principles of sociocognitive terminology, involves the metalanguage of cognitivism – a unit of understanding (special knowledge), cognitive model, prototype structure, intracategorical structure, intercategorical structure, verbalization of information in the definition. In addition, the researcher's interpretations fully involve the views of cognitivism, which are implemented in the provisions on the prototype structure of terminological concepts, the structure of the understanding process, the dynamics of the term, the dynamic structure of the definition of the terminological concept depending on the needs of communicators.

Thus, the issues of unambiguity and related issues of synonymy, homonymy, figurative language are key in the theory of terminology, on which scholars differ. Sociocognitive terminology argues that the term can be ambiguous in synchrony and diachrony, and always changes meaning in diachrony, because the process of cognition and rethinking of reality is continuous, and therefore the dynamics of the internal meaning of the term is constant. Terms show the ability to make synonymous connections, because synonymy is an objective phenomenon that reflects different perspectives on understanding the object denoted by the term. Imagery of thinking is another important aspect that the Belgian scientist touches upon, discovering a new side of scientific interests in terminology. The field of research, cognition, interpretation of reality uses figurative thinking – moving and living, which affects the formation of terminology, which is not recognized at all in traditional terminology. Concepts of foreign and Ukrainian scholars turn to nuclear processes and concepts for the anthropocentric linguistic paradigm: studying the essence of the term through the prism of the scientist / specialist, identifying the most important patterns of terminology, formation of terminospheres in connection with generating knowledge and experience in new fields, study of professional languages (LSP), attention to the social conditionality of the development of professional languages, sociocognitive factors of term generation and term use [4]. Studies of the nature of the term in terms of cognition, sociology, ontology, axiology, pragmatics, etc. are becoming promising; properties of the term as a verbalized means of categorizing the world around (metaphor, metonymy, polysemy, synonymy, variability, etc.); the role of the term in professional cognition, in expert and professional human activity [4]. Sociocognitive approach contributes to: understanding of new, deep problems of the term, including the attitude of man to the environment and his desire to mark in language the results of scientific analysis and interpretation, as well as transformations and processes of professional activity; analysis of the process of origin of the term, identification of the current at the time of nomination "view" of native speakers on a particular fragment of reality; new understanding of the term as a dynamic unit that is born in the process of cognition (sometimes specified - in discourse), develops as knowledge deepens and becomes more or less stable as a verbalized special concept only after the formation of a theory describing the relevant field of knowledge and (or) activities; development of a comprehensive method of

terminology research, which represents modeling as a way to systematize special knowledge in conjunction with thesaurus description of terminology, sociocognitive and semantic-communicative analysis as a way to describe representations of special knowledge [4].

We compare the definition and interpretation of the term from different sources. For example, V. Ivashchenko emphasizes the following main features of the term unit within the cognitive aspect of its study [3]:

- the term represents a special concept that comes into relationship with other concepts in the general structure of scientific or professional field;
- denotes a sign that can be a dynamic piece of information within a special subject area;
- able to represent a special concept in the form of a model (template, stereotype, scheme);
- can verbalize a special concept, and a set of terms – the conceptual sphere of a field of knowledge;
- manifests itself as a means of structuring information, the transfer of special knowledge in scientific, professional texts;
- denotes cognitive structures based on the experience of a scientist, specialist, which provide a high level of understanding in professional communication;
- depends on the thematic context, the place in the system of special concepts of the industry, etc .;
- the term has a specific semantic structure.

The paper also highlights the following features of the term [3]:

- the term can encode information about different types of thinking;
- may be a kind of correlate of mental operation that occurs in the mind of the researcher;
- can have subjective properties, represent the subjective world of its creator;
- can represent different forms of organization of special knowledge: the format of the definition, hierarchy of terms, scientific concept or conceptual structure as a fragment of cognition;
- can form scientific text, scientific episteme, gnosema, frame;
- it is born in discourse and forms its meaning in the process of cognition, and only later is it fixed or not fixed during written fixation in texts, etc.

An in-depth analysis of the cognitive nature of the term was made by O. Golovanova [2], who presented the following definitions of the terminological unit:

- the implementation of mechanisms of knowledge of a field of knowledge or activity, representation of special knowledge structures. activities of specialists;
- an integral cognitive structural unit of the language of specialists, the language of professional orientation;
- verbalized result of professional experience;
- the most important mental objects of professional activity (those that have a referent and those that have an abstract nature), verbalize the logical model of a particular system of knowledge or activity and function as the main cognitive

landmarks within these systems.

Cognitive functions of the term are analyzed by M. Volodin [4; 34–36], who notes that the term is:

- a special cognitive-informational structure, which accumulates expressed in a particular language form of professional scientific knowledge accumulated by mankind throughout its existence;
- the bearer of collective professional and scientific knowledge that optimizes the cognitive and transformative activities of people;
- a kind of record of professional and scientific knowledge.

Its content is objectified in a special sense, which represents not only the object of knowledge, but also the mental process associated with it.

According to S. Mishlanova [4; 34–36], terms are language signs, the formation of which occurs in the activities of the individual and has a cognitive-discursive nature. Therefore, the laws of terminology, the essential properties, function and structure of the term as a linguistic sign are determined by the laws of discourse and the laws of development of professional language personality. It is the basic unit of science, special branches of knowledge and areas of human activity, designed to nominate objects and processes and at the same time serve as a means of learning about the world around us.

A. Lemov [4; 34–36] singles out similar features of the term, noting that the term is a linguistic unit (word or phrase) of predominantly substantive nature, which is conventionally related to the concept and subject of the professional sphere and serves to concentrate, record, store and transmit information.

V. Leichyk [4; 34–36] qualifies the term as a dynamic phenomenon that is born, formed, deepened in the process of cognition (cognition), the transition from a concept as a mental category to a verbalized concept associated with a theory, a concept that comprehends a particular another area of knowledge and (or) activity.

However, this approach seemed incomplete. The concept of a term within cognitive terminology is much broader. It not only contains certain information about a certain meaning, phenomenon, process, but also relies on a set of knowledge, experience gained by mankind.

The formation of a cognitive approach in terminology has developed a new view of the term as a representative of scientific knowledge, a means of obtaining, storing and accumulating professional and scientific information. Within this approach, the basic unit of science is considered as a verbalized result of professional thinking, because language objectifies the results of cognitive activity of people.

The study of the organization and dynamics of language categories reveals not only the complex system structure of language, but also the influence of consciousness and other cognitive structures on any structure in language and discourse. The object of research is not so much the category itself, but the inner side of mental representation, the features of structuring the immediate human experience.

In our opinion, it is important to find out which concepts (in terms of structure, content and degree of specificity) underlie the terminological nomination and contribute the most to the fixation, storage and transfer of knowledge. In the

paradigm of cognitive terminology, the term is understood as an information-cognitive structure that accumulates special knowledge needed in professional activities. In the ontological aspect, a term that functions in any subtext is a unit that arose as a result of secondary, terminological categorization and conceptualization at the "superordination level", as a result of which the subject of speech (referent) in a scientific text is a class of phenomena generalized in scientific terms, concept as a "structure of knowledge representation that reflects the content of experience" [4; 34–36].

Thus, the cognitive nature of the term is manifested in the following aspects: the term reflects the processes of cognition, conceptualization and categorization, is a verbalizer of a fragment of knowledge of various volumes, a kind of means of obtaining, storing and accumulating professional scientific information. In this regard, it can be argued that the main function of the term is to conceptualize as accurately as possible a fragment of the scientific or professional picture of the world, to categorize diverse meanings.

Sociological aspect of the study of the term until the beginning of the XXI century revealed, that the term was considered in isolation, mainly in the field of fixation. At the same time, the attention of scholars was drawn to the fact that the texts (and language), the semantic core of which was terminology, were qualitatively different from the common language. Stylistic differences between the language of universal, general literary communication and the languages of professional communication seemed obvious. One of the main ways to express or "write" a special concept are terms that are created by professionals to communicate in the process of professional activity. Let's compare the definitions of the term in which its sociological nature is actualized.

O. Golovanova formulates the opinion that the term is a verbalized result of professional thinking, a significant linguistic and cognitive means of orientation in the professional sphere and an important element of professional communication [2].

M. Volodina suggests that the terms by which specialists in a particular field communicate are special cognitive structures, frames that require appropriate behavior, dictated by specific knowledge; they are one of the main ways of linguistic expression of special knowledge. Terms are created to provide an opportunity to communicate in the process of professional and scientific activities and optimize the development of human cognition [4; 37–38].

For our part, we can offer the following observations on the social nature of the terminological unit: the term is realized in a social context; adapts and modifies in a scientific / professional context; actively engages in the practice of everyday use; is influenced by the cultural and pragmatic factor of communication; may be influenced by the economic or political context of its operation, evolve according to the needs of the community, embody information on how, by whom and under what circumstances it is used.

Thus, the term reflects the sociological aspect in the process of cognition and interaction in the scientific / professional environment, the desire of scientists / professionals to share their skills and experience with others, to pass their knowledge to students, interns, like-minded people. It turns out that the main function of this unit

is to conceptualize a fragment of scientific or professional picture of the world, categorize diverse meanings, and the main task to ensure the effectiveness of scientific / professional communication by fixing the basic properties of recognizable objects or phenomena and disclosing their most important features.

It is known that communication is a process of exchanging information (facts, ideas, views, etc.) between two or more persons, which ensures their mutual understanding. We can interpret scientific / professional communication as the use of special language tools and especially terminology, which allows to determine the functional load of terms in various communicative processes, because terminology as a separate subsystem of vocabulary provides the most important social function of language – transfer of [scientific / professional] knowledge. Scientific / professional communication involves the intensive use of terms, so now it seems quite relevant to study this unit in action, in real terms. If the set of terms, and consequently the concepts they denote, forms the basic knowledge of a field or scientific discipline, then understanding the terms that name the concept is the basis of scientific / professional communication, the main means of mutual understanding between professionals. Thus, sociocognitive terminology today is an independent field of research, which is a synthesis of socioterminology and cognitive linguistics. The subject of study are "living" processes of generation of new terminological units, term use in the real environment, selection and use of terminology in the sociolinguistic professional community, reproduction in terminology of knowledge, experience, stereotypes, professional thinking. As a result of studying the theoretical basis for the development of sociocognitive terminology, changing its issues, expanding its prospects, we concluded that a new definition of the term [4], which we would formulate as follows: the term is, on the one hand, a unit of scientific / professional language. terminological concept, which is the result of conceptualization of the scientific / professional world; language means of concentration, recording, storage and transmission of scientific / professional concepts in scientific / professional texts; on the other hand, it is a verbal representative of scientific / professional thinking, an instrument of cognition of the scientific / professional world, an element of scientific / professional communication that accumulates special experience of a scientist / specialist.

Let's consider the examples innovative terms in agriculture and their concepts.

#### **Agroecology [7].**

Agroecology can be defined broadly or narrowly. "Loosely defined, agroecology often incorporates ideas about a more environmentally and socially sensitive approach to agriculture, one that focuses not only on production, but also on the ecological sustainability of the productive system. [This definition] implies a number of features about society and production that go well beyond the limits of the agricultural field.

#### **Alternative Farming / Alternative Agriculture [7].**

These are essentially synonymous terms encompassing a vast array of practices and enterprises, all of which are considered different from prevailing or conventional agricultural activities. "They include:

- nontraditional crops, livestock, and other farm products;
  - service, recreation, tourism, food processing, forest/woodlot, and other enterprises based on farm and natural resources (ancillary enterprises);
  - unconventional production systems such as organic farming or aquaculture;
- or
- direct marketing and other entrepreneurial marketing strategies.

### **Agrobiodiversity [7].**

Agrobiodiversity "is a fundamental feature of farming systems around the world. It encompasses many types of biological resources tied to agriculture, including:

- genetic resources – the essential living materials of plants and animals;
- edible plants and crops, including traditional varieties, cultivars, hybrids, and other genetic material developed by breeders; and
- livestock (small and large, lineal breeds or thoroughbreds) and freshwater fish;
- soil organisms vital to soil fertility, structure, quality, and soil health;
- naturally occurring insects, bacteria, and fungi that control insect pests and diseases of domesticated plants and animals;
- agroecosystem components and types (polycultural/monocultural, small/large scale, rainfed/irrigated, etc.) indispensable for nutrient cycling, stability, and productivity; and
- 'wild' resources (species and elements) of natural habitats and landscapes that can provide services (for example, pest control and ecosystem stability) to agriculture.

### **Agri-environmental indicator [7].**

An agri-environmental indicator measures change either in the state of environmental resources used or affected by agriculture, or in farming activities that affect the state of these resources. Examples of sustainable agriculture processes monitored by such indicators are soil quality, water quality, agroecosystem biodiversity, climatic change, farm resource management, and production efficiency.

### **Biodiversity [7].**

At its simplest level, biodiversity is the sum total of all the plants, animals, fungi and microorganisms in the world, or in a particular area; all of their individual variation; and all the interactions between them.

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- 'wild' resources (species and elements) of natural habitats and landscapes that can provide services (for example, pest control and ecosystem stability) to agriculture.

Agrobiodiversity therefore includes not only a wide variety of species, but also the many ways in which farmers can exploit biological diversity to produce and manage crops, land, water, insects, and biota.

### **Biological Farming/Ecological Farming [7].**

Biological and Ecological Farming are terms commonly used in Europe and developing countries. Although sometimes strictly defined, e.g., Biological farming is a system of crop production in which the producer tries to minimize the use of 'chemicals' for control of crop pests.

### **Combining Data for Agriculture [8].**

Occasionally Crop Monitoring has to mash various data sets in order to get valuable insights for your fields. For a start, the user is able to compare the performance of his field with the average performance of all fields in the given district. To face this challenge, multiple datasets obtained from all of the fields in your district are compared. For now, such comparisons are only available using the NDVI vegetation index, but in the near future we will expand the analytical opportunities of the Platform by adding new indices.

The next valuable feature that employs numerous data sets is weather data analysis. It is comprised of the following options:

- “Winter kill” notifies you about low temperatures that threaten your winter crops.

- “Cold stress” highlights the days when the temperature dropped below  $-6^{\circ}\text{C}$  to assess the damage to early crops from frost.

- “Heat stress” reflects the days with temperatures above  $+30^{\circ}\text{C}$  to assess the damage from heat stress.

- The feature provides the ability to monitor precipitation and temperature as well.

### **Conservation Buffer Strips [7].**

Conservation Buffer Strips are areas or strips of land maintained in permanent vegetation, designed to intercept pollutants and erosion. Placed around fields, they can enhance wildlife habitat, improve water quality, and enrich aesthetics on farmlands. Various types of buffers include Contour Buffer Strips, Filter Strips, Riparian Forest Buffers, Field Borders, Windbreaks/Shelterbelts, Hedgerows, Grassed Waterways, and Alley Cropping.

### **Conservation Tillage [7].**

Conservation Tillage is a term that covers a broad range of soil tillage systems that leave residue cover on the soil surface, substantially reducing the effects of soil erosion from wind and water. These practices minimize nutrient loss, decreased water

storage capacity, crop damage, and decreased farmability. The soil is left undisturbed from harvest to planting except for nutrient amendment. Weed control is accomplished primarily with herbicides, limited cultivation, and with cover crops.

#### **Data From The Sky – Drones for Ariculture [8].**

With the assistance of drones farmers have an opportunity to define crop biomass, plant height, the presence of weeds, and water saturation on certain field areas with high precision. They deliver better and more accurate data with higher resolution in comparison to satellites. When they are locally operated, they provide valuable information even faster than scouts. Drones are also considered to be unrivaled aides in the battle against insects; the invasion is prevented by applying the insecticide on the hazard areas using drones, all while reducing the likelihood of direct exposure leading to chemical poisoning.

Despite the fact that drones are easy to use and are capable of collecting large amounts of data within short time frames, there are still challenges when using them on a constant basis as they don't come cheap. Drones are almost helpless where mapping or monitoring of large areas is required, and it is better to complement the technology with satellite monitoring among already mapped areas, where specific zones need to be cross-checked.

#### **Eco-label [7].**

A seal or logo indicating that a product has met a set of environmental or social standards. Labels that identify a preference for a product or service, within a specific product/service category, based on the environmental impact of the product or service throughout its life. In contrast to 'green' symbols or claim statements developed by manufacturers and service providers, an eco-label is awarded to specific products or services by an impartial third party based on defined environmental leadership criteria.

#### **EOS Crop Monitoring for Ariculture [8].**

To simplify field observation, EOS has designed Crop Monitoring – a digital Platform that employs satellite monitoring in order to speed up a farmer's decision-making so that he does not miss a crucial point of field treatment. Crop Monitoring allows the use of the Normalized Difference Vegetation Index (NDVI) for tracking crop health. This index monitors the amount of chlorophyll in plants which makes it possible to obtain information about their condition. When you have higher NDVI values, you have healthier vegetation, since the more chlorophyll available to the plant, the healthier it is.

Another important feature of Crop Monitoring is a Scouting app. It is both a mobile and desktop app that employs digital field maps. While using this app, a farmer is able to assign multiple tasks to scouts in few clicks. Add a field, drop a pin, set a task. Once the task is assigned, a scout moves directly to the selected location and checks problem areas at the site, inspects pest activity, performs weed management activities etc., immediately making records in the app. This allows inspection of the problem areas only when needed, thereby saving ample time to take necessary preventative actions.

Weather analytics. By analyzing weather data in-line with the data on plant condition obtained from satellite imagery, farmers can precisely apply irrigation and



prevent frost or heat damage. For example, one of the best methods to avoid drought issues is drip irrigation with automatic or manual valve control, thus the farmer can apply the required amount of water to dry areas.

The strongest benefit of Crop Monitoring is the fact that it is based on satellite imagery. It helps to analyze field conditions or the state of specific areas and extract valuable information on-the-fly, thereby speeding up optimal reaction time as well as making reliable decisions – what crops to plant, when to harvest, how to effectively plan for the next season, what amount of nutrients and fertilizers apply, and many more.

#### **Farmland Preservation/Protection [7].**

The irreplaceable land that produces our food and provides us with scenic open space, wildlife habitat and clean water is increasingly at risk from urban sprawl and rural subdivisions... According to a 1997 American Farmland Trust study, every state in the nation is sacrificing irreplaceable agricultural resources to urban sprawl. We are converting a total of 1 million acres a year, and while the quantity of top-quality agricultural land being lost varies from state to state, the process of conversion increases the pressures on agriculture even beyond the acres that are actually taken out of production.

Actions to reverse this trend are being taken on many levels. Tactics include focusing on policies related to property tax relief and protection from nuisance lawsuits for farmers, purchase of agricultural conservation easement (PACE) programs, special agricultural districts where commercial agriculture is encouraged and protected, comprehensive land use planning, and farm-friendly zoning ordinances.

#### **GIS-Based Agriculture [8].**

Since fields are location-based, GIS software becomes an incredibly useful tool in terms of precision farming. While using GIS software, farmers are able to map current and future changes in precipitation, temperature, crop yields, plant health, and so on. It also enables the use of GPS-based applications in-line with smart machinery to optimize fertilizer and pesticide application; given that farmers don't have to treat the entire field, but only deal with certain areas, they are able to achieve conservation of money, effort, and time. Another great benefit of GIS-based agriculture is the application of satellites and drones to collect valuable data on vegetation, soil conditions, weather, and terrain from a bird's-eye view. Such data significantly improves the accuracy of decision-making.

#### **Good Agricultural Practices (GAP) [7].**

Broadly defined, a GAP approach aims at applying available knowledge to addressing environmental, economic and social sustainability dimensions for on-farm production and post-production processes, resulting in safe and quality food and non-food agricultural products. Based on generic sustainability principles, it aims at supporting locally developed optimal practices for a given production system based on a desired outcome, taking into account market demands and farmers constraints and incentives to apply practices. However, the term "GAP" has different meanings and is used in a variety of contexts. For example, it is a recognized terminology used in international regulatory frameworks as well as in reference to private, voluntary and non-regulatory applications that are being developed and applied by

governments, civil society organizations and the private sector.

### **Grass Farming/Grass-based Farming [7].**

Grass-based production relies on pasture or rangeland to supply the protein and energy requirements of livestock. Grazing and forage feeding replace high grain diets, close confinement and feedlot-finishing during most or all of an animal's lifetime. The producer focuses on pasture plant and soil management, and proper stocking density and rotational grazing. "An acceptable level of production can be attained as the ecological connections between ruminants, the soil, and the pasture plants is naturally maintained... Pasture-based animal agriculture promotes environmental stewardship and community development owing to the following management practices:

- Use of off-farm inputs, such as diesel, fertilizer, and purchased feed, are minimized.
- Use of toxic substances, such as herbicides and soluble fertilizers, is minimized or sometimes eliminated.
- Limited tillage and use of perennial pastures, which store carbon in the soil while building soil organic matter, conserves soil.
- Water and energy resources are conserved through monitoring and appropriate technologies, such as irrigation monitoring, solar and wind technologies, and biofuel development and use, where applicable.
- Proper plant and animal genetics, such as locally-adapted pasture grasses and low-maintenance animals, are selected.
- Planned grazing systems that favor grass growth contribute to biological diversity.
- Marketing food to local communities, reducing the distance food travels from farm to plate, provisions the community with better, fresher food.
- The development of local processing plants is fostered, which adds value to local animal products while providing employment and economic development.
- A management philosophy is developed that values health in people, animals, plants, and soil.

What is the difference between grass fed and grass finished? Grass fed means the animal was fed solely on grass and hay. Grass finished is a term used to indicate that a beef animal has grown fast enough on the pasture to create inter-muscular marbling. This marbling makes the meat more juicy and flavorful but not more tender. Grass finished animals will typically grade High Select or Low Choice under the USDA Grading System. This finish can be determined with an ultra-sound scan while the animal is still alive.

### **Intensive/Controlled Grazing Systems [7].**

The term "Intensive Grazing" is meant to describe livestock and grass management practices that focus on increased levels of manager involvement, increased forage quality, increased meat production per unit area, and more uniform forage utilization. Managers practicing intensive grazing closely follow the interactions between plant, animal, soil and water. They determine where, when and what livestock graze, and control animal distribution and movement. They plan with

these factors in mind, and this attention encourages positive attitudes toward the land.

Controlled grazing is a flexible management method that balances plant and animal requirements. Controlled grazing relies on management, not technology. It uses variable rest periods, short graze periods, high stock densities, and a minimal number of relatively large herds. It requires changing the stocking rate to match annual and seasonal changes in carrying capacity.

#### **Natural Farming [7].**

Natural Farming reflects the experiences and philosophy of Japanese farmer Masanobu Fukuoka. His books *The One-Straw Revolution: An Introduction to Natural Farming* describe what he calls "do-nothing farming" and a lifetime of nature study. "His farming method involves no tillage, no fertilizer, no pesticides, no weeding, no pruning, and remarkably little labor! He accomplishes all this (and high yields) by careful timing of his seeding and careful combinations of plants (polyculture). In short, he has brought the practical art of working with nature to a high level of refinement." [Robert and Diane Gilman].

#### **Organic Farming [7].**

The term 'organic farming' did not refer solely to the use of living materials (organic manures, etc) in agriculture although obviously it included them, but with its emphasis on 'wholeness' is encompassed best by the definition 'of, pertaining to, or characterized by systematic connexion or coordination of parts of the one whole' [Oxford English Dictionary, 1971].

#### **Precise Agriculture [8].**

Promising agricultural technologies are moving into the future by leaps and bounds. They offer substantial help for farmers in their endeavour for optimizing inputs, simplifying farm management, and increasing productivity. Increased yields, as well as reduced maintenance costs, help boost profit margins. In the context of smart solutions, precision agriculture offers a Swiss army knife of farming techniques for today's, and tomorrow's farmers.

#### **Precision Farming/Agriculture [7].**

Precision agriculture is a "management strategy that employs detailed, site-specific information to precisely manage production inputs. This concept is sometimes called Precision Agriculture, Prescription Farming, Site-specific Management. The idea is to know the soil and crop characteristics unique to each part of the field, and to optimize the production inputs within small portions of the field. The philosophy behind precision agriculture is that production inputs (seed, fertilizer, chemicals, etc.) should be applied only as needed and where needed for the most economic production.

This system requires the utilization of sophisticated technology including personal computers, telecommunications, global positioning systems (GPS), geographic information systems (GIS), variable rate controllers, and infield and remote sensing. Although precision agriculture promises reduced use of chemical inputs, there are several factors that make it controversial in the sustainable agriculture community, including the requirements of large capital outlay and advanced technical expertise.

### **Regenerative Agriculture [7].**

Robert Rodale coined this term, and it subsequently was expanded to "regenerative/sustainable agriculture" by the Rodale Institute and Rodale Research Center. Two reasons given for the emphasis on "regenerative" are (1) "enhanced regeneration of renewable resources is essential to the achievement of a sustainable form of agriculture," and (2) the concept of regeneration would be relevant to many economic sectors and social concerns.

### **Satellite-Derived Data in Agriculture [8].**

Predicting yields, as well as conducting almost real-time field monitoring, with a view to detect a variety of threats with satellite data in service has never been so easy. The sensors are able to give imagery in various spectra, allowing for the application of numerous spectral indices, such as the Normalized Difference Vegetation Index (NDVI). NDVI allows for the detection of vegetation content, the amount of wilting plants, and overall plant health. Next is the Canopy Chlorophyll Content Index (CCCI) that helps with nutrient application. Then, the Normalized Difference RedEdge (NDRE) detects Nitrogen content. And lastly, the Modified Soil-Adjusted Vegetation Index (MSAVI) is designed to minimize soil background impact at the earliest developmental stages of plants; the list goes on.

### **Whole Farm Planning [7].**

Whole farm planning strategies share a conservation, family-oriented approach to farm management, although specific components may vary from farm to farm, and from community to community. Whole farm planning provides farmers with the management tools they need to manage biologically complex farming systems in a profitable manner. As a management system, it draws on cutting-edge management theory used by other businesses, industries and even cities. It encourages farmers to set explicit goals for their operation; carefully examine and assess all the resources - cultural, financial, and natural - available for meeting their goals; develop short- and long-term plans to meet their goals; make decisions on a daily basis that support their goals; and monitor their progress toward meeting goals.

Recent research reveals the qualitative swift change in agro glossary. The conceptual sphere of "agricultural technology" is represented by the terms: acaricides, alternative organic feed, arboricides, bactericides, biological plant protection products, grazing aquaculture, high-yielding goat breeding, high-tech beekeeping, restoration and repair of trees, horticulture, horticulture, horticulture genetic labeling in horse breeding, herbicides, fish aquatic organisms, desiccants, extensive aquaculture, extensive grazing livestock, entomopathogens, entomophagous, efficient livestock, zoocides, immunological plant protection, intensive care, inducers of antagonists, intensive intensifiers closed soil, intensive indoor soil, fishery introducers, feed resources of water bodies, metabolites of antagonists, microbes-antagonists, mineral fertilizers, semi-intensive mariculture, nematicides, the latest equipment of nucleus and micronucleus hives, organization of forages of forage agrocenoses, organic fertilizers, perspective resource – saving hop – growing, pesticides, polyesterism in sheep breeding, seed disinfectants, fishery reclamation, rodenticides, LED plant protection, fruit growing, t. no-till, precision farming,

precision irrigation, precision sowing, phytoncides, phytopathogens, fumigants, fungicides, chemical-technological soil science, etc.

Such terminosphere determines the allocation of relevant concepts: "plant protection products", "agroecosystem technologies", "aquaculture technologies", "beekeeping technologies", "viticulture technologies", "agricultural technologies", "fodder production technologies", "onion growing technologies", "technologies mariculture", "reclamation technologies", "vegetable technologies", "fruit growing technologies", "poultry technologies", "fish farming technologies", "farming technologies", "crop technologies", "horticulture technologies", "animal husbandry technologies" etc.

We can observe the totally different approach to term data gathering and processing. Cognitive aspect of studying the term integration processes in the science of the term, the development of sociocognitive terminology have led to something other than the traditional understanding of the nature of the term: the term does not have the properties of a clearly defined canonical unit of language, because it evolves with the development of science. In the real functioning of language, it is a contradictory unit that has "moving peace", i.e. this unit can be generated and reproduced, unambiguous and polysemous, neutral and emotional, dependent and independent in discourse, static and dynamic, and so on. In modern terminology there are various definitions of the term as a mental-linguistic unit that represents the structure of scientific / professional knowledge, contributes to the optimal organization of scientists / specialists.

In this paper we showed the new approach to consider and process terms, particularly, agricultural terms, and proved, that cognitology and sociolinguistics influence the principles of term analysis, offer a methodological, procedural, methodological apparatus related to the problems of cognition and reflection of knowledge structures in terminological units. The most important ideas are as follows:

- Sociocognitive approach in terminology allows to describe terms conceptually (as conceptual structures) and categorically (as categorical networks).
- It structures the terminological sphere as a set of term concepts, a set of primary (universal) and derivative (scientific / professional) categories, as a very complex network of knowledge that can be represented by terminologies, conceptual spheres and sets of categories and so on.
- Problems of sociocognitive terminology are grouped aspectually as cognitive (cognition, epistemology, ontology, categorization and conceptualization in modern terminology), cognitive and sociological (mentality of scientists / experts in terminology; scientific / professional terminology, terminology in social practice, professional communication, terminological planning, management of terminology, social demand for terminological products).
- Sociocognitive terminology puts forward theoretical positions, which state that the main unit of analysis in the new direction is the terminological concept [term concept]; feature of the term and its definition is interpretation of the world; sets of terms make up the terminological sphere, which verbalizes terminological

conceptosphere, categorical network, ontology of knowledge; definition of the term is dynamic in both diachrony and synchrony, it contains various amounts of information; terminological definition consists of modules of understanding; terminological definition is constructed depending on the discursive instruction and the user of terminological information; term concepts are constantly evolving.

- Sociocognitive terminology treats the term in the cognitive aspect as a representative of scientific / professional knowledge, a means of embodiment, acquisition, storage of scientific / professional information, verbalized result of scientific / professional knowledge, thinking, information-cognitive structure that accumulates special knowledge.

- New interpretation of the term in sociological aspect emphasizes its ability to transfer socially significant knowledge, scientific / professional experience, worldview, perception of social reality, ensure the effectiveness of scientific / professional communication by fixing the basic properties of objects or phenomena, disclosing their features; to activate in scientific / professional speech the meanings relevant in special communication; to correct the meaning of terms in various communicative processes, to create a platform of mutual understanding between scientists and specialists.

- Sociocognitive terminology offers a method of conceptual and categorical modeling of the terminosphere, which includes:

- 1) analysis of the organization of the conceptosphere through the discovery of key concepts and subspheres, compiling models of their relationships;

- 2) study of diachronic development of the term concept, etymology of the key concept;

- 3) research of conceptualization of the term concept by discursive choice and logical-rational analysis of definitions, drawing up of model of their interrelations;

- 4) compilation of corpus of definitions, recomposition of the definition of the term concept according to the modular or target principle depending on the needs of the user, compilation of the minimum universal definition of the term for the dictionary;

- 5) study of the terminosphere as a result of conceptualization in scientific / professional discourse by choosing term concepts and building models of their organization;

- 6) analysis of the conceptualization of the term concept in scientific / professional discourse by choosing prototype structures and allocating socio- and cognito- units;

- 7) study of the term concept in the minds of scientists / specialists with the help of psycholinguistic experiment;

- 8) analysis of language categorization of knowledge through sets of naive and derived categories;

- 9) study of terminological representation of lexical - primary (universal) categorization in the terminology;

- 10) research of terminological representation of secondary (scientific and professional) categorization in the terminology of the latest technologies;

- 11) analysis of foreign borrowings, import of term concepts, semantic specialization of concepts, term generation and concept formation in terminology.

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## 7.2. SOME ASPECTS OF SPECIALISED TEXTS TRANSLATION

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**Summary.** Although it is the most common and frequent type of translation performed nowadays in the world, specialised translation, i.e. the translation of texts produced within or referring to a specialist field of knowledge or activity, has mostly been allotted a second-rate status within the discipline of translation studies. Seen as far less creative, noble, and glamorous than its traditional counterpart, i.e. literary translation, specialised translation has been associated with rather negative features, being directly or indirectly described as an automatic, restricted, and often tedious process.

**Keywords:** specialised translation, terminology, phraseology; translating texts, specialised texts.

Nowadays transactions between countries and cultures of the world necessitate the translation of the texts and the terms from English, primarily. In this framework, professionals often need to work with translators (and vice versa) in the process of writing, re-writing, translating and editing economic texts. Translation techniques (Vinay and Darbelnet, 1995) can assist by providing some methodological tools; yet, translators often find themselves in ‘unchartered waters’, having to employ all their scientific and even artistic resources to come up with the most appropriate terms and structures in the target language. To paraphrase the traders’ motto ‘cash is king’, in

translation ‘content is king’; in other words, no technique can substitute for factual knowledge and there can be no translation without understanding of meaning. Similarly, no software can provide a ‘camera-ready’, edited document; therefore, unless the translator or writer of the target text possesses the necessary expertise or awareness of both content and context, the outcome will be not only disappointing but also potentially dangerous, depending on the information conveyed by the target text. The speed at which ‘google translate’ can create the illusion of ‘transfer’ into another language (another world, essentially) creates the false impression that translation is an easy task, available at a click of the mouse. Naturally, every modern ‘gadget’ that provides speedy solutions is welcomed with enthusiasm, especially nowadays that technology has diminished the dimension of time to such a miraculous extent. However, maturity takes time. In translation, as in every kind of writing that requires thought, creativity, inspiration, innovation, versatility, caution and, above all, thorough investigation, ‘sleeping on it’ is often the best strategy, as it may prevent errors that would never have had a chance to be ‘cured’.

The translator – even if he is simply a ‘post-editor’ with powerful translation tools at his service – is essentially a significant mediator between two cultures – and not just between two languages. This is a role which requires special skills and knowledge, particularly when it comes to technical translation, such as the translation of economic texts. According to Newmark (1988, 190), a translator’s ‘craft or skill’ is ‘the ability to follow or deviate from the appropriate natural usage’, depending on what kind of text one is dealing with. This paper presents samples from translations of economic texts, with and without the collaboration of an expert, so as to question the translator’s ‘omnipotence’ on the one hand (for those who insist on being over-confident), while it analyzes the benefits of learning to co-operate and succumb to the impossibility of ‘omniscience’, on the other. Finally, the critical question, and a vital one for the future of translators, is to what extent they will continue to attain, maintain, and, ultimately, defend a privileged and demanding level of text production amidst an increasingly receding ‘reader response’ for the sake of expediency. To play the devil’s advocate, in several cases it is not even necessary to translate nowadays; for instance, in co-authoring which involves bilingual texts sometimes it is better and easier to ‘paraphrase’ and adapt information. Yet, it is this process of paraphrasing that requires even more skill and craft, as it is solely based on the translator’s art and knowledge, far from machine translation and word counting, which are usually associated with translation per se. On the other hand, this is exactly what makes paraphrasing so attractive: its wider ‘affordability’ than the demanding process of translating, to the extent that anyone thinks they can ‘try it for themselves’.

1. Technical translation: a different need for ‘faithfulness’. Translation began to gather momentum as an episteme (science) after the 1960s (Nida, 1964), when academics started to relate it to other scientific fields, such as linguistics, and the first theories were formulated in an attempt to provide a framework illustrating the basic parameters involved in the process of transferring or ‘carrying across’ (from the Latin *translatum*) the message (Kasperek, 1983, p.83 ); in other words, rendering the meaning of a text from the source language (SL) to the target language



(TL). Despite, however, this ‘epistemological’ approach, and the problematic involved in the dispute between verbatim (faithful, word-for-word) translation and the linguistic alternative favoring the creation of equivalences, the practical aspect of this process verifies that it is primarily an art. This is because of its resemblance to ‘a gigantic crossword involving a huge number of tiny decisions’ – according to the British playwright and translator Christopher Hampton (Anderman, 1998, 39) – that the translator needs to take every single moment, necessitated by the linguistic and cultural differences between languages. When the moment of ‘building’ the new text comes, even if translation were an ‘exact science’ – which it is not, and sometimes it even calls for ‘intuitive leaps’ (Robinson, 1997, p.92) – scientific principles could not possibly get the job done; yet, they would help the translator by playing the role of a reliable compass that can guide him/her along or across the finite choices (Kentrotis, 1996, 379) of the paradigmatic and syntagmatic axes, respectively.

As a consequence, a translator’s creativity plays a catalytic role in relation to the quality of the text produced in the target language, as he often has to ‘invent’ equivalences and make the right choice of both word and word order. Byrne (2010, 26) argues that instead of translation we should nowadays use the term ‘interlingual technical communication’, and not simply ‘technical writing’ but even text ‘re-engineering’, depending on the skopos of the target text, as this is often the best approach in the process of creating a new document of technical nature rather than staying close to the source text (as is the case with literary works, in which style, paralinguistic and extralinguistic features have also to be considered). Furthermore, it is important to maintain consistency when translating technical texts, using the same term in order to avoid misunderstandings (cf. Sim and Pop, 2012, 156). In contrast, the ‘signifier’ (Saussure, 1983) can vary in the case of literary texts, and the translator has the flexibility to use synonyms in order to avoid repetition, given the significance of ‘fluidity’ and the aesthetic parameters characterizing literary texts. Although, therefore, it is possible to use different words (synonyms) to render the concept (or ‘signified’) ‘beautiful’ (e.g. when describing a sunset: wonderful, exquisite, unforgettable, majestic, etc.), the need to be exact when translating economic, legal and, generally, technical texts necessitates the use of the same term in a consistent way. In other words, adopting a ‘literary’ approach in technical texts can only create confusion, instead of adding flavor and innovation to the target text. It would be annoying to start a presentation about ‘start-ups’, then start using the term ‘newly-born businesses’ (either interlingually or intralingually), and after that, erroneously perceiving ‘variety of style’ as a requirement that calls for summoning up one’s ‘innovative’ powers, turn to a term such as ‘recently-launched business ventures’ or even ‘new endeavors in the entrepreneurial field’, and so on. On the other hand, it would be unacceptable to use the word ‘nice’ repeatedly in a literary target text (unless the author of the source text intentionally meant to do so). Non-fiction requires uniform and clearly comprehensible terms and equivalences in the target language. Therefore, although it is not a critical error to use the terms ‘Euro-area’ and ‘Eurozone’ interchangeably (cf. Gikas and Tagkas, 2010), it would be completely wrong to translate ‘DTL’ as ‘postponed’ or ‘put off’ ‘obligations’, ignoring the need

for consistency while, in the meantime, ‘drowning’ in the sea of synonymous signifiers. It is for that reason that quality control should involve the co-operation of a translator with an expert in the relative field (i.e. economist, accountant, lawyer, etc.) before the final ‘product’ is submitted to the client. In other words, if the translator aims to act as a reliable ‘target-language writer’, he/she sometimes has to ‘ask experts’ – or the client, the author, and anyone who can play the role of an experienced ‘sourcelanguage reader’ (Robinson, 1997,164), whenever the translator encounters difficulties in acting out both roles.

In several cases, the foreign term is used within parentheses, so as to ensure that the term or equivalence used in the target text is recognized, as it may be a neologism that has unsuccessfully been introduced in the target language. For instance, ‘backwards tracing’ was given in brackets in the process of writing a research paper, as a ‘guarantee’ that the (unavailable) ‘equivalent’ in Ukrainian (an explanation or definition, actually) is identified, taking into account that less spoken languages do not always have a widely recognized translation of all current terminology that is constantly created in and around Wall Street.

2. Case study: translation of economic and accounting texts from English into Ukrainian and vice versa. Undoubtedly, ‘faithfulness’ should rather be viewed as the consistent use of terminology than a process of word-for-word translation paying allegiance to the source text. It is therefore necessary to use the same term, both when technically rewriting (or post-editing), and in the initial process of translating an economic text. At the paradigmatic level, instead of editing the technical text in order to ‘embellish’ it (as would be the case with a literary text, trying to eliminate repetition of similar words), post-editing a technical text requires the reverse process, as the translator needs to make sure that the same sets of words or expressions – ‘terms’, which have a different meaning in specific contexts than in normal, everyday usage – are used consistently (albeit repeatedly) in the target text. Although this is a task that an experienced translator can easily accomplish in his/her own, it is during the actual process of selecting the appropriate terms or ‘engineering’ new equivalences – or even modifying and adapting parts of the source text – that collaboration with an expert proves to be valuable. As the knowledge of content is a prerequisite for the creation of a target text that ‘makes sense’, an economist’s contribution can guarantee and confirm the comprehensibility (and ‘validity’) of the target text. The following examples, ranging from blatant errors to minor mistakes, have been gleaned from three different categories: a) papers co-authored by an economist and a translator with experience in economic texts, b) translated, edited and even re-written papers, first from English into Ukrainian and vice versa, and c) a student’s graduation thesis, tutored by a supervisor experienced in economic terminology:

a) Translating ‘book-tax gap’ as ‘gap of a tax-book’ when the studenttranslator chooses to be ‘loyal’ to machine-translation, baffled by unusual word combinations. In that case, the supervisor’s feedback is essential in explaining the difference (gap) between a company’s ‘taxable’ income and its ‘financial’ (pre-tax or ‘book’) counterpart. Similarly, the kind of problems polysemy can create is

reflected in ‘record’ (in ‘Greenspan’s record’) that has erroneously been translated as a ‘process of recording’ (verb), rather than ‘breaking a limit’ (noun), while ‘associates’ (a noun referring to associated firms) has often been translated as a verb, thus creating problems at the syntagmatic level, too, and leading to further errors in the process of translation. Ironically, though, one of the characteristics of economic terminology is actually its lack of ambiguity, as connotations do not play an important role (as in literary translation, for instance) and an experienced translator should not encounter insurmountable problems in that respect. This, however, does not mean that we do not have economic terms with more than a single meaning (in a general vs. a technical context), and this can create problems, especially when certain new terms and processes may be unknown in the target economic system and, hence, in the target language, as well.

b) Another common error is related to mistaking a term for its normal, every-day meaning. For instance, words like ‘supply’, ‘share’, ‘security’, ‘notes’, ‘interest’, ‘subsidiary’, ‘branches’, ‘constitutional’, etc. can sometimes be misinterpreted, while they have a special meaning in an economic context.

c) The expression ‘golden parachute’ (signifying the money or other benefits an executive is going to receive if his/her contract is terminated) is literally translated into Greek, but although it is neither necessary nor helpful to use the English term, the latter is often used in quotation marks (to emphasize its metaphorical meaning) and may also be accompanied by some explanatory remarks (Ayers et al., 2011,18). In contrast, the expression ‘golden boys’, which has become popular during the economic crisis, is used as a loan (in English) and has derogatory connotations that both newspaper readers and TV viewers have become familiar with. On the other hand, ‘lobbying’ describes a strategy that cannot be rendered verbatim, while providing the English term can certainly illustrate the kind of ‘pressure’ or ‘diplomacy’ it signifies.

d) Very technical terms (e.g. ‘mark-to-market’, which means ‘valuing assets at their current price’) often remain untranslated, ‘borrowing’ the foreign term, while in other instances a tentative translation (more like an explanation, or definition) is followed by the original term, as already explained. The same happened with the term ‘revaluation effect’, which refers to the expected impact of asset revaluation on net income (due to a tax rate increase); here, the English term also follows the translation.

e) While in English-Ukrainian translation collaboration with an expert can help to delineate whether there is an identical comprehension of meaning, it is the process of reverse translation (from Ukrainian into English) that requires a ‘verification’ process so as to technically rewrite the original text in the target language, especially when, as in the process of writing a research paper, ‘faithfulness’ to the text in the source language is by no means necessary or recommended. The flexibility, therefore, to deviate from the original wording (excluding the relevant terminology) allows for ‘maneuvering’ in order to ‘fine tune’ the meaning that the economics (or accounting) expert intends to communicate to the target reader.

f) During co-authoring, as is the case when translating with the

collaboration of an economist or accountant, instant feedback is provided with terms like ‘optimum currency area’ (Gikas, Hyz and Tagkas, 2013,10). And even when the translator’s knowledge of the equivalent term does not entail comprehension of its meaning as a concept or its economic connotations, a definition or explanation can be readily available: ‘an area characterized by flexibility of prices and wages, labor mobility, and a system of financial transfers from a federal budget’.

3. ‘Rewriting’ as the next phase of translating. The translator is traditionally viewed as the person who faithfully and obediently undertakes the role of an intermediary. What happens, however, when he/she is required to collaborate with the ‘client’ (who, in this particular case is an expert) and do so repeatedly, until the final text is engineered in the foreign language. In the case of a research paper, translation is not actually the issue and a ‘faithful’ translation is of no use if ‘technically rewriting’ the original text produces significantly better results. Taking into account the above-mentioned options, a translation of an article from Greek has been reduced to a much smaller number of words, as other issues, related to clarity and structural balance (coherence and cohesion) need also to be considered when writing a brand-new text in the target language – rather than awkwardly and meaninglessly having to translate a text from the source language (something that can certainly hold true for the first draft, though, before embarking on the challenge of ‘interlingual technical writing’). The following examples illustrate the modifications that preceded the formation of the final texts in a series of translation and subsequent collaboration sessions between a translator and an expert in accounting and finance.

a) Abstract writing: What if the article is submitted to a journal and reviewers suggest a different approach or minor corrections? This is an instance when extension of the collaboration with the translator is necessary. In other words, the initial aim of the translator – not because of his own lack of skills or knowledge – has not been achieved yet. In this case, the translator needs to adapt the text to the new requirements while at the same time helping the author of the source text to cope with the difficulty of understanding and taking into account the reviewer’s comments and suggestions. Even worse, this continuous process may involve translating (or, simply, explaining or even summarizing) into the ‘client’s’ language in order to determine whether it would be possible to continue working with the target text or should focus again on the source text (or even go back and forth, as proves to be the case when the client has not even a limited knowledge of the target language).

b) Content writing: Even in the case of collaborating with an expert with a limited knowledge of English, co-operation was constantly required on the translator’s side, as well, when difficult terms had to be discussed and sentence modifications had to be made in order to engineer a scholarly paper with the appropriate terms but also the necessary coherence and cohesion. This corroborates the argument that even an explanation in the source language can be quite helpful, as it provides the necessary context (and content) for the translator, who can proceed to render in the target language the meaning that he has now grasped, using of course the appropriate term and incorporating it into the text he obviously has the ability and skill to create as a language expert. For instance, terms like ‘revaluation effect’,

‘intra-period tax allocation’ or ‘CDS’ (Credit Default Swaps), ‘options’, ‘hedge funds’ (which some Ukrainian dictionaries translate as ‘mutual funds’ – a more general category – failing to explain that their purpose is to ‘offset risk’) often need some sort of ‘intralingual’ translation, as stock market jargon is difficult to decipher without comprehending the processes it describes.

c) Terminology: The expert’s knowledge of content proved to be valuable in helping the translator with pragmatic elements and explaining complex issues related to accounting processes that the translator would find it difficult to render otherwise. For example, the transition from Greek GAAP (Generally Accepted Accounting Principles) to IFRS (International Financial Reporting Standards) was followed by the introduction of new terms, as was definitely the case with the recent Memorandum and the subsequent PSI (Private Sector Involvement); a term which has been literally translated into Ukrainian but is much more clearly known – and comprehended – as ‘haircut’. Pragmatically speaking, it refers to the write-down of 53.5% of the amounts owed to private creditors holding Greek government bonds (GGB). In the same vein, differences between synonyms like ‘devaluation’ (official lowering of the value of a country’s currency) and ‘depreciation’ (decrease in a country’s currency due to market forces) are sometimes baffling dilemmas for a translator, in contrast to an economist.

d) The translator’s research: A last but equally important point that has to be made is that the translator is ‘the final incumbent’, so to speak, and is therefore obliged to carry out his/her own ‘investigation’ into ‘facts and figures’, despite the assistance that he may be receiving during the process of translating and writing. This is because, firstly, even experts can make mistakes with terminology but, worse, pragmatic elements may be incorrectly reported. In that case, the translator is responsible for tracking down such possible inconsistencies and fixing them, as in the end he/she will definitely be held responsible for not doing so. For example, what if the author of the source text misreports the name of a major organization (or a bank, or an official)? If the translator takes that for granted and incorporates it in the target text without having first conducted his/her own research, that is certainly a ‘cardinal flaw’ in the required quality control that should precede the final draft of every (and not just technical or economic) translation.

The (technical) translation of economic texts is a demanding process, requiring accuracy – and even exactitude. Therefore, consistency is a prerequisite, as the uniform use of terminology eliminates misunderstanding, but there is also scope for creativity and flexibility in the process of ‘building’ the target text. Finding or creating the proper equivalences, employing the appropriate syntactic or grammatical structures, and collaborating with an expert that has knowledge of the field can lead to a professionally written and edited text in the target language that ideally would not ‘reveal’ its identity as a translated text from the source language. Given the vast heterogeneity in the field of ‘economic translation’, translators cannot pretend to be the know-it-all experts, in the same way that experts cannot become linguists, translators and language engineers. The former possess the art and craft (the skills and ‘tools’, in other words), while the latter can provide perspective and help with

difficult ‘spots’ at the paradigmatic level, mainly. Although translation is often a ‘misinterpreted’ science (or/and art), it is vain to defend against a potential usurpation of its field by non-professional practitioners who possess a sound knowledge of terminology (or even the ‘special’ language of economics) – but who, nevertheless, cannot guarantee that they will be able to integrate it in a seamless way with the ‘general’ language that is the greatest part of even technical texts. The special language cannot exist without the normal, everyday language (Arnzt and Picht, 1982, 24), which is the vehicle that can convey meaning by forming comprehensible sentences.

As a relay team can run 400 meters faster than an individual athlete, we need to think as teams, too, and learn to ask for feedback, find out pragmatic elements that are essential in attributing the correct meaning to a term or an utterance, and collaborate both during translating (or, simply, ‘re-writing’ in the target language) and during the phase of post-editing (especially if machine translation has been used) in order to be able to achieve the best possible results and create a target text of ‘publishable’ quality. As Robinson puts it, an experienced translator ‘has a better sense of when it is all right to admit ignorance’; and doing so ‘is not only acceptable without loss of face, but a sign of professionalism’. Finally, both translating and paraphrasing require the scientific analysis that sets limits even to a professional translator’s ‘galloping craftsmanship’ in a concrete and universally acceptable way. That knowledge, paired with skill and experience, is and will remain irreplaceable, because it is not the product of a momentary fascination with the source text and subsequent inspiration; it is the outcome of a long and serious process of ‘toil’ (Kasperek, 1983), coupled with sensitivity and accountability.

Although in recent years the literature on specialised translation has grown significantly and non-literary translating seems to have reduced some of the distance that separates it from its traditionally upper placed rival, some researchers are still noticing the slight disdain with which specialised translating is treated within the discipline. In one of the few books dealing specifically with non-literary translation, Byrne notes that technical translation “has long been regarded as the ugly duckling of translation, especially in academic circles. Not particularly exciting or attractive and definitely lacking in the glamour and cachet of other types of translation, technical translation is often relegated to the bottom division of translation activity and regarded as little more than an exercise in specialised terminology and subject knowledge (2006, 1). The appeal of literary translation among translator trainees is motivated, at least in part, by the second-rate status that seems to have been allotted to specialised translation within the discipline of translation studies itself. It is common knowledge that most of the early reflections about translation have focused mainly on the translation of literary works (understood here as including religious, philosophical or rhetorical writings): Cicero’s and Horace’s thoughts on translation, the views of various Bible translators (St. Jerome, John Wycliffe, William Tyndale, etc.), Etienne Dolet’s or George Chapman’s ideas on the translation of the Greek masters or John Dryden’s preface to Ovid’s *Epistles*, to give but some examples. As shown by Bassnett in her chapter on the *History of translation theory* (1992, 39-75),

the sharp focus on literature continued in the centuries that followed, with other writers and translators – e.g. Alexander Fraser Tytler, August Wilhelm Schlegel, Friedrich Schleiermacher, etc. – sharing their thoughts on translation within a literary context. For a very long time, translation reflection behaved as if non-literary translation did not even exist. In 1972, when translation studies had just begun to develop into a scientific branch of knowledge, Holmes noted that “there had been longstanding efforts to produce theories for the translation of literary or sacred texts, but that attempts to develop theories for the translation of scientific texts were relatively new” (qtd. in Olohan, 2009, 249).

The lack of genuine interest in the non-literary aspects of translation fostered the rise of a biased and stereotypical view of specialised translation. Whereas the translation of literature has always been associated with high levels of creativity and certain liberties taken from the source text, specialised translation was allotted an inherently lower status and deemed to be “easier”, “restricted”, “machine-like” and even “humdrum”. In the early 20th century, in his famous essay *The Misery and the Splendour of Translation*, Ortega y Gasset mentions scientific writings and argues that due to their terminology “(...) *these books are easier to translate* from one language to another. Actually, in every country these are written almost entirely in the same language” (2004, 51). Moreover, the Spanish philosopher clearly associates non literary production – and thus non-literary translation – with inherently negative or, rather, non-positive features when he says that he has based “the utopianism of translation on the fact that an author of a book – not of mathematics, physics, or even biology – is a writer in a positive sense of the word” (2004, 51).

Byrne also tackles some of the common misconceptions about technical translation (a type of specialised translation, in my view), among which he lists: that it presumably includes law, economics, business; that it is all about terminology; that style does not matter in technical translation; that it is not creative, but simply a reproductive transfer process; that you need to be an expert in a highly specialised field in order to perform it, or that it is all about conveying specialised information (2006, 2-7). Some of these misconceptions will also be discussed further on in this paper.

#### The Scope of Specialised Translation.

Technical translation is often taken to include translations performed in such diverse fields as law, business, religion, politics, etc. In fact, in the literature, technical translation and specialised translation are sometimes treated as synonymous. Aguado de Cea & Álvarez de Mon y Rego provide the following definition to the former concept: “technical translation refers to the process of translating those texts belonging to what are called specialized languages and is usually classified along with other varieties such as legal translation, scientific translation or the translation of medical texts” (2004, 289). More than taking technical and specialised as synonymous concepts, this definition seems to enhance confusion, since, apparently, it implies that legal, scientific, and medical translations do not deal with specialised languages and are not “technical”. In the following definition, the word “technical” refers to virtually any field: “Technical translation

(...) covers the translation of any material belonging to a particular area of knowledge, technical field or technology (e.g. mechanical engineering, hydraulics, electrical engineering, business management, etc.), providing the materials require special knowledge of the area involved” (Gouadec, 2007, 30). According to another view, technical translation is a sub-species of specialised translation. As Hann explains, “to avoid confusion the expression specialised translation is reserved for the superordinate concept. In turn, Byrne stresses that “simply because a field or subject area has unique or specialised terminology does not make it technical technical translation deals with technological texts, or, more specifically, technical translation deals with texts on subjects based on applied knowledge from the natural sciences” (2006, 3). It should be noted that the word “technical” does not mean exactly the same thing in these authors’ views. Moreover, the exact nature and extent of specialised translation remains unspecified in these two definitions. So, what is the scope of specialised translation?

Traditionally, specialised translation has been defined drawing on the dichotomous pair *general language* vs. *specialised language* or *language for general purposes* vs. *language for special(ised) purposes*. According to this view which is overtly or covertly present in all the definitions quoted above whereas general translation deals with general language, specialised translation tackles a wide array of specialised languages, e.g. the language of computer science, the language of law, the language of medicine, etc. LGP/LSP-based definitions are problematic for at least two reasons. On the one hand, the concept of general language is too large and fuzzy to yield satisfactory applications, making it hard to define “general” translation, as the following definition – which, contrary to generally accepted rules, uses only negative terms – clearly proves it: “general translation refers to the translation of documents and materials that do not belong to any specific type or domain area, do not belong to any particular type, do not entail a specific translation process or the use of equipment beyond an ordinary computer and word processor” (Gouadec, 2007, 27). For instance, should the language used in (and the translation of) a newspaper article on a new technological product be seen as general (medium of publication and intended readership) or as specialised (by the use of a particular terminology)? Should translating a company memo (specialised sender) that announces a new work procedure (general information) be seen as general or specialised? Should the translation of movie subtitles (general topics) be seen as general or as specialised?

In recent years, however, the literature has apparently left aside the LGP/LSP distinction and seems to have embraced *a twofold, both text- and field-based view* on specialised translation according to which there are virtually just as many specialised translation types as there are specialist knowledge areas or activities. This seems to be the view put forth by the *Routledge Encyclopaedia of Translation Studies* (Baker & Saldanha, 2009), where there is no definition of specialised translation per se, but there are several entries on *commercial translation*, i.e. a term “intended to cover the translation of all texts used in business contexts, excluding technical and legal texts” (Baker & Saldanha, 2009, 41), *institutional translation*, i.e. “translating *in* or *for* specific organizations” (Baker & Saldanha, 2009, 141), or *scientific and technical*



*translation, i.e.* “the translation of texts from the domains of science and technology” (Olohan, 2009, 246), etc. It is worth noting that none of these definitions mentions specialised language as a defining factor.

According to the perspective adopted in this paper, *specialised translation deals with any text produced within or referring to a specialist field of knowledge or activity, regardless of its intended readership or purpose*. From this viewpoint, all of the types of translating mentioned in the questions above could be safely seen as specialised, owing to their topic (technology in a newspaper article), their producer (a corporate, specialist producer in the case of a company memo) or the specialist activity within which or whereby they are produced (movie subtitles). Otherwise put, specialised translation may be defined as the translation carried out in a specialised context, *i.e.* a context which involves specialist source-text producers, specialist topics, or a specialist activity.

**Dealing with Terminology – a Challenging Task.** Coming back to the issue at hand, paradoxically, the most conspicuous aspect of specialised translation – *i.e.*, its having to do with specialised terms – is one of the main causes that have seemingly led to its relegation to a status of “low-grade translating”. For instance, it is based on terminology that Ortega y Gasset explains why scientific translation is an easier task than literary translation: “if we ask ourselves the reason certain scientific books are easier to translate, we will soon realize that in these the author himself has begun by translating from the authentic tongue in which he ‘lives, moves and has his being’ into a pseudolanguage formed by technical terms, linguistically artificial words which he himself must define in his book. In short, he translates himself from a language into a terminology” (2004, 50).

Showing that terms in general are not “linguistically artificial words” or that terminology is not a pseudolanguage separated from actual language is not within the scope of this paper. Suffice it to say that Ortega y Gasset’s view is not singular. In a more recent paper, Gómez González-Jover stresses that “in translation, it is specialized terms that pose fewer problems to the translator, and, moreover, they are often documented in specialised dictionaries, glossaries or scientific and technical texts, and they can even be standardised”. Although many scholars seem to believe that translating specialised terminological units is basically a straightforward, almost automatic process, which requires nothing more than matching the terms in the source text with their dictionary equivalent in the target language, any translator with some practical experience in specialised contexts knows this is far from the truth.

In fact, dealing with terminology in specialised translation is quite often a challenging task and may require much more effort and creativity from the translator’s part than meets the eye. To begin with, the belief that a multilingual dictionary or a terminological database is all you need to deal with specialised terminology is questionable for at least two reasons:

*Multilingual dictionaries and terminological databases do not cover every possible field of knowledge and activity.* Although this may not be immediately apparent in countries with a long lexicographic and terminographic tradition, where both monolingual and multilingual dictionaries/terminological databases for the

technical, legal, medical, business, etc. fields are relatively common and easy to find, this reality is particularly challenging in countries where even these well-established domains are not well covered – or not covered at all – by multilingual terminological work. Many niche or lesser developed areas of knowledge do not benefit from terminographic work at all, regardless of the language in which they emerge. In all these cases of terminologically undocumented fields, translators need to embark on a difficult quest and find on their own, through their own research, the conventional translation (if any) of the source terms in their target language.

*Dictionaries and terminological databases do not include every possible term.* As comprehensive and accurate as they might be (at least in the countries where they are created, maintained, and constantly updated), there is only so much that dictionaries and terminological databases can do. Being limited repertoires, they cannot claim to encompass all instances of language in use or everything that happens in actual texts. Moreover, they are by nature unable to keep up with all the innovations made in a particular field of knowledge. In their work, specialised translators may (and often do) come across *neonyms* – terms that are neologisms, new creations in the source language – and may have to try and find the best solution to introduce them into the target language. This is where their linguistic creativity plays a part as well. Besides these misconceptions about the almighty powers of multilingual dictionaries and terminological databases, some confusion surrounds the translation of terms themselves. Despite the common view that a source term and its translation are usually linked by a one-to-one relationship, sometimes there is not just one available translation for a source term. Although, in theory, terms are supposed to be monosemous and cover just one concept in a given field, in practice many terms are polysemous and may require different translations for each of their meanings. To give but an example, the *The Whatis?com Encyclopaedia of Technology Terms* lists no less than four different meanings of “glitch” in this field: 1) a momentary power failure; 2) any temporary loss of service in the network; 3) a bug that is not encountered very often; and 4) a quick temporary noise in a file that sounds like a “snap”. What is more, even in the absence of standardisation, the accepted translation of a term may also change in time, due to various reasons, and this is also a phenomenon that dictionaries are not always able to capture. In Romania, when information technology and its devices were just beginning to take hold, the most common translation of the English term (computer) “icon” was “iconiță” (little icon). Nowadays, this translation is starting to become obsolete and less and less used, being steadily replaced by “pictogramă”.

Moreover, specialised texts are not mere lists of specialised terminology. As far as terms are concerned, specialised texts often encompass (near) synonym series, paraphrases, definition-like contexts, and vast lexical and terminological networks. In addition, due to the highly interdisciplinary nature of today’s knowledge landscape, the texts that are strictly confined to a single terminological field are the exception, not the rule. For instance, most medical texts include terms from statistics, pharmacology, or physics, most texts that deal with musical theory rely on the terminology of mathematics, whereas technical user manuals encompass legal and

business terms. It seems pointless to stress that a translator dealing with this kind of texts needs to take into account and account for all these variables.

Reducing the translation of the texts produced within or referring to a specialist field of knowledge or activity to the translation of their terminology is a gross simplification. Newmark (qtd. in Byrne, 2006, 3) estimated that terminology represents at most 5-10% of the total content of technical texts. Of course, this estimate should be taken *cum grano salis*, since the ratio of terms in a text depends on numerous factors. However, from a lexical viewpoint, the bulk tissue of specialised texts is made up of words that belong to everyday vocabulary or words that may be seen as semi-specialised (commonly used in several fields). As an illustration, here are some examples taken at random from a medical article (1), a business textbook (2), and a user manual (3) – terms are highlighted in italics:

During CC treatment, levels of both *luteinizing hormone (LH)* and *follicle-stimulating hormone (FSH)* rise, falling again after the typical 5-day course of therapy is completed (7). In successful treatment cycles, one or more *dominant follicles* emerge and mature. [1] Look again at the basic rule presented in the first paragraph of this chapter, the rule we said all price searchers try to follow if their goal is to maximize *net revenue*: Set the price or prices that will enable you to sell all those units and only those units for which *marginal revenue* is expected to be greater than *marginal cost*. [2] Press the left (2) and right (3) buttons located beneath the *touchpad* to perform selection and execution functions. These two buttons are similar to the left and right buttons on a *mouse*. Tapping on the *touchpad* is the same as *clicking* the left button. [3] While showing that terms are only a relatively small part of the vocabulary used in specialised texts, the examples above also reveal another challenging aspect of specialised translation: dealing with phrasemes and register. Besides finding the right terms, the translators who work with specialised texts need to identify the various kinds of phrasemes present in the source text, understand their meaning and intended perlocutionary effects, and make informed decisions relative to their translation. Although set phrases carry a lighter weight as far as informational content is concerned, their mistranslation may hinder the overall readability and undermine the intended communicative functions of the target text. For Mel'čuk, a *set phrase* or *phraseme* is simply a phrase which is not free; this means that in its construction either the selection of its constituent members or their combination, or both, are not made freely, but are restricted to a more or less limited number of choices (1998, 24-30). Although it is relatively untapped in translation studies, the field of phraseology seems to be of utmost importance in specialised translation. In order to streamline communication, each field of knowledge has its specific set phrases and hallmark word combinations. For instance, “to browse the Internet / the Web / through files / data”, “to read / write a disc / data”, “editing tools”, “image processing”, “unauthorized use/access” are some phrasemes and word combinations very common in the field of information technology.

When dealing with the phraseology of specialised texts, choosing the right words to go with each term in the translation is key, not only in order to preserve the field-specific register/style, but also to maintain and support the communicative

function that the translated text is supposed to fulfil in the target context of reception. A Romanian physician once told me that she had been very bothered by a translated medical text she had read. In it, among other things, a Romanian translator felt that such English verbs as “to die” or “to flatline” were too rough, so s/he decided to “sugar the pill” in translation. As a result, in the Romanian version of the English article, patients “passed away”, “perished” or “parted”. As the physician explained, the unwanted effect of such associations had a negative impact on her reception of the article at hand.

Apart from field-specific collocations, specialised texts may include many other types of textual and referential set phrases. In the parallel corpus of general use ICT texts that I built for my doctoral research I was able to identify several types of frequent non ICT-specific referential phrasemes: lexical collocations (“high quality,” “next generation,” “user experience”), irreversible binomials (“incoming and outgoing,” “quick and easy”), compounds (“highspeed”, “user-friendly”), and phrasal verbs (“to turn on/off”, “to set up”, “to swipe down”). Textual phrasemes, field-specific and non-field specific phrasemes are sometimes accompanied in specialised texts by what Granger and Paquot (2008) name communicative phrasemes. Depending on the overall purpose pursued by a specialised text, the latter may take the form of speech act formulae (used mainly in advertising or in texts that address the readers directly), attitudinal formulae (e.g. “I/we think that”, “I/we are of the opinion that” – used mainly in argumentative, scientific texts), commonplaces (sometimes used in educational contexts), proverbs (or clever paraphrases), and slogans (advertisements, corporate communication, etc.). Below there are some examples of such communicative phrasemes, taken from a reference book in economics, *The Economic Way of Thinking*: Let's go back now to a question that we asked but deferred answering. We are not denying the possibility of predatory pricing in business. Simple cases are best for illuminating basic principles. There's the catch. It is in fact efficient (from his point of view) for Ed to. An old proverb wisely asserts that the wolf should not be sent to guard the sheep. Should the government be relied on to preserve competition in the economy? The way in which all the types of phrasemes mentioned so far are dealt with in translation is of great importance since, along with terms, they participate in the building up of the field-specific register and of the general, communicative register (or style) of both the source and the target texts. As Byrne noted, “in many cases, the importance or even existence of style in technical texts goes completely unacknowledged, due largely to the belief that because technical language is functional, it must be “plain” and stripped of any form of style or linguistic identity” (2006, 5). The few examples discussed so far are an indication that style neutrality or the lack of linguistic creativity in specialised texts is not universal.

### **Keeping Up with Genre Conventions and Communicative Functions.**

Along with terms, phrasemes, and register, another crucial thing to take into account in specialised translation is the fact that it usually deals with texts, *i.e.* fully-fledged discourse entities, which are not written at random, just for the sake of writing. They are the product of an author or of authors who belong to a particular discourse

community, and they are meant to serve a given purpose, because “individuals either produce, or produce interpretations of, texts according to the norms of the discourse community and the functions which the text is intended to serve within that discourse community” (Bex, 2001, 66). Both the “tradition” of a text and the communicative goals it pursues crystallise in the notions of genre and genre conventions. As Bhatia shows, the concept of genre “extends the analysis beyond the textual product to incorporate context in a broader sense to account for not only the way text is constructed, but also for the way it is often interpreted, used and exploited in specific institutional or more narrowly professional contexts to achieve specific disciplinary goals” (2004, 20). Specialised discourse is a realm where genres have been known to prosper, as each field of knowledge and/or activity has developed – or, sometimes, borrowed – its own conventionalised ways of packaging informational content. The legal field, for instance, encompasses a very wide range of textual genres, from judgements, subpoenas, summons, injunctions, to statutes, wills, powers of attorney, or various types of contracts. Discharge summaries, case reports, or consultation letters are some well-known genres in the medical field, whereas bank statements, financial statements, general ledger reports, or closing binders are common genres in the field of business/accounting. Of course, many genres cut across several fields. An example in this respect is the scientific article, which may come up as a conventionalised way of organising information in virtually any field of knowledge – even though textual conventions may be slightly different in each case. One of the challenges that specialised translators need to face is learning how to deal with all the various genres they may come across in their work. On the one hand, they need to be aware of the “culture” and purposes that led to the use of particular genre conventions in the source language and, on the other hand, decide how these conventions should be dealt with in the target culture, in agreement with the possible expectations of the target recipients (that they also need to envisage). As Neubert and Shreve emphasised, “the impression that a translation ‘sounds wrong’ comes from violations of a reader's textual expectations. The reader has in mind a set of tacit expectations about what the text ‘should be like’” (1992, 117). Keeping up with genre conventions may sometimes imply radical decisions, such as deleting, adding, or reorganising information in the target text. A study I carried out for my doctoral research revealed that the Romanian translations of English ICT news articles were consistently shorter than their sources (the average size of the target texts was of 373 words, as opposed to 500 for the source texts) and encompassed a smaller number of intra-textual divisions, like subheads or paragraphs (1793 in the source-corpus as opposed to only 1354 in the target corpus). This showed that the translators made an effort to adapt the target texts to the generic conventions of the target culture, which require that ICT news be more condensed in Romania. An even greater effort of adaptation may be needed in cross-genre translations, in which the source and the target genres are different (e.g. translating a source press release as a news article in the target culture). As far as communicative functions are concerned, in spite of the traditional assumption, translation practice seems to suggest that specialised texts which serve a purely informative purpose are not that frequent, not even in the technical fields.

With the exception of technical descriptions (*e.g.* the description of the parts that make up a particular machine or its functioning), which may be seen as only informative, most specialised texts are meant to perform several communicative functions. So, although their primary goal may be that of conveying information, most specialised texts are also meant to persuade (*e.g.* through argumentation, in scientific articles; in product advertisements), to instruct (*e.g.* user manuals; legal provisions), or even to express “personal” viewpoints (*e.g.* in scientific articles, in corporate reports), etc. In the past, examination to exclude any significant residual ovarian enlargement has been recommended before each new treatment cycle but it is no longer recommended. Although it is prudent to postpone further treatment when symptoms lead to discovery of a large cyst or grossly enlarged ovaries, clinical research and accumulated clinical experience suggest that routine ‘baseline’ physical or ultrasound examinations are unnecessary. When using the touchpad, keep it - and your fingers - dry and clean. The touchpad is sensitive to finger movement; hence, the lighter the touch, the better the response. Tapping harder will not increase the touchpad's responsiveness. What is the cost below which prices should not be set? Does anyone actually sell below cost? Consider the case of Ms. Profetta Seeker, proprietor of the Thrifty Supermarket, who orders 1,000 pounds of ripe bananas. As the examples above show, a wide array of linguistic and rhetorical means is put to use in order to achieve all these functions in the source texts, and some of them may prove to be particularly challenging to translators.

**Challenges, Responsibilities, and Risks.** As this brief overview has shown, from the level of terms, to phraseology, register, genre conventions, and communicative functions, the translators who work with specialised texts have to deal with many challenges, which require not only extra-linguistic knowledge of the field(s) at hand, but also problem-solving skills and linguistic creativity. In many respects, in the knowledge-based society – where information spreads at a breathtaking pace, the boundaries that separate the disciplines have faded, and the advancements of science and technology develop at a scale never reached before – specialised translation has become at least just as demanding as literary translation. In any case, it is definitely not “easier”, “restricted”, “machine-like”, or “humdrum”, as in some traditional views. In many respects, specialised translation and literary translation are similar. In fact, taking the concept of specialisation to the extreme, to the extent that the literary art might be seen as a specialist activity, which is only practiced by a small group of experts, literary translation may also be seen as (a type of) specialised translation. However, in spite of their apparent similarity, the attempt to make the two trades compete and the effort to assign them labels based on value judgements are just as useful as pouring water into a sieve.

Specialised translators have a shared responsibility towards both the source text and its producer(s) and the target text and its future recipients. The status of the literary source text may be higher than with most other text types, as Snell-Hornby claimed, but this does not mean that specialised source texts are authorless or that those who commission specialised translations expect less than a job well done, *i.e.* a translation that manages to keep the accuracy of the informational content conveyed

by the source text while succeeding in fulfilling its intended communicative effects in the target context. In its constant juggling between precision and accuracy in the translation of terms/ informational content and resourcefulness in the rendering of the numerous other linguistic and pragmatic phenomena present in its source texts, specialised translation is not a risk-free activity. It is not by chance that, according to some views, the notion of deviation in translation (of the target text with respect to the source text) is acceptable only when one talks about “scientific” documents “where facts are set out and presented in unqualifiedly objective terms for the reader of SL and TL text alike, but with literary texts the position is different” (Bassnett, 1992, 79). In fields of knowledge where accuracy is a prerequisite, the mistranslation of terms may have disastrous results, with consequences that may go far beyond the flawing of a literary author’s style. Moreover, the mistreatment of phraseology and inappropriate register choices may undermine completely both the way in which the information in specialised texts is understood and received and the intended communicative effect that the translation is supposed to produce in the target context. Finally, it is worth noting that, especially when their target language is lesser known and terminologically standardised, specialised translators, just like journalists or authors, are creators of language too. As Montgomery stressed, “translation (...) has time and again resulted in the creation of new vocabularies in languages previously foreign to the relevant knowledge” (2000, 18). When the source texts are highly influential or benefit from wide circulation, some of the choices made in their translation will tend to stick in the collective mind and be taken as the norm, and thus become the “conventional” translations of new terms or new field-specific phraseology. It is thus that formal or semantic loans are usually introduced into a language, enriching its vocabulary and helping it keep up with the advances of science and technology. From this perspective, specialised translators have responsibilities towards the target language too and they should be wary of the risk of introducing loose translations and poor style into the target context. “The translator, it was stated, must be more than a mere device, clicking out word for word, phrase for phrase; he must be actively involved in the choice of language, dancing the border between imitation and innovation” (Montgomery, 2000, 34).

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### **7.3. FORMATION OF PROFESSIONAL COMMUNICATION IN THE PROCESS OF FOREIGN LANGUAGE LEARNING**

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**Summary.** The work substantiates the structure of pedagogical communication and the structure of psychological readiness for its implementation. The article deals with the peculiarities of professional communication formation of students in a higher education institution. The purpose of the work is to analyse the expediency of teaching a foreign language discipline for students of agricultural specialties. The basic directions of professional communication formation of future specialists are determined. It is established that the quality of teaching a foreign language in higher education institutions to European standards is impossible without implementation of modern methods.

**Keywords:** pedagogical communication, professional communication, foreign language, training, higher education institution, modern methods of teaching.

Formulation of the problem. In the context of education modernization, the problem of professional training is especially important. The increased interest of scholars and practitioners for professional training is due to a change in the educational paradigm – there is a shift from mass-productive forms and methods of teaching to individual and creative, when a specialist is trained with the emerging need for professional self-education, capable of self-development and full self-realization in the chosen profession [26].

Professional communication is an integral part of the future specialist. The need to improve the level of preparation for professional communication of future professionals in higher education institutions will raise the issue of forming their readiness for communication, professional self-improvement and development. Therefore, there is a need to consider the peculiarities of forming a structure for students' readiness for professional communication.

Humanistic orientation is a priority in the modern educational system. That is what raises a separate personality to the level of the highest social significance and orientates the educational process to create the optimal organizational and pedagogical conditions for the formation of a future specialist as a carrier of high spiritual values, disclosure of his creative potential and self-realization in future professional activities. Humanistic educational trends also embrace the future specialists training in the field of agriculture. It is well-known that in higher education institutions of agricultural profile, attention has always been focused mainly on the general professional component, which led to the degeneration of

humanistic traditions.

The construction of the theoretical model of pedagogical communication is based on the results of the analysis of the approaches to understanding the connection between the categories – communication, activity, interaction known in philosophical and psychological sciences. These results testify to the need to distinguish between the two main directions of communication research.

The aim of the paper is to substantiate the expediency of teaching a foreign language discipline for students of agricultural specialties and to determine the main areas for the professional communication formation of future veterinarians.

Presenting the main idea. Representatives of the first direction with the presence of some differences in their interpretation of the category of communication argue that it should be considered as a special form of human interaction.

This view was deeply substantiated in scientific works of psychologists B.F. Lomov [19, 20], O.O. Bodalev [5, 6, 7], M.P. Erastov [12], M.M. Obozov [22, 23], B. D. Paryhin [24].

B.F. Lomov, having conducted a systematic analysis of communication, interprets this phenomenon as one of the most important independent categories of psychology. In his conception, activity and communication act as two sides of human social existence [19, 20]. At the same time, B.F. Lomov argues that communication is the interaction of people who enter it as subjects. The study of the structure of communication, as B.F. Lomov emphasizes, requires three levels of its analysis [19]. At the first level (macro level) of the analysis of communication it is necessary to consider as a difficult network of interrelations of the individual with other concrete individuals and social groups. The second level of analysis (meso level) of communication involves, according to the researcher, the study of individual contacts that people enter. In this case, it is necessary to distinguish the period of communication, which has several main phases (the initial phase, which requires the formation of certain "common coordinates" of behaviour of participants; the next phase is to coordinate the temporal characteristics of communication, mental processes and states, and the "background" knowledge, skills and abilities). The third level of analysis (micro level) involves the study of individual connected acts of communication, which act as a kind of elementary units. Each of these acts includes not only the action of one of the individuals, but also the related cooperation (or opposition) of the partner.

His approach to creating a social and psychological concept communication was suggested by B.D. Paryhin [24]. After conducting a structural analysis of communication, he singled out its content (communication) and form (interaction). Further, the content and form also stood out in these two structural components of communication. The content of communication is characterized by mutual understanding, empathy and the degree of agreement between its participants. Form of communication – verbal and nonverbal means of communication. The content of interaction is social relations (economic, legal, political, etc.), and the form is the practical behaviour of people in joint activities (action, counteraction, conflict, cooperation, differentiation, integration).

The second direction of the study of communication should be attributed primarily to the scientific works of M.I. Lisina [18], O.O. Leontev [15].

In the psychological concept of communication, developed by M.I. Lisina, the studied phenomenon is considered as a type of human activity, each of the participants of which is equally a carrier of activity and anticipates it in his partner [18, p. 9]. In the structure of communication, according to this concept, the following main components are distinguished: its subject – the second person, the partner of communication as a subject; needs and motives – for which communication is carried out; actions – a holistic act that is addressed to another person and directed at him as his own object; task – the goal, the achievement of which in these specific conditions are aimed at various actions carried out in the process of communication; means – operations by means of which actions of communication are carried out; products – the formation of material and spiritual nature, which arise as a result of communication.

In view of the above, it should be emphasized that the concept of communication of M.I. Lisina is based on the basic provisions of the concept of activity developed by O.M. Leontev.

O.O. Leontev considers that the starting point of the analysis of communication to be understood as one of the types of human activity [16, 17], which is characterized by: intentionality (the presence of a specific goal, independent or subordinate to others; effectiveness (the degree of coincidence of the achieved result with the intended purpose), normativeness (obligatory social control over the course and results of the act of communication).

O.O. Leontev argues that it is necessary to distinguish between communication and interaction. He substantiates his scientific position on this issue as follows:

- the structure of interaction is determined by the distribution of labour functions, the individual contribution that each member of the team invests in the overall activity;
- communication processes can be autonomous: communication is necessary for interaction, but the same mutual mode can be provided by communication of different orientation, different character and volume.

Thus, O.O. Leontev emphasizes, the inconsistency of interaction and communication is traced [16].

It should be emphasized that the understanding of communication as a type of activity was reflected in the scientific research of N.V. Kuzmina. Thus, N.V. Kuzmina emphasizes that pedagogical activity is a complex dynamic system that has its own specific structure. In this system N.V. Kuzmina distinguishes constructive, organizational, communicative components [14]. Each of them corresponds to a certain group of functions, as well as pedagogical abilities that reflect the structure of pedagogical activity. In the communicative component of this activity N.V. Kuzmina sees the establishment of the correct relationship of teachers with students, teachers, parents, the public, which allows to take into account and meet the requests and interests of students, to properly assess and understand information about the effectiveness of pedagogical development. .

Pedagogical systems, as noted by the researcher, make certain demands on the communicative activity of the teacher, which is associated with its special design, organization and analysis [13, p. 86].

Scientific researches of L. Baranovs'ka, L. Holovata, N. Kostritsa, L. Luchkina, L. Palamar, T. Rukas, N. Totskaya and others are devoted to the problem of professional communication formation among students of non-philological specialties. The formation of the language culture was studied by N. Babych, A. Koval, L. Matsko, M. Pentiluk and others. However, special studies of the problem of professional communication formation of future veterinarians have not been the subject of research from the standpoint of innovation processes that took place in the system of higher education in Ukraine.

The need for professional communication along with the need for activities is prominent in the development of the personality of a future specialist. Researchers such as L. Vygotskiy, V. Mikhailyuk, N. Reutov, N. Borisko, E. Ganish and others, believe that knowledge and life experience can only be acquired through communication. Professional communication should help the person to develop, raise his general, intellectual and professional level. Logical, correct, appropriate professional speech should be the student's inner need. The notion of «speech» as a certain type of activity was defined by L. Vygotskiy [10, p.40], according to which professional speech must be regarded as a kind of activity of people of a certain area of knowledge, which finds the use of the language of a particular specialty in the process of communication. V. Mikhailuk believes that «knowledge of the language of the profession increases the efficiency of labour, productivity, helps to better orient in direct business relationships» [21, p.33].

N. Borisko thinks that the purpose of teaching a foreign language of professional communication is the formation of a special intercultural communicative competence that covers language, social, cultural, vocational and educational competence. The basic principles of teaching a foreign language of professional communication include a communicative approach, a special professional approach, autonomous learning, and others [8, p.23]. However, some experts point out: despite the fact that the content of teaching a foreign language, which is taught as a general education discipline in all types of educational institutions, and the content of teaching profile-oriented foreign language are different. The processes of learning and mastering the language in the profile-orientation course are the same, as well as in general education course. In other words, there are no language teaching methods for special purposes that are not characteristic of language learning in general. On the other hand, some researchers who study the peculiarities of learning the language of professional communication (T. Hutchinson, A. Waters, R. Jordan, D. Brinton), concluded that the course of teaching profile-orientated foreign language cannot but use the methodology and methods of the disciplines it serves. The question of how to combine traditional and special methods and approaches in organizing the course of a foreign language of a professional orientation leaves open.

Professional communication is the main form of pedagogical process, the productivity of which is determined by the goals and values of communication,

accepted by all its subjects as the norm of individual behaviour. It unfolds in the process of joint communicative activity of people, mediated by the exchange of information, in which each of its participants learns universal experience, social, pedagogical, communicative, moral and other values, knowledge and methods of communication, discovers, reveals and develops his own mental qualities, is formed as a person and as a subject of communication. In this sense, communication, communicative activities are important factors in mental development.

The subject of professional and pedagogical communication is a carrier of active, creative beginning, communicatively educated personality, able to consciously plan and organize their own communicative activities, influence the partner, perceive, analyze, evaluate the informational, emotional and intellectual content of his statements, physiological and energy state, has a developed emotional intelligence, has communicative skills, abilities, experience.

The leading subject of professional and pedagogical communication is a teacher, professional, including communicative, whose activities should be aimed at fulfilling the social order – the formation of a harmoniously developed personality. As a participant in any act of communication, he must take care of education, upbringing and personal development. The communicative goal of the teacher is not only to achieve mutual understanding in communication, but also to initiate a comprehensive, harmonious development of others. He can achieve this by realizing the uniqueness of man as an individual, given the dynamics of change that occurs with him, understanding the complexity and ambiguity of the development process, being able to see the distant prospects of interaction, instilling in those with whom communication, confidence in successful mastery growth. The teacher must realize that the main responsibility for the success of communication lies with him as a specialist who can and should find a way out of any communicative situation.

The subject of communication is a social group, which, interacting with the subjects of the external environment, influences the behaviour and communication of each individual involved.

The object of professional and pedagogical communication is the joint activities of the subjects of communication, the result of which is the deepening of their awareness, improving the quality of communicative activities, the development of communicative skills, and enrichment of communicative experience.

Professional and pedagogical communication is realized as a system of various direct and indirect connections of the subjects of communication. The peculiarity of direct connections of the subjects of communication is their direct contacts (with uniform temporal, spatial characteristics): “teacher – student”, “teacher - group of students”, “teacher - team of students”, “teacher – teacher”, “teacher - group of teachers”, “teacher - team of teachers”, “teacher - a representative of the administration”, “teacher - a social pedagogue (psychologist, student's parents, members of the public, subjects of education management, random subjects)”, etc. Often the direct connections of the subjects of communication appear as a combination of several types. For example, a teacher can solve certain communicative problems related to the organization of the educational process, both

with colleagues and with students.

Indirect connections involve the mediator as a transmitter of information. They are separated in time and distant in space: computer (“teacher - computer – teacher”, “teacher - computer - student”, “teacher - computer”, etc.), correspondence, telephone conversations of subjects as transmitters of information, etc. The presence of an intermediary between the subjects of communication affects the content and purpose of information flows. An important component of professional and pedagogical, like any other, communication is the flow of information – the movement in a particular environment of data (information), structured on the basis of content-target relationship and order, directed from the source to the user. An example of indirect professional and pedagogical communication is distance learning, which involves communication between the teacher and students (system “man - computer – man”) with the help of special technical means (CDs, computer networks, audio-graphic form, video conferencing, etc.).

Professional and pedagogical communication is a complex type of pedagogical activity aimed at teaching, education and personal development, and requires responsibility. Its main functions are terminal, tactical, and operational.

Terminal (from Latin “terminalis” – border, edge) functions of pedagogical communication (functions-goals). They are related to the strategic directions of pedagogical activity; reflect its essential goals and objectives.

This group consists of:

- educational function of professional and pedagogical communication (involves mastering the subjects of communication communicative knowledge, their constant updating, communicative reflection for effective dialogue in pedagogical activities, contributes to the deepening, expansion and consolidation of knowledge, skills and abilities);

- educational function of professional and pedagogical communication (contributes to the formation of communicative, moral qualities that provide normative human behaviour, for successful adaptation to a particular social and cultural, educational environment), its implementation involves the formation of values, beliefs, communicative culture;

- developmental function of professional and pedagogical communication (creates unique opportunities for the development of communicative, personal qualities of communication subjects, mastering ethical norms and rules of conduct, disclosing the moral content of events, facts, actions, mastering evaluation and self-evaluation criteria, enriching communicative experience; and consistent transition to qualitatively new levels of culture of pedagogical communication);

- life-sustaining function of professional and pedagogical communication (creates conditions for personal self-realization, meeting information and communication needs of communication subjects through enrichment of culture of verbal and non-verbal communication, expansion of access to constantly updated information, use of information and communication resources of computer technologies);

- the function of socialization of the individual (provides preparation for

establishing mutual relations with the subject of communication, team, social environment through mastering the rules of verbal and non-verbal behaviour in standardized communicative situations; choosing the most appropriate means of communication to achieve goals in a particular communicative situation; openness and communication partners, awareness and overcoming barriers to communication, choosing the optimal style of communication and team leadership, overcoming obstacles to mutual understanding, conflict resolution, awareness of their place in the system of role, status, business, interpersonal and other relationships).

The process of communication depends on the professional role of the teacher, who programs a certain pattern of social, professionally oriented behaviour ("teacher - student"). In this regard, of particular importance is his ability to diversify the role of professional positions, get rid of "masks", to take on the role of another.

Tactical functions of professional and pedagogical communication (functions-means). Their implementation is subject to the overall communication strategy. Each of these functions performs a corresponding instrumental role:

- informative function of professional and pedagogical communication: ensuring full exchange of messages, i.e. reception, transmission of information (about new knowledge and properties, features of objects and environmental phenomena, technologies and norms of specific communication activities, models, strategies, technologies of communicative behaviour, pedagogical tools communication, etc.), perception, understanding of its content; selection of adequate verbal and non-verbal means of conveying the content of information; formation of personal, emotional and value attitudes to information in the subjects of communication; understanding of the internal state of the partner in pedagogical communication; holistic analysis of the process of pedagogical communication on the basis of the formed system of knowledge, study, awareness and analysis of their communicative abilities, skills;

- expressive function of professional and pedagogical communication: providing accessible, interesting, emotionally expressive and vivid transmission of information, the formation of appropriate communication skills, stimulating the partner the necessary emotional states ("exchange of emotions").

The teacher's influence on the student's emotional sphere can be so significant that his views and ideas, reinforced by emotions and experiences, in some circumstances can encourage creativity, search, in others – to fill the student's consciousness, deprive him of the ability to rational analysis;

- meaning and forming function of professional and pedagogical communication: introduction of meaning in all aspects of communication, disclosure of universal, general cultural meanings, professional and individual significance of communicative actions;

- diagnostic function of professional and pedagogical communication: ensuring the effectiveness of communication, which depends on the degree of mastery of its subjects (including teachers) information about the state, level of knowledge, education, development of communication partner, the degree of his awareness, willingness to share information. It provides constant feedback, which allows you to "read" and analyze information, characterize emotional and volitional

states through their external manifestations, see the discrepancy between non-verbal communicative acts and their psychological content, draw certain conclusions;

- individualization function of professional and pedagogical communication: approval of uniform standards and rules of work with information, satisfaction of individual features of demand for information depending on abilities, interests, desires, potential possibilities of subjects of communication by use of various sources of information, artificial means of its storage and transfer, development of its forms;

- motivational function of professional and pedagogical communication: finding ways to transfer the partner from communication to the position of the subject, encouraging him to activity, directing to certain communicative actions, self-realization through verbal, non-verbal means of communication, use of telecommunications technologies to transmit and receive information;

- prognostic function of professional and pedagogical communication: anticipation of possible communication barriers during information exchange, changes that may occur with the subject of communication, analysis of their trends, modelling of the next communication process (content planning, choice of means, communication technologies based on content and the purposes of interaction, in particular educational, upbringing);

- culturological function of professional and pedagogical communication: opening opportunities for communication participants not only to demonstrate the level of culture of oral and written speech, non-verbal manifestations, knowledge of etiquette, but also to take a model, imitate personally significant features of behaviour, pronunciation of communication partner;

- psychotherapeutic function of professional and pedagogical communication: the use of means of communication (verbal, non-verbal) in order to provide psychological assistance, conflict prevention, levelling or compensating for their negative effects.

Operational functions of professional and pedagogical communication (functions-receptions). These functions are revealed in the process of realization of tactical goals, which, as a rule, are connected with the corresponding communicative strategy:

- function of measurement and evaluation in professional and pedagogical communication: search, improvement of forms and techniques of measurement (determination of values) of indicators important for pedagogical communication (level of formation of communicative skills, availability of communicative abilities, criteria for assessing quality and quantity of information), decoding, receiving information) and their evaluation (formulation of conclusions about the state of processes, events, phenomena on the basis of certain generalizations);

- methodical function of professional and pedagogical communication: correlation of the purpose and means, techniques of pedagogical communication with its results, definition of their efficiency, conformity of communicative activity to normative standards, revealing of lacks in construction of process of pedagogical communication, forecasting of its development, development of new strategies and tactics of communicative activity and the subject of communication;



- management function of professional and pedagogical communication: management of communicative activity of communication subjects, information flows; prevention of difficulties that arise in the transition of information from external to internal subjects of communication, as well as due to distortion of information in indirect pedagogical communication. This necessitates knowledge of information flows (“teacher - student”, “student - teacher”), the subjects of pedagogical communication, the ability to analyze information flows, find the causes of their non-identical transitions, ways to adjust and use them;

- function of coordination of professional and pedagogical communication: mutual orientation, coordination of actions of subjects of communication for the purpose of the organization of joint communicative activity;

- contact function of professional and pedagogical communication: establishing contact (the state of mutual readiness of the subjects of communication to direct or mediated by electronic means of receiving and transmitting messages); activation of the desire of the subjects of communication to contact each other and with the initiator of communication; creating conditions for learning about the personal qualities of communication partners; organization of common experiences; creating a positive, favourable atmosphere;

- self-affirming function of professional and pedagogical communication: awareness of the subject of communication of his own “I”, a sense of personal significance, the formation of adequate self-esteem, the level of claims of the individual;

- formative function of professional and pedagogical communication: external design of verbal expressions, non-verbal manifestations depending on the features, conditions of communication, personal qualities of its subjects.

Knowledge of functions, focus on the multifunctionality of professional and pedagogical communication allow teachers to organize their own communication as a holistic multifaceted process, to find its multiple meaning (educational, developmental, etc.), understanding its variability (lack of rigid determination of models, tactics, styles and means of communication), integrativity (each communicative act is a projection of many systems), multilevel (the need to stimulate the activity of the subject of communication, self-control and self-assessment of communicative activities, correlate their actions with the actions of the interlocutor, analyze, adjust, predict further communicative activities, etc.).

The content, forms and means of implementation of specific functions depend on the professional orientation of the teacher, the type of educational institution. Thus, the methods of establishing contact of primary school teachers and high school subject teachers must be significantly different, otherwise the teacher will not avoid interpersonal conflicts. Significant differences will have the content, emotional saturation of expressions and non-verbal manifestations (function of formation) of teachers of mathematics, literature, geography.

During the implementation of the socializing function in the university should take into account the presence of students with some experience of social relations, life stereotypes and norms.

It is not always possible to predict the success of communication, as it often depends on many unforeseen circumstances. Therefore, the teacher must act simultaneously in several dimensions: to communicate directly with the partner, to observe himself and his actions, to keep under control the purpose of communication, to assess the feasibility of achieving it or the need for change. Correlation of the forecasted course of events with the actual one is the basis for making adjustments.

The communicative activity of the teacher is a process of constant knowledge of the situation, conditions of communication, social environment, oneself, the opposite side. Otherwise, he will act blindly, by trial and error. Only on the basis of operational research, analysis of the situation, he will find adequate means to ensure pedagogically appropriate communication.

The process of communication as a conscious action of two subjects has goals (mutual understanding), content (intellectual, emotional, spiritual essence of information), methods (methods used), and result (consequence of communication). It involves the emergence of changes between the initial and final state of the subjects (a certain increase – a change in their own consciousness, inner image due to awareness of the world, the specific situation and themselves in it, their own position, purpose, content, method, result of communication).

Communication is known to be a two-way flow of information. It is important quality of information, its completeness, content, form, which allows not only quickly and correctly forming an idea of the problem, but also to choose partners, develop its strategy and tactics, determining adequate methods and means to achieve specific goals. The effectiveness of communication depends on the clarity, availability of information.

Information interaction of communication subjects is mediated by the influence of information (direct and feedback), the quality of its encoding and decoding. Feedback (in verbal or non-verbal forms) expresses the degree of assimilation of understanding of the message, trust in it, agreement or disagreement with it, changes the communicative roles of the subjects of communication. Feedback streams can carry data about each subject of communication, and about their interaction: the degree of mastery of the means of communication, the formation of communication skills; the level of preparation of teachers for communication and the level of formation of their professionally significant communicative skills, qualities, experience; ability to model the communication process.

In the process of information exchange, the teacher must emphasize the correctness of information transfer, its proper understanding by students, to realize that at each stage of the communication process; information is partially lost, distorted. During communication, the following modifications of information appear: information that the sender intends to transmit (his thoughts); the information transmitted was actually expressed; interpreted information; information that has finally remained in the listener's memory.

Implementation of the communication process is possible under the following conditions:

- 1) the presence of a common communicative space for the subjects of

communication – the social and psychological environment that affects the subjects of communication information (its content, value, novelty), means of communication (verbal, non-verbal, information and communication), adopted in a particular educational environment (educational institution, student group, class) rules of communication, moral norms, customs, speech rituals, etc.;

2) the use of a single system of codification and decoding of information, signs and their meanings (reflection of the most essential and generalized features of objects and phenomena), meanings (subjective meaning, which acquires an expression in context). The presence of a single sign system allows the teacher and the student to properly navigate in a particular field of knowledge;

3) adequate understanding of the information exchanged by participants in the communication process. Understanding – comprehension of specific information transmitted through words, signs, deeds, actions; human ability to comprehend the content, meaning of information; display the text and re-evaluate it in a new context. It is about the understanding direct meaning of individual words, phrases, expressions in general; directly expressed opinions (understanding of the subtext); clearly undefined motives for behaviour or individual actions of a person (interlocutor), etc. In each communicative situation, the mechanisms of understanding and its results differ in nature and levels. Thus, the meaning of a word can be understood only in the context of a sentence as the smallest unit of speech that expresses a complete thought. At the same time, the meaning of a single sentence can be understood only in the context of a certain passage of text (the principle of interaction of parts and the whole);

4) the optimal combination of verbal and non-verbal means of communication in the process of information exchange, which requires appropriate communicative knowledge, skills and abilities, communicative experience;

5) prevention and overcoming of possible communication barriers – absolute or relative, subjectively experienced or actually existing obstacle to effective communication. Communication barriers are social or psychological in nature. They are due to motivational and operational, individual and psychological, social and psychological features of the subjects of communication, differences in language, culturally determined norms of communication, in the interaction of representatives of different cultures and nations; misunderstanding by another person, lack of information;

6) taking into account the unique personalities of the subjects of communication, their communicative knowledge, skills, abilities, experience. Communicative knowledge is a generalized experience of mankind in communicative activities, the reflection in the minds of people of communicative situations in their causal relationships. They become professional when they are transformed and built into an individual model of practical solution of a communicative problem, when their acquisition is motivated by individual and personal needs.

A feature of communicative knowledge is complexity, which requires the teacher to be able to synthesize material for successful solving of communicative tasks, analysis of communicative situations, and choice of effective means of

communication. Communicative knowledge is the basis of communicative skills – communicative actions based on thorough theoretical and practical training, which allows you to creatively use communicative knowledge, skills to reflect and transform reality. Formed in the process of communication, communication skills are a consequence of the development of communicative abilities – the ability to communicate with other people. They are manifested in the skills of the subject of communication to enter into social contacts, to achieve communicative goals in interpersonal relationships.

Communicative abilities include several substructures: gnostic (the ability to understand other people: the desire to understand interlocutors, the ability to listen, psychological observation, the ability to identify), expressive (the ability to express themselves: the desire to be understood by others, truthfulness, trust in partners), interaction (the ability to adequately influence communication partners: demanding, polite, persuasive, determined, tactful, disciplined).

Communicative abilities, knowledge, skills are transformed into communicative skills – automated conscious actions that contribute to the rapid and accurate reflection of communicative situations, determine the adequacy of perception, understanding of the objective world, the impact on it in the process of pedagogical communication.

Thus, the basis of professional and pedagogical communication is the joint activities of the subjects of communication, mediated by the exchange of information, in the process of which each subject learns universal experience, historically formed social, pedagogical, communicative, moral and other values, knowledge and methods of communicative activity, reveals and develops their own mental qualities, forming themselves as a person and as a subject of communication. In this sense, communication is an important factor in mental development. This shows that full-fledged professional and pedagogical communication is a multifaceted phenomenon.

Professional and pedagogical communication places specific requirements on the qualities of the teacher's personality, the most important of which is communicativeness as a necessary prerequisite for successful and active work with pedagogical information – information aimed at teaching and educating students.

Communicativeness (from Latin “communication” – communication, message) is a set of essential, relatively stable personality traits that contribute to the successful reception, understanding, assimilation, use and transmission of information.

The components of professional and pedagogical communicativeness of a teacher are: a steady need for systematic and diverse communication with children in various fields; interaction of universal and professional elements of communicativeness; emotional satisfaction at all stages of the communication process; availability of communication skills; the desire to acquire communication skills and abilities.

Pedagogical communication consists in communicative interaction of the teacher with students, colleagues, directed on establishment of a favourable psychological climate, on psychological optimization of activity, exchange of thoughts, feelings, experiences, ways of behaviour, habits, and also on satisfaction of

needs of the person in support, solidarity, compassion, friendship, etc. It is a complex, multifaceted process of establishing and developing contacts between people, generated by the need for joint activities, which includes the exchange of information, the development of a common strategy of interaction, perception and understanding of another person. It provides transmission through the teacher to students of human culture, the acquisition of knowledge, promotes the formation of value orientations in them.

Pedagogical communication is a system of social and psychological interaction between teacher and student, aimed at creating optimal psychological conditions for joint activities. As a kind of creative activity, pedagogical communication is manifested during the cognition of students by the teacher, in the organization of direct influence on them, in the management of their own behaviour, the organization of the process of relationships.

Pedagogical communication is a multifunctional phenomenon that provides information exchange, empathy, knowledge of the individual, self-affirmation, productive interaction. The exchange of information and the attitude of interlocutors to each other characterize the communicative aspect of communication; cognition of personality and self-affirmation – perceptual; organization of interaction – interactive.

In the pedagogical process, it performs the following functions:

- contact (establishing contact as a state of mutual readiness to receive and transmit a message, the content of the relationship);
- information (exchange of messages: reception, transmission of information; exchange of views, plans, decisions, etc.);
- motivational (stimulation of communication partner activity, directing him to certain actions);
- coordination (mutual orientation and coordination of actions for the organization of joint communicative activity);
- cognitive (perception, understanding of the content of information, knowledge of the inner state of the interlocutor);
- expressive (the ability to accessible, interesting and emotionally expressive knowledge, to form skills and abilities; arousal in the partner of the necessary emotional experiences (“exchange of emotions”));
- establishment of relations (awareness of one's place in the system of role, status, business, interpersonal and other communicative relations);
- organization of influence (change of state, behaviour, level of communicative knowledge, skills, experience, value-motivational sphere of the interlocutor, etc.);
- managerial (management of their behaviour, influence on other people).

In order for a student to become an active participant in the pedagogical process, it is necessary to ensure the nature of pedagogical relations, which consists in equality of psychological positions, mutual humanistic orientation, activity of teacher and students, their interpenetration into the world of feelings and experiences, arguments of the interlocutor, interaction with him.

Unprofessional pedagogical communication creates fear, insecurity in students,

causes reduced efficiency, impaired speech dynamics, unwillingness to think and act independently, alienation, negative attitude towards the teacher, learning. The feeling of depression from studying a certain subject, and often from communicating with the teacher in some students lasts for many years. Communicative interaction in the process of pedagogical communication is based on the following principles:

- taking into account the social guidelines of the student (each person has own views, values, experiences. It is easier for a person to reject what does not meet his guidelines than to change them. The teacher must take into account these guidelines, treat them carefully);

- tolerance (understanding that all people are individual and unique, everyone has the right to their own opinion);

- referentiality (implies respect for students, demonstration of faith in their best qualities, emphasis on the positive, balance, friendliness, optimism).

Pedagogical communication has signs of dialogue if it meets the following criteria:

1. Recognition of equality of personal positions, openness and trust between partners. This implies recognition of the active role, the real participation of the student in the communication process. In such circumstances, the teacher and the student act as partners, jointly organizing the search, activities, analyzing and correcting mistakes.

The teacher does not reduce his actions to assessing student behaviour, indications of the need and ways to improve it. He provides the student with information about this, and he evaluates his actions. It is not a question of eliminating the value judgment, but of changing its authorship, which ensures cooperation, equality and activity of both parties.

In pedagogical dialogue, the teacher chooses the position of the interlocutor, who, being a source of information, a leader of communication, not only recognizes the student's right to make mistakes, his own attitude to activities as a partner in communication, but also stimulates his independence in judgments. He must skilfully implement the subject-subject relationship, providing two-way activity in the interaction; purposefully pass the initiative to the interlocutor, to provoke his spontaneous reactions; to take care of the unity of the participants of the dialogue, finding a common field of interaction; focus on the interlocutor's answers, continue his thoughts, not reject them; it is advisable to apply the tips, stimulating students' interest in them. In the process of dialogue he has the opportunity to form ethical, spiritual in the behaviour and communication of students, to develop their taste for words, gestures, facial expressions, intonation.

2. The teacher's focus on the interlocutor and the interaction of their views. Personal equality in dialogic communication presupposes different positions of its participants. The student is in the circle of their needs, acts to meet them (attempts to assert themselves, learn something new, etc.), the teacher focuses his efforts on the needs of the student. In such communication, the centre of his attention is the person of the interlocutor, his purpose, motives, point of view, level of preparation for the activity.

In the organization of dialogue it is important to use the techniques of attraction (from Latin “attrahere” – to attract), which involve an easy perception of the position of a person to whom an emotionally positive attitude has been formed (feelings of sympathy, friendship, love). Winning of sympathy is promoted by: a friendly, sincere smile (encouragement, understanding) as a signal to a communication partner; concealment of negative emotions, even justified ones; use of mechanisms of suggestion (persuasion) for the purpose of formation at the interlocutor of belief in the forces, confidence in existence of positive features (reception of a compliment); patient and compassionate listening to the interlocutor, which allows him to satisfy the need for self-expression, forms a positive attitude towards the teacher.

Focusing on the interlocutor implies a willingness to change their intentions, opinions in accordance with the opposing reactions. The teacher, attentive to the child's reaction, achieves interaction in the plane of his interests, suggests ways to solve his problems. Equally important is the imagination, which allows you to see yourself in the place of the interlocutor, to find out how clear it will be for him.

The ability to see the situation through the eyes of a child is an important feature of the teacher. In its formation of great importance is intuition – the ability to see the characteristics of another person through direct contemplation, without logical reasoning. The process of interpersonal understanding is largely realized in the emotional sphere, as feelings, compassion and empathy help to better understand other people. The ability to perceive the feelings of another as their own and the ability to respond emotionally are a necessary component of pedagogical communication and a specific means of human cognition. Dialogue should take place in a human form, when the teacher, communicating with the student as a subject, tries to understand him and accept his position.

3. Personalized manner of expression (“I believe”, “I think”, “I want to consult with you”). According to its requirements, the dialogue should have an open position, which involves the presentation of information from the first person, the teacher and students to personal experience, expression not only opinion but also attitude to it, which together with other factors determines the interaction.

4. Polyphony of interaction. This means that each participant in communication should be able to express their own position, to seek solutions in the process of interaction, taking into account all opinions. Under such conditions, monologue communication is impossible, which represents only the opinion of the teacher.

5. Duality of the teacher's position in communication. During communication, the teacher conducts a dialogue not only with the partner, but also with himself (internal), analyzes the effectiveness of the implementation of his own plan, which helps to preserve his initiative during communication. When solving educational tasks, pedagogical dialogue allows the teacher to provide real psychological contact with students, to form their positive motivation for learning, to create an environment of collective cognitive search; in solving educational tasks – establishes educational and pedagogical relations, psychological contact between teacher and students, forms interpersonal relationships. Dialogue creates situations that stimulate self-education

of the individual, overcomes social and psychological factors that hinder the development of personality in the process of communication, social and psychological correction of its development and the formation of important personal qualities, speech development and thinking.

Dialogic communication with students is based on pedagogical optimism, openness, sincerity and naturalness in communication, perception of students as partners, the desire for mutual understanding and cooperation. Dialogue, in the process of which there is an exchange not only of knowledge, but also of personal meanings, cooperation and co-creation, provides a humanistic, democratic style of communication in the system “teacher -student”.

Professional pedagogical communication is a complex system, which in its attitude and development overcomes the following stages:

1. Modelling of future communication by the teacher (prognostic stage). At this time, the contours of future interaction are outlined: planning and forecasting the content, structure, and means of communication. The content of communication is the formation of the purpose of interaction, analysis of the interlocutor and the situation. At the same time, the teacher's goal setting is crucial. First of all, he must take care of involving the student in interaction, creating a creative atmosphere, open space for his individuality. This requires the ability to perceive and evaluate a person accordingly; restoration in the communicative memory of previous features of communication with this audience; clarification of the peculiarities of communication in the new communicative conditions activities. If the teacher meets the audience for the first time, his communication at this stage will be conditioned by the pre-communicative atmosphere, created on the basis of the initial information of the teacher about students and students about the teacher.

2. “Communicative attack” – gaining initiative, establishing emotional and business contact. It is possible if the teacher has developed communication skills (building the content of communication, creating creative well-being, professional and pedagogical attention, orientation in the situation, establishing and maintaining feedback in communication, implementation of communication plan, possession of verbal and non-verbal means of communication, social perceptions, etc.).

Orientation in a communication situation includes: orientation in the interlocutor, spatial conditions of communication, circumstances that are subject to visual and kinetic perception; orientation in time conditions of communication (presence or absence of time deficit); orientation in the social situation of communication (actual relationships between those who communicate). Necessary component of orientation in the face of the interlocutor are regulators (eye contact, facial expressions of confirmation or misunderstanding: nodding, raising eyebrows, smile, etc.); speech signals that are caught by the communicator (the one who speaks) in the behaviour of the recipient (the one to whom the speech is addressed). Such orientation is the perception and on its basis the understanding of the external “pattern” of the interlocutor's behaviour without penetrating into the hidden motives and purpose of his communication.

The effectiveness of the “communicative attack” depends on the development



of professional thinking, speech of the teacher, his professional and lexical stock, the ability to determine the communicative structure of the lesson (communication), mastery of the technique of pedagogically appropriate experience, emotional well-being; orientation in time and conditions of communication.

It is important for the teacher to master the technique of quick interaction, as well as the following methods of dynamic impact:

- infection (subconscious emotional response in interaction with other people based on empathy with them);

- suggestion (targeted conscious “infection” by one person of other motivations of certain actions, content or emotions through speech influence on the basis of uncritical perception of information);

- beliefs (conscious reasoned and motivated influence on the system of views of the individual) are the imitation (assimilation of forms of behaviour of another person on the basis of subconscious and conscious identification).

“Communicative attack” can be unsuccessful or impossible if the teacher has the following speech defects: incorrect diction, inability to intone speech, incorrect accents, excessive or insufficiently loud pronunciation, unjustified slowing down.

To ensure its effectiveness, the method of speech enlargement is used, according to which the desired phrase (the one that is enlarged) must be “expanded”, i.e. spoken slowly, lengthening vowel sounds and maintaining its logical harmony; different words, phrases are not enlarged in the same way, the main (stressed) word is always enlarged; the aggregation of a single-syllable or multi-syllable word requires pronunciation by syllables.

The initiative of the teacher in communication is provided by: clarity of the organization of initial contact with a class; efficiency in the transition from organizational procedures to business communication; lack of intermediate zones between organizational and semantic aspects of the beginning of interaction; efficiency in achieving psychological unity with the class; inclusion of personal aspects in interaction with students; overcoming stereotypical and situational negative attitudes towards individual students; organization of integral contact with the whole class; ensuring the external communicative appearance of the teacher; reduction of pedagogical requirements that prohibit something, and expansion of positive-oriented pedagogical requirements; implementation of verbal and non-verbal means of communication; expression of personal commitment to students; understanding the situational inner disposition of students and taking it into account in the process of communication, transferring this understanding to students; introduction at the initial stage of interaction of tasks and questions that mobilize the audience; formulation of bright, attractive goals of activity and demonstration of ways of their achievement; summary of an interesting fact, history, comparison of different views.

Communication management is a conscious and purposeful organization of interaction with the adjustment of the communication process in accordance with its purpose. At this stage, there is an exchange of information, its assessments, mutual evaluation of interlocutors.

What is important is the atmosphere of friendliness, in which the student is free

to express their thoughts, to feel positive emotions from communication. Giving the initiative to a student, the teacher delegates to him the right and need for independent analysis of events and facts. He must show interest in the student, receive information from him, express judgments, conveying to the student his optimism and confidence in success, set bright goals for him, outline ways to achieve them.

4. Analysis of communication is a comparison of the purpose, means of interaction with its results which show semantic and emotional (it is expressed in behaviour of students, the general atmosphere of activity) feedback, modelling of the further communication (a stage of self-adjustment).

It is very difficult while organizing the process of training to define its priorities, goals and training. Thus, the system of professional training simultaneously provides and fulfils a certain state order for a future specialist, is a certain stage and a means of life self-determination.

In today's conditions of development, expansion and absorption of scientific, technical, agricultural and other contacts, practical knowledge of a foreign language is a prerequisite for a successful professional activity of a specialist – graduate of a higher education agrarian institution. Oral forms of foreign language communication are of particular importance. The teaching of oral professionally oriented communication and the ability to understand professionally oriented speech are important tasks for higher education institutions.

Modern requirements to the level of proficiency in a foreign language enter into a certain contradiction with the teaching. A large number of educational programs are overloaded with general scientific and professional disciplines, which eliminates the possibility to increase, and sometimes save the number of hours allocated to a foreign language. That is why researchers in the field of teaching a foreign language insist on the actual development of the concept of the approximation of the quality of foreign languages teaching in higher schools to European standards and the implementation of this concept in the practice of training. This concept should be based on the principles of interdisciplinarity and integrity. It is necessary to take into account the integrative nature of both the language interaction itself and other methodological principles, namely the principle of considering the recommendations of the Committee on Council of Europe and the program «English for professional purposes».

Teaching students of a foreign language in a higher school requires improvements in the system of the provision of education, the creation of effective teaching systems, new technologies, forms and methods of training that could provide intensive mastery of the knowledge system and on this basis – a significant increase in the level of students' activity. There is a contradiction between the growing demands of the society and the level of professionalism of the individual and the existing practice of professional training of students, between high-quality non-consistency of educational activities and professional activities. Thus, it is possible to overcome this problem through the application of such forms and methods of education, which not only transmitted the totality of knowledge, but also ensure optimal personal development in general, the transformation of cognitive activity into

a professional one and, accordingly, changing needs, motives, goals. Particular attention is paid to the application of advanced technologies, for example, multimedia [19, p. 30].

In the process of studying, students of higher education agrarian institutions should acquire a level of communicative competence that would allow the use of a foreign language in establishing oral contacts with foreign specialists while participating in scientific conferences. In this connection, there are natural communicative situations in which it is necessary to understand the foreign language of a specialist and express their arguments on a particular problem. Among such situations are the following: 1) participation in international conferences, symposiums, congresses, in which it is necessary to understand the report or messages in a foreign language; 2) speech contacts during such meetings; 3) discussion of agreements, agreements on specialty; 4) speech contacts associated with joint ventures [11, p.24].

The foreign language course for students of Veterinary Medicine Faculty is based on the principles: from simple to complex; from the known – to the unknown. It is built in parallel on the basis of the knowledge, skills and abilities acquired by students during the basic study of a foreign language in a general education school, and the theoretical knowledge that is learnt in classes on various subjects and special courses. The general level of English-language competences of today's graduates of secondary schools leaves a lot to be desired. Testing, traditionally conducted with the first year students, shows not very optimistic results. Observations on the practice of professional foreign language teaching at the Faculty of Veterinary Medicine show that starting to learn this language, students have extremely vague idea of their future profession. That is why it is expedient to consider the general veterinary texts in the first semester, the language material of which does not cause particular difficulties, and from the second semester begin to read the thematic texts focused on the most recent achievements of veterinary science. Theoretical knowledge acquired by students in specialized classes on Anatomy, Histology, Cytology, Biochemistry, etc., is fixed and replenished in foreign language classes. The texts for reading have a professional orientation, expanding and deepening students' knowledge and are an additional source for the development of professionally oriented vocabulary.

The effectiveness of teaching foreign language for students of agrarian specialties is achieved through the application of various forms and methods of problem learning, the introduction of a systematic organization of individually differentiated communication, which simultaneously provides variations in content and dosage of the degree of complexity of educational tasks. Particular importance is given to the formation of lexical skills, as the primary goal is to create and expand the vocabulary of spoken orientation. Much attention is paid to working with terminology, because communication in a foreign language and the solution of any professional and everyday issues will simply be impossible without knowledge of the terms.

In recent years, the manufacturing sphere of communication has become much

more complicated. Economic, managerial, commercial, and legal areas of professional activity became widespread and developed, which necessitates the acquisition of professional skills by future professionals as a significant component of professional intercultural communication.

It is known that the main theoretical provisions of teaching foreign language communication are:

- the need to implement a communicative technology for the formation of skills and abilities in all types of speech activity;

- compulsory use of integrated training for all types of speech activity;

- taking into account individual interests and peculiarities of students, as well as taking into account the various actions, steps or methods of activity used by students in order to increase the efficiency of material mastering;

- compulsory use of truly communicative tasks contributing to the formation of communication skills, and modes of work that are adequate to the conditions of real communication.

The teaching of foreign language for future veterinarians includes the following components: skills and abilities to operate language material; language skills and skills that characterize the level of practical language proficiency as a means of communication; educational and compensatory skills that provide a culture of learning the language in the learning environment and the culture of communication with native speakers, as well as exercises of different types. It also includes such components as: communication, language situations, topics, texts, linguistic material and a system of knowledge of national and cultural features and realities of the country which language is learnt. It is equally important that students learn material from their specialty, learn special terminology and work with authentic sources.

Teaching a foreign language for professional communication provides the development of personal potential of students. In numerous studies it has been established that in the field of professional motivation the most important place belongs to the positive attitude towards the profession, because this motive is connected with the ultimate goals of the study.

Nowadays the question is how to learn a foreign language and what material to teach in order to meet the goals and requirements of professionally oriented education is also very important. One of the peculiarities of learning the language of professional orientation is that it should be as close as possible to the actual professional activity of a future specialist. Therefore, it is very important to carefully select the training material that would complement and deepen students' knowledge of specialized disciplines and promote the development of skills for working with professionally oriented texts.

As part of the teaching of a foreign language for professional purposes, the communicative approach is effectively implemented through the use of didactic games, when during the occupation the situation relates to the future profession of students or directly to the professional occupation of participants. Such games contribute to the development of intelligence, memory, affect the emotional sphere of

personality and motivate communicative, speech, cognitive and creative activities. Developed intellectual skills and a common culture of thinking – are features that have some value for specialist's self-education, which is the goal of the entire educational process in a higher education institution. In the process of mastering professional terminology, it is necessary to combine different learning tools. Textbook and visual teaching aids (tables, diagrams) are often used for these purposes.

There are several levels of foreign language proficiency: elementary, intermediate and advanced. The elementary level is characterized by insufficient awareness of the need for scientific and professional foreign language communication; lack of interest in learning a foreign language by external motivation; negative or passive attitude to foreign language communication; basic knowledge of a foreign language, limited communication skills in the domestic sphere; superficially intuitive ideas about the norms of behaviour abroad; insufficiently formed reflexivity.

The middle level involves: awareness of the need to speak a foreign language as a means of scientific and professional communication; cognitive motives and motives of self-affirmation in the profession, positive attitude to foreign language follow-up; presence of unstable interest in learning a foreign language; familiarity with the most common norms of business etiquette abroad; ability to analyze communicative behaviour.

For a high level are characterized by: awareness of the need to speak a foreign language as a means of scientific and professional self-improvement; internal motivation; steady interest in learning a foreign language; creative attitude to foreign language communication; developed scientific and professional communicative competence in all types of speech activity; deep knowledge of lingual and sociological features of a foreign language environment; high moral norms of communication; reflective culture.

Training of future specialists in the conditions of higher school cannot be effective without taking into account the specifics of training of agricultural students. One of the important indicators of students' professionalism is the ability to communicate, including – to communicate in another language. Teaching a foreign language in higher education is an integral part of scientific and professional development of future professionals and should be based on the principle of pedagogical interaction, cooperation and co-creation, as it increases students' activity in mastering not only specific foreign language terminology but also foreign language communication skills, technology of management of personal cognitive activity. Under such conditions, students master the technology of interaction in the system of relations “teacher – student”, the method of creating an atmosphere of mutual trust and interpersonal communication, which allows for self-realization of the individual in learning. The classroom develops the style of creative communication, the indicators of which are: the activity of the communicating parties, the volume and type of communication; the intensity of communication, which is manifested in the dynamics, the saturation of different types of interaction in the system “teacher –

student”; psychological comfort that provides self-disclosure of personality; creation of an individual program of communication with the student; interaction and cooperation of subjects of educational process.

It is necessary to allocate some characteristic features of training of a foreign language in higher agrarian establishments.

One of them is the short term of the foreign language course for students of non-linguistic specialties, which, unfortunately, does not allow covering the full range of professionally oriented and basic educational material.

The second feature is the availability of educational material, which should be understandable to students. This obliges the teacher to follow the sequence of learning a foreign language, starting with basic general knowledge of a foreign language and gradually moving to specialized material, which is already known to students in professional disciplines, to correctly select certain methods and techniques of learning, to develop ability to learn a foreign language, increase motivation to learn.

When learning a foreign language, students must acquire not only certain knowledge in the field of phonetics, vocabulary and grammar, but also skills and abilities in oral speech, reading and writing, without which it is impossible to use a foreign language as a means of communication. Mastering skills and abilities in the absence of a language environment is much more difficult.

The goal of teaching a foreign language to future specialists should be as close as possible to the main specialty with the use of a foreign language, so for educational institutions the main goal of learning a foreign language is, first of all, the development of professionally oriented competence.

In addition to the skills of free possession and communication on household topics, specialists need skills of professionally oriented translation in the relevant field of science or technology, the ability to use a foreign language in telecommunications networks. Conducting a spontaneous conversation on professional topics with native speakers orally or in writing involves a high level of active knowledge of a foreign language, as close as possible to the level of native language proficiency. This level of language proficiency requires from specialists not only knowledge and understanding of the laws of construction of the form of foreign language expression, but also a deep understanding of foreign language culture and realities.

When studying a foreign language, students must perform various types of work with books on the specialty: be able to obtain the necessary information, understand the content, have dialogic and coherent monologue at the level of both self-prepared and unprepared utterances, translate or review the necessary material, understand speech within a certain specialization.

Textbooks, various visual aids, audio and video materials, computer and technical means used in the educational and methodical complex allow modelling a foreign language environment and stimulating communication in a foreign language. Traditional educational materials are supported by electronic courses or textbooks, multimedia educational programs. Electronic textbooks, workshops, multimedia

training programs can be used not only to work on language material, but also to develop basic types of speech activity.

Teaching foreign language professional communication in non-language universities requires a new approach to content selection. It should be focused on the latest achievements in a particular field of human activity, reflect on scientific achievements in areas that directly affect the professional interests of students, give them the opportunity for professional growth.

Considering the great amount of scientific and professional terminology that students must learn, a small amount of hours spent on professional vocabulary learning the question of intensifying and optimizing the educational process arises. Expansion of vocabulary of students by professional terminology is carried out while studying all disciplines, but activation is already achieved through various exercises. The success of this work largely depends on the fact that terms perceived and mastered by students not isolated from each other, but by certain complexes. This should be taken into account in the texts of exercises in which the material should be presented on the basis of semantic, lexical, grammatical and word-building features. This approach helps to formally formulate professional terminological competence of students, and it will significantly increase the level of cognitive activity, which mobilizes the creative potential of the individual. The need for knowledge of professional terminology requires continuous professional self-improvement, which contributes to continuous professional growth. Then students have an increased interest in the future profession.

Conclusion. Foreign language for professional purposes is a compulsory component of specialist training. The content of teaching a foreign language for professional communication serves as an indicator of qualitative and quantitative characteristics of the level of communicative competence as a result of learning the language of students of non-language specialties. Foreign language for professional communication helps the student's development, his professional orientation. It has a great educational and developing potential. All this is capable of solving the problems faced by the teacher and students within the profile-oriented teaching of a foreign language.

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FINANCIAL, INFORMATION AND LANGUAGE AND COMMUNICATION  
SUPPORT FOR SUSTAINABLE DEVELOPMENT OF AGRIBUSINESS  
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**COLLECTIVE MONOGRAPH**

*In English*

*Responsible for the issue is Vasilieva Lesya*

*Materials are presented in author's edition*

*With the total or partial reproduction of materials of this monograph the reference to  
the publication is required*

*The views expressed in the publication are those of the authors*

Format 60x841/16. Cond. prin. sheets. 31,09. Тираж 100 пр. Зам. № 0610/1.

Published in printing House «Standard» (Private entrepreneur «Boyko V.V.»),  
st. K. Olga 6a, Dnipro, 49000.