PART 3. CURRENT NATIONAL AND GLOBAL FUNDAMENTALS OF SOCIAL AND ECONOMIC SYSTEMS' DEVELOPMENT

FOREIGN ECONOMIC ACTIVITY IN THE UKRAINIAN AGRARIAN SECTOR: STATE AND PERSPECTIVES

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International trade for each country is an important part of its international economic relations. In its development, the international trade of individual countries in different periods is based on various theories: Mercantilism, Absolute Advantage Theory, Comparative Advantage Theory, Porter's Theory of Competitive Advantages, Intra-Industry Trade Theory, Theory of Customs Union.

Obligatory is the implementation of state regulation of foreign economic activity of enterprises - subjects of international trade. One of the constituent elements of the foreign economic policy of the state is the foreign trade policy, the purpose of which is to ensure the balance of the economy and the balance of the internal market; stimulating progressive structural changes in the economy; promoting integration into the system of international division of labour.

The foreign trade policy of the state can be carried out in two types: free trade, characterized by minimal interference of the state in foreign economic activity and unrestricted access of foreign goods to domestic markets; protectionism, which involves state interference in international trade, the introduction of various restrictions in relation to foreign goods in order to support the national producer. However, in pure form, no one of this approaches are not used practically. All countries use protectionism to a greater or lesser extent, although the free trade policy has significant advantages.

In today's conditions it is virtually impossible to find a country's enterprise that would in no way be linked to aspects of international trade, international cooperation, etc. Kravchenko V.O., Gudakov O.K. note that low wages at domestic enterprises continue to be one of the key competitive advantages in the international division of labour system, which in general characterizes a rather inefficient economy of

the country [1]. Melnik T.M. emphasizes that the participation of countries with a transformational economy in the processes of globalization, the formation of mutually beneficial international economic relations, and the possibility of obtaining positive results from them depend on the effectiveness of the country's economic policy [2]. The most substantiated and comprehensive researches on the development of international trade in agricultural products, with the definition of positive and negative consequences under the conditions of different vectors of the country's international integration, are noted by Sabluk P.T., Bilorus O.G., Vlasov V.I. [3], Kvasha S.M. [4] and others. At the same time, we consider it expedient to systematize the consequences of the implementation of a multi-vector of international economic relations of Ukraine for different levels of participants - subjects of foreign economic activity.

As noted above, international trade in agricultural products to a large extent depends on the content of its foreign economic policy. Ukraine has defined European integration as the main strategic goal of its foreign economic policy. At the same time, the geopolitical location of Ukraine, as well as the rapid integration processes in the world, the strengthening of the globalization of the economy, determines the need for Ukraine to formulate a balanced multi-vector foreign economic policy.

Melnyk T.M. notes that the efficiency of the development of the national economy must be consistent with economic interests in the foreign trade sphere, among which the highest priority is ensuring: the implementation of competitive advantages in the international division of labour; structural optimization and balance of foreign trade operations; increase of competitiveness of the country in the world markets as a basis for guaranteeing national economic security; criteria of effective realization of foreign trade interests is their adequate understanding of all subjects of foreign economic activity [2].

The entry of Ukraine into world economic relations, the implementation of the declared integration aspirations for joining certain international groups, undoubtedly, affects the development of foreign economic activity of its individual branches, including affecting international trade in certain types of goods, in particular, in recent years has put in priority foreign trade in agricultural products and foodstuffs (Fig. 1).

Research shows that in the structure of Ukraine's exports in 2016 (Fig. 1), the output of agriculture and processing industries reached more than 40 percent, while in 2012 it occupied only a quarter, ahead of such leading until recently export-oriented branches of the economy as chemical (in 2016 - 5%) and the machine-building industry. The second place in the commodity structure of the country's trade was the trade in non-precious metals - 22 percent, which confirms the raw material nature of goods from Ukraine.

Taking into account that the agrarian sector remains the main supplier of foreign exchange earnings in Ukraine (43 percent), it is completely unreasonable to show increased interest in it in terms of forming geoeconomic directions of development

of foreign economic activity in the conditions of formation of international economic relations and realization of Ukraine's integration aspirations.

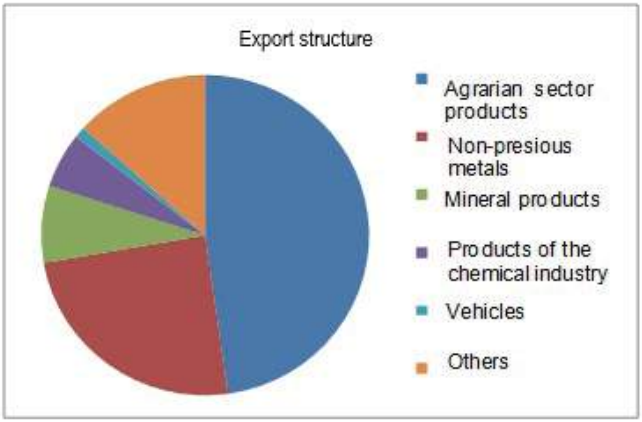

Fig. 1. Commodity structure of Ukraine's exports,%, 2016
Source: compiled according to [6].

Therefore, we will focus on the study of trends in international trade in agricultural products.

The analysis of foreign economic activity by the subjects of management of the agrarian sector of the country over the last ten years shows that it is characterized by, undoubtedly, steady tendencies to build up. At the same time, it should be noted that in 2005 - 2012 the volume of foreign trade in agricultural products has increased by 3.5 times, and in 2015, compared with 2012, they decreased by 1.4 times, and in 2016 - in 1,3 times.

The foreign trade balance during the period under review is positive and makes about 6-7 US billion dollars annually for 2015-2016. The volume of export of agricultural products in 2016 amounted to 15.45 US billion dollars, which is 2.3% more than last year. In 2016, among the agricultural products that formed a positive balance of foreign trade, it should be noted sunflower oil, wheat and maize, which together provided a surplus of almost $ 8.9 US billion dollars.

The negative balance was mainly generated by tobacco raw materials, frozen fish and citrus fruits (together - minus 762.8 US million dollars) imported into Ukraine [7].

It must be admitted that agricultural products are competitive in world markets, while its exports are raw materials. This problem was particularly aggravated after 2014, known for tense political events, the beginning of hostilities in eastern Ukraine, the breakdown in trade relations with Russia, whose market was until recently the main consumer of Ukrainian agricultural products, supplied after

more or less extensive processing. Although from January 1, 2016, the deep and comprehensive free trade area with the EU, which Ukraine has fought for so long and received certain preferences in trade in agricultural products and food, has been fully operational, foreign trade with the EU is limited by quotas and high quality and safety requirements until domestic products. In 2016, the structure of export of agricultural products and food products of Ukraine was raw material oriented.

Research shows that the largest share in the commodity structure of exports is sunflower oil (24.0%), wheat and corn (17.5%), and the share of fodder crops: soybeans, sunflower seed, barley is still almost 17%.

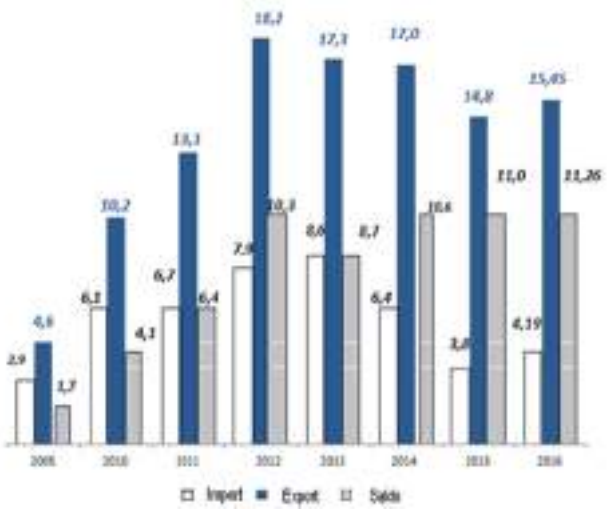

Fig. 2. Foreign trade of products of the agro-industrial complex of Ukraine, US billion dollars
Source: [7].

A detailed study of the commodity nomenclature of foreign trade in agricultural products and processing industry showed that in 2016 compared to 2015, there was a rapid increase in exports of such domestic products: live pigs - by 41.9 times, palm oil - by 4.5 times, other fresh fruits - 4.3 times, sunflower seeds - by 4.1 times, sugar - by 4.1 times, apples and pears - by 2.7 times, dried fruit - by 2.6 times, by malt - by 2, 1 time, and apricot and cherry - 2.1 times. The situation with export of livestock farming products is somewhat worse. Only sales of poultry products (meat and eggs), dairy processing enterprises, which undergo quality inspections on compliance with the established standards of the countries to which their exports are directed, were started.

Describing the directions of development of international trade in agricultural products and food in the context of expanding the vectors of international cooperation of Ukraine and development of international economic relations, we consider it appropriate to emphasize that Ukraine is an important player on the world markets for agricultural products and foodstuffs that has a strong export potential. And for its realization it is necessary to create a well-considered foreign trade policy, guided by the interests of the national economy [8]. The European Union has opened its markets in accordance with the Agreement, but the instruments for this are the gradual abolition of customs tariffs, the granting of duty free access within the framework of quotas, as well as the need for large-scale harmonization of Ukrainian laws, norms and standards with those operating in the EU in various direct or indirect ways with sectors trading (Fig. 3).

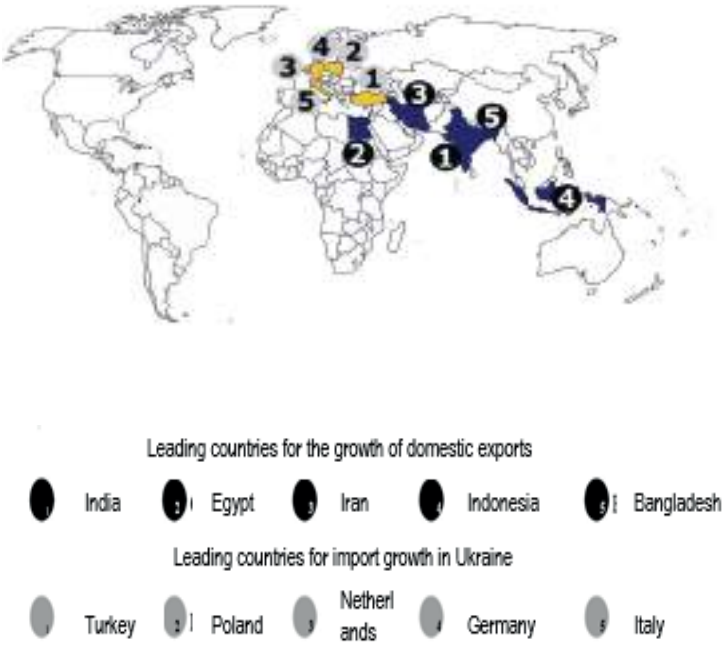

Fig. 3. Leader countries by growth in exports / imports in 2016 (compared with 2015)

The foreign trade policy of the state in recent years is aimed at the development of new global markets for products and food [9]. It is a non-alternative to ensuring foreign exchange earnings in the country, the implementation of export potential, and the entry into the international division of labour.

At the same time, any changes taking place in the world market will certainly

affect the conditions and results of domestic producers. Domestic agrarian products position on the markets of other countries of the world. Issues of stimulating the export of agricultural products and foodstuffs, as well as increasing its competitiveness on the world market in the context of Ukraine's integration aspirations and the intensification of globalization processes, are of particular urgency. The liberalization of foreign trade ties allows countries to significantly expand their external markets and use their comparative advantages appropriately.

Summarizing the geography of export operations, it can be noted that the countries of Asia (47.5% - exports) and the European Union (27.5% of exports) were the priority directions of agricultural products and food supply for Ukraine. In total, the number of partner countries for foreign trade in trade in agricultural products and food for Ukraine in 2016 amounted to: 174 - for exports and 161 - for imports. The largest importer of Ukrainian agricultural products in 2016 was India, which accounted for 10.2% of total exports, Egypt - 8.6%, China - 6.6%, Spain - 5.4%, the Netherlands - 4.6%, and Iran - 4.4%. It can be stated that Ukraine, with its agricultural products, significantly reduced its presence on such well-known markets of CIS countries, and in 2016 only 7.7 percent of its exports were directed to this market. The main partners from the CIS countries were Moldova and Belarus.

Thus, the development of international economic relations of Ukraine and the change in the areas of economic cooperation lead to a reorientation of international trade in agricultural products and foodstuffs [9, p.117]. During the period under study, international trade in agricultural products and foodstuffs in the country had a positive foreign trade balance, and in 2016 it provided more than 40 percent of foreign exchange earnings in Ukraine. During the analyzed period, it is characterized by a significant increase in the volume of export-import operations, the development of new markets for domestic products, as well as an increase in the number of partners in international trade. The implementation of various vectors of international integration of Ukraine has a direct impact on the development of foreign economic activity in the agricultural sector of the country. The implementation of the Agreement on the establishment of a free trade zone with the EU creates unprecedented opportunities for Ukraine to intensify activities to modernize production, increase product standards and introduce higher standards of living and management, which will be required in the short-term dimension of additional costs [10, p.246]. At the same time, the benefits in the medium and long term will be unquestionable and significant.

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STRATEGIC APPROACH TO LENDING TO AGRICULTURAL ENTERPRISES IN THE CONTEXT OF UKRAINE'S FOOD SECURITY

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Strategic approach to lending to agricultural enterprises in the context of food security of Ukraine.

In the conditions of instability of the economy, crisis of payments, intensification of inflation processes, the question of financing domestic agricultural enterprises from the effective activity of which depends on the level of development of the agroindustrial complex and the national economy as a whole, as well as the state of food security of Ukraine is very relevant.

After analyzing the provision of financial support to agricultural enterprises in Ukraine, it was found that it is now appropriate to focus on the following main areas of financing (Figure 1):

1) bank lending to agricultural enterprises;

2) state support of agricultural enterprises;

3) non-bank lending to agricultural enterprises;

4) granting loans to agricultural enterprises by international financial organizations and funds.

Let's consider in more detail each of the above-mentioned areas of financing.

1. Provision of loans to agricultural enterprises by international financial organizations and funds is provided for by various agreements to which Ukraine acceded.

In a situation where private investors and lenders are not ready to invest in Ukraine, international financial organizations play an active role in lending our agribusiness. Receiving funding from these organizations is a rather complex and lengthy process, but as a result you can get significant amounts for the required project and at relatively low interest rates.

At present, agricultural enterprises of Ukrinians can apply for loans directly to

international organizations, as well as receive loans through banking institutions, which are relevant programs (Table 1).

Table 1

The main international organizations providing loans in the agricultural sector

International Financial Institution	The name of the program	Program Description
IFC	Directly by IFC	Wide range of financing. The program is supported by the Austrian Ministry of Finance and the Ministry of Economy (EVD) of the Netherlands.
	IFC Agribusiness Standards Advisory Program	Assistance in implementing food safety in agro-enterprises.
	Ukraine Agri-Insurance Development Project	The program promotes the development of the agro-insurance system in Ukraine.
	Improving Corporate Governance Practices in Europe and Central Asia	The program is aimed at improving corporate governance
EBRD	The Eastern Partnership SME Finance Facility	It is aimed at lending to small and medium-sized businesses, in particular micro-enterprises, after the financial crisis
	UKEEP	EBRD Targeted Financing for Ukrainian Private Companies in Different Economic Sectors to Invest in Energy Efficiency and Renewable Energy Projects
	Micro lending program	Financing of production, services, agriculture, trade (only for PP and microenterprises).
German-Ukrainian Foundation	Agri-sector refinancing program	Financing of production, services, agriculture, trade (only for PP and microenterprises).

Source: systematized by the author on the basis of [1]

In our opinion, both large and small agricultural enterprises, which meet the criteria put forward by borrowers to these international organizations, can obtain loans for the development of their business.

2. Having examined the theoretical foundations of bank lending of agricultural enterprises and analyzed the practical aspects of the issue, we identified a number of urgent problems, the solution of which would facilitate the growth of lending by agricultural enterprises banks. Yes, we consider it necessary to indicate the following directions of improvement of bank lending of such enterprises, namely:

- development of new lending programs for agricultural enterprises, which take into account the features of the agro-industrial complex as much as possible;

- ensuring minimization of uncertainty in bank lending to agricultural enterprises;

- raising the level of risk management in lending to agricultural enterprises by creating additional insurance products and state guarantees;

- provision of a sustainable and effective mechanism for preferential lending to agricultural enterprises through the mechanism of compensation of interest rates by the state;

- development of credit co-operation in agriculture, which will allow to use commercial loans;

- synchronization of interests of participants of bank lending of agricultural enterprises;

- attraction of funds from international financial organizations and funds for long-term lending to agricultural enterprises.

Banks providing loans to the agrarian sector carry significant investment and credit risks, which are primarily related to the production risk and the risk of collateral.

Production risk in the agrarian sector is primarily associated with the cultivation of agrarian products. In this case, the risk arises from the non-receipt of the volumes of crops that were planned or the volume of cultivation of large and small cattle, as well as other livestock breeding for sale on meat and dairy products.

A pledge in the agrarian sector can be the future harvest or material and technical base (fixed assets that are involved in the production process). The risk of this collateral is associated with the risk of reducing the liquidity of said fixed assets due to their high depreciation, which, in turn, does not allow them to be used as collateral to the full extent. Taking into account seasonality of production and natural and climatic conditions, realization of the future harvest may not provide the necessary amount for repayment of borrowed funds that may be associated with a low purchase price of agricultural products [2].

A separate issue is the use of land as collateral in the course of issuing bank loans, but this issue is unsettled and because of the imposed moratorium on the sale of agricultural land, which complicates the lending of agricultural enterprises [3, 4].

To date, there are many programs to support lending to agricultural enterprises. Therefore, the main task is to comprehend and select the programs that are most suitable for each individual agricultural enterprise.

Consequently, domestic producers are interested in the possibility of lending to the future harvest, therefore, cooperation with banks is an integral part of the formation of the basis of food security of Ukraine and domestic consumers. Both domestic and foreign banks have confirmed the readiness to lend to agricultural production in such areas as: new technologies, equipment and equipment, development of breeding, solving of social problems in the countryside, etc.

However, despite the fact that using as a loan guarantee of the future harvest is a promising direction for improving the work and financial condition of agrarian enterprises, this kind of collateral is currently rarely used.

The general tendencies of the market of bank lending indicate that there is a gradual decrease in interest rates on loans, therefore, it is expected that from the side of agrarians, the services of banks for lending will be even more in demand.

The main reasons for the low level of use of future yields as collateral is the high risk associated with both the process of cultivating the harvest and the activities of agricultural enterprises themselves, namely:

- incompleteness and / or insufficiency of information about the activity of the enterprise,
- the state of the food market,
- demand and supply for crops or goods produced by the borrower-agrarian, etc.

Other causes of uncertainty in agri-lending are: natural disasters, volatility of natural and climatic conditions, diseases of plants and animals, and the sudden change in demand for products, unexpected disruption of raw materials supplies, etc.

An effective tool for minimizing credit risks in bank lending is insurance. However, insurance under agri-credit has been developed rather weakly, which is directly related to the imperfection of the legislative framework.

We consider it necessary to regulate the issue of the introduction of a separate license for agri-insurance for insurance companies, which will allow to create the appropriate infrastructure, prepare personnel, and develop modern standard insurance products that would contribute to the development of this segment of insurance and agro-crediting in Ukraine.

The issue of insurance is very relevant in case of use as a pledge of future harvest. In Ukraine there is almost no system of insurance of crop insurance, but in developed countries the share of insured crops is 15-20%, and in Ukraine - only 3% [5].

Studying foreign experience in the field of agri-insurance undoubtedly points to its advantages for business, namely:

- promoting the provision of food security of the state and enhancing export potential;
- ensuring the stability of the income of both agricultural enterprises and lending institutions;
- prevention of bankruptcy in unfavorable years and support of economic activity of agricultural enterprises in the future;
- stimulation of improvement of technologies of production of agricultural products;
- assistance to increase the trust of borrowers, which allows to attract loans and, accordingly, expand production;
- performance of the function of a predicted and cost-effective alternative to direct payments from the budget.

An important aspect of the process of raising trust in insurance in the case of bank lending to agricultural enterprises is the training and explanatory work of

the bank manager with the borrower on the necessity and benefits of insurance. Agrarians with great caution and misunderstanding relate to the insurance process, considering it as an unnecessary expense item, which increases the already high cost of using credit funds.

3. The study of the issue of providing state support to agricultural enterprises has brought the effectiveness of cooperation between banking institutions and the state, which significantly reduces uncertainty and reduces interest rates on bank loans. But along with this, the mechanism of providing state guarantees should be balanced, since non-repayment by the borrower leads to spending the state budget funds.

State guarantee is the obligation of the state (represented by the government) to fully or partially execute payments in favor of the creditor in case of non-fulfillment by the borrower of obligations on loans received [5].

Due to the inherent nature of the agricultural enterprises' activities, the aforementioned threats, with the help of the state, can improve the situation with their lending.

However, there are a number of problems, only in case of solving which at the level of the state can promote bank lending to agro-enterprises, namely:

- first of all, it concerns measures to improve, systematize and simplify the mechanism of preferential crediting of agricultural enterprises,
- in the second - the use of non-material methods of support to enterprises agro-industrial complex.

As already noted, the main reason for the limited lending to agribusinesses is the high cost of loans, which is why there is a need to find ways to reduce their prices. The main solution to this problem is to provide compensation for interest rates at the expense of budgetary funds. However, this mechanism is constantly changing, it is non-transparent and, in difficult economic times, is firstly curtailed or minimized [6].

So, at the moment, a rather small part of banking institutions has such joint programs with the state in compensation of part of interest rates. At the same time, the process of selecting potential actors who can use the program specified deserves special attention.

Since the assessment of the possibility of granting a preferential loan should be made individually for each individual enterprise, it is not always transparent for both agricultural enterprises and the public. For the same purpose, we propose to differentiate the size of the compensated interest rate and the amount of general fund resources to divide the interest rate compensation into funds for borrowers depending on the following criteria:

- the term of functioning of the agricultural enterprise;
- credit history of the agricultural enterprise;
- financial position according to NBU methodology [7];
- the size of land plots owned or leased;

- possession of a liquid collateral, etc.

For example, for the category «A» borrowers we propose to include large enterprises (agroholdings) with positive overall financial indicators, high profitability, availability of more than 1,000 hectares of land, positive credit history, possession of liquid collateral, experience with effective use of pre-owned received preferential loans, etc.

Borrowers in the category «B» offer to assign a company with a life span of 3-5 years, which has from 50 to 1000 hectares of land, a small profit or break-even (in the first year is allowed loss-making). Such agricultural enterprises may not have a liquid collateral and a credit history in banking institutions, but all this follows a clear trend of growth and development of the economy, a gradual expansion of activity.

Of course, it's clear that B-class customers will be less attractive to banking institutions and the state, as they are more risky, which is why a banking institution can set a higher interest rate to minimize its risks, and the state - to provide a higher percentage of compensation. The implementation of this scheme will solve the dilemma of «low profitability - the lack of the possibility of obtaining a loan, the lack of the possibility of obtaining a loan, the impossibility of obtaining high profits» and will provide an expanded reproduction of the agrarian sector.

We believe that the criteria presented are of a recommendatory nature, and if the company meets three or fewer criteria, then a negative decision on lending is imposed on it if more than three criteria are positive.

In the event that a positive decision is obtained by more companies than there is the possibility of crediting on preferential terms, in other respects, in our opinion, it is necessary to take into account the history of previous loans for improved conditions and give preference to enterprises that did not have the opportunity or at least previously enjoyed state support.

Consequently, the proposed scheme will improve the situation with preferential lending to agrarian enterprises in terms of equitable distribution and use.

4. The experience of developed countries convincingly suggests that reducing government expenditures in support of agricultural producers is possible due to the efficient system of lending to agricultural enterprises through the creation of cooperative associations (agribusinesses).

Important place in the system of bank lending to the domestic agricultural sector should be taken by cooperative associations (agribusinesses), the creation of which our state pays insufficient attention. However, they have a significant need, especially for the financing of small farms and farms. Reforming the system of domestic cooperation will allow agricultural producers to function effectively in complex, first and foremost crisis, conditions, to concentrate as much as possible on agrarian capital, to manage financial flows quickly, to take into account regional features, seasonality and specialization of agricultural production.

Cooperative association (agro-society) is a form of voluntary association of

agricultural enterprises and farms based on the principle of territoriality on the basis of voluntary membership in order to create favorable conditions for their activities, providing financial and non-financial assistance to its members at the expense of share subscriptions.

Taking into account that, according to the legislation, such a unification is a non-profit organization, it will facilitate alternative support for small and medium-sized agricultural enterprises in certain regions, which will have a positive effect on food security.

The importance of lending to ensure the stability of national economies and banking systems grows significantly in the context of the global financial and economic crisis, as evidenced by IMF materials «Cooperative Banks and Financial Stability» [8].

Study of foreign experience has allowed to establish significant advantages of credit cooperation of leading Western European countries in the conditions of crisis phenomena in the world economy, namely:

- minimization of uncertainty and greater stability compared to commercial banks due to the high level of capitalization and sustainability of the resource base;
- branching system, which allows to optimize financial flows, effectively distribute risks, reduce costs, optimize the range of banking operations, maximally protect co-operative infrastructure from undesirable environmental impacts;
- a stable refinancing system (due to autonomy);
- the protection of the cooperative banks system from the domino effect, thanks to information on the real financial status of local cooperative banks concentrated at the second level [7].

In addition to crediting the current activities of farmers, cooperative associations (agribusinesses) can invest in their fixed capital and construction projects, to provide their shareholders with preferential loans at low interest rates under state financing programs. Also, most cooperative associations (agribusinesses) can purchase agricultural products, marketing agrarian products and financing operations with farm equipment.

The main advantages of creating cooperative associations (agribusinesses) in Ukraine can be considered as follows:

- greater independence of cooperative associations (agribusinesses) in making business decisions, which will lead to less risky lending operations and will in the future reduce the possibility of quick resale of collateral to other persons;
- taking into account the territoriality of the activities of cooperative associations (agro-trade associations), decisions on granting loans or other active operations are taken by management by an order of magnitude faster than employees of specialized commercial banks, which has an intricate and multilevel organizational structure in its structure;
- employees of cooperative associations (agro-trade associations) are more informed about the modern economic development of the region in which it operates

and can more accurately assess the various threats that may arise in the process of granting loans to enterprises in the region and in other active operations;

- as a rule, operating in a particular region, cooperative associations (agribusinesses) eventually create an effective network of branches and offices, which increases the quality of service provision to clients;

- the possibility of developing the fundamental principles of the activity of cooperative associations (agribusinesses) and establishing a system for monitoring compliance with them;

- the possibility to involve cooperative associations (agribusinesses) of individuals and legal entities that do not have significant temporarily free financial resources, especially in the context of constant increase of the requirements of the National Bank of Ukraine to the amount of authorized capital.

So, if a cooperative union (agro-society) is created as a limited liability company, then the requirements for its authorized capital are regular and not changed by the state regulators, and may be changed only by the decision of the founders. If the owners are more than 50 people, this can ease solving the problem of finding additional financial resources; provision of quality services to the inhabitants of the region where the agro-business community operates, which will in the future increase confidence in it and provide a more stable resource base for functioning, etc.

However, along with the benefits of functioning of cooperative associations (agro-trade unions), there are also shortcomings inherent in their activities in Ukraine, namely:

- absence of historical experience of functioning of cooperative associations (agro-trade unions) in independent Ukraine;

- complicated procedure of creation of cooperative associations (agribusinesses) in comparison with banks, which were created as joint-stock companies;

- a more complex procedure for the management of cooperative associations (agro-businesses), since all founders are equal and do not have the right to vote, which may sometimes lead to the impossibility of adopting consolidated and co-ordinated decisions;

- the absence of normative and legislative norms governing the activities of cooperative unions in Ukraine, taking into account the specifics of the activities of these institutions;

- Limited activity of cooperative associations (agro-trade associations) only in a certain territory, etc. [9-11].

The revival of the system of cooperative unions (agro-trade unions) in Ukraine requires the implementation of organizational and economic measures. It is the state which should promote the development of cooperative relations both through their legislative provision and through direct participation in the creation of such associations.

Thus, the use of foreign experience in the organization and functioning of credit

cooperation in agriculture for Ukraine can be a significant impetus for the emergence of the crisis situation, as well as the sustainable development of the agrarian sector of the economy. The system of cooperative associations (agribusinesses), which is widespread in Europe and has high confidence among the population, is stable and resistant to financial turmoil, promotes the development of the agrarian sector of the economy. Consequently, the study of foreign experience, especially German, French and Polish cooperative associations, shows that they are exceptionally positive in the context of the global financial and economic crisis.

5. In addition, a less-important instrument for financing agribusiness development in the conditions of limited access to loans is leasing, the benefits of which before ordinary lending are as follows [12]:

• An agricultural enterprise can lease property for an investment project without having its own funds, as in the case of lending, which requires at least 20-30% of its own resources;

• clearance of leases does not require additional collateral, as the provision of the leasing agreement is the property leased;

• leasing utilization enhances the commercial effectiveness of the investment project, in particular through tax winnings and the use of accelerated depreciation;

• leasing payments are more flexible and are determined taking into account the real possibilities of the lessee;

• the lease price may be less than the price of an ordinary loan, since the ownership of the subject of the collateral remains with the lessor, correspondingly reducing its risks.

However, for most agricultural enterprises, the use of leasing is also a rather expensive way to upgrade fixed assets due to the lack of regular payments due to seasonal agrarian activities.

Having systematized the main directions of providing financial support to agricultural enterprises of Ukraine, we consider it expedient to propose an algorithm for choosing a source of credit resources.

In accordance with the proposed algorithm, agricultural enterprises are choosing sources of credit to finance their poverty.

Consequently, synchronizing the interests of participants in bank lending to agricultural enterprises is a way to improve lending in this area, which is interested in all the participants in these relations, and especially the enterprises themselves.

Unconditional interest also has a banking institution, as agriculture during the crisis periods shows high performance, and, despite the specificity and riskiness of the inter-sectoral complex, the percentage of overdue loans granted to the agrarian sector is only 7-8% on average.

The state, which today can not finance the agro-industrial complex on its own, needs to actively promote the development of bank lending, since, first of all, the agro-industrial complex provides food security of the country, and in the second, forms a third of GDP.

Thus, the state should promote the economic interests of the creditor and the borrower-enterprise of the agro-industrial complex by regulating and mitigating the negative effects of the threats that determine the development of credit relations.

In order to ensure efficient lending to agricultural enterprises, it is necessary to eliminate the factors that slow down the process by overcoming uncertainty and minimizing risks, improving existing and developing new banking products for crediting the agrarian sector, as well as creating new sources of lending (development of credit cooperation).

So, summing up the above-mentioned, we consider it necessary to propose the proper definition of «the program of crediting agricultural enterprises in the context of providing Ukraine's food security», which should be understood as promoting the development of new credit products for the financing of agricultural enterprises in order to strengthen the food security of the individual region and the state as a whole.

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TRADE POLICY AND ECONOMIC DIVERSIFICATION IN NIGERIA

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Nigeria is a resource-rich country, with about 34 different minerals, including gold, iron ore, coal and limestone. It has about 37.2 billion barrels of proven oil reserves, 187 trillion cubic feet of proven natural gas1 and produces about 2.3 million barrels of oil per day. It also has about 70 million hectares of farmland. The structure of the Nigerian economy is oriented toward the production of two primary products: agricultural products and crude oil (Neszmélyi, 2014).

The Nigerian national economy faces very significant challenges. From among these, three factors seem to be the most important: the predominance of the hydrocarbon-energy sector, the backwardness of agriculture and food production and the underdevelopment of the manufacturing industry – moreover the delay of the structural shift in the economy. Since the late seventies, more than 90% of Nigeria's foreign exchange earnings come from the sale of crude oil and natural gas products. The significance of non-oil products in the export of the country was strongly reduced, practically marginalized (Adenugba & Dipo, 2013). The government recognized the significant risks of the situation:

• the export performance of the country and its foreign exchange earnings depend heavily on volatile oil prices;

• budget revenues are heavily dependent on oil extraction and export;

• hydrocarbon reserves are limited.

The diversification of the economy, but most notably of export, is of paramount importance to ensure that the budget can sustain the essential foreign exchange coverage for necessary import goods after the depletion of oil stocks.

Comparatively, poverty and inequality in Nigeria has strong regional concentrations, resulting in significant levels of regional disparity. As oil reserves

can be found mostly only in the southern region of Nigeria (The Niger-Delta Region which is made up of the following oil producing states: Abia, Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Imo, Ondo and Rivers states) (Oviasuyi & Uwadiae, 2010). The one-sided economy and monocultural exports can contribute to the further deepening of the regional, social and economic disparities in the future.

The questions arise: what success did Nigeria achieve in the field of diversification? How successful are the export promotion measures? How do import regulations and investment promotion serve the development of the economy?

Materials and methods. This research adopts a non-experimental research design. The data used were obtained from secondary sources, such as the Federal Government of Nigeria and the International Trade Administration. Other sources: Nigeria Customs Service, Nigerian Export Promotion Council Act and the Observatory of Economic Complexity. The method used is a descriptive-analytical exploration of economic, social and political aspects and elements that influence Nigeria's foreign trade policy, and the utilization and application of relevant indices such the Economic Complexity Index and the Revealed Comparative Advantage Index.

The Economic Complexity Index (ECI) is a measure of the relative knowledge intensity of an economy by considering the knowledge intensity of the products it exports. ECI has been validated as a relevant economic measure by showing its ability to predict future economic growth. (The Observatory of Economic Complexity (a), 2017). The Revealed Comparative Advantage Index (RCA) is used in Balassa's interpretation: a country has RCA if it exports more than it normally would if all countries exported said goods equal to the share of total world trade that the product represents. (The Observatory of Economic Complexity (a), 2017)

Government strategies to promote non-oil exports. The issue of economic transformation through effective diversification has taken a centre stage in the country's economic policy since the 1970's.

a.) The Nigerian Export Promotion Council

The Nigerian Export Promotion Council (NEPC) was established in 1976. The functions of the council are extensive, but the most important are to:

• „promote the development and diversification of Nigeria's export trade;
• assist in promoting the development of export-oriented industries in Nigeria;
• spearhead the creation of necessary export incentives;
• actively promote the implementation of export policies and programmes of the Federal Government;
• co-ordinate and monitor export promotion activities in Nigeria." (Nigerian Export Promotion Council Act, 2017)

To achieve these goals, the NEPC is expected to be an information hub for manufacturers and exporters; to provide assistance with most areas of export trade (e.g. administration, packaging, financing, et cetera); to undertake studies and advise and assist the government and help exhilarate the export-growth as well as

"pursue the simplification and streamlining of export procedure and documentation on a continuous basis" (Nigerian Export Promotion Council Act, 2017).

b.) The Export Expansion Grant

In 1986 the Federal Government issued the Export Incentives and Miscellaneous Provisions Act. The incentives range from tax exemption to duty drawbacks as well as other forms of grants:

- Export Development Fund (EDF);
- Export Expansion Grant (EEG);
- Export Adjustment Scheme Fund (EAS).

The only still functioning grant in 2013 was the EEG; after a revision in 2005 and administration by the Nigerian Customs Service (NCS) subsequently suspending and reactivating it 8 times between 2005 and 2013 (Deloitte, 2015).

Table 1

Export Expansion Grant eligibility criteria for company evaluation

Eligibility criteria	Threshold (%)	Weight (%)
Local Value Added	20	20
Local Content	35	20
Employment (Nigerian)	500 persons	20
Priority Sector	Manufacturer Only	10
Export Growth	10	25
Capital Investment Growth	10	5

Source: http://www.tradeinfong.com/2012/10/export-expansion-grant-eeg-scoring.html

Table 2

Export Expansion Grant scoring key

Scoring Key	Exporters of Finished Goods	Exporters of Semi-Processes Goods	Exporters of Commodities & Minerals
Score Band (%)	EEG Rates (%)		
≥70	30	15	10
≥50	25	10	7.5
≥25	20	5	5
≥5	15	0	0
<5	0	0	0

Source: http://www.tradeinfong.com/2012/10/export-expansion-grant-eeg-scoring.html

The EEG is a direct export subsidy which can range between 5-30% of the FOB value of exported goods, allowing Nigerian exporters to offer competitive prices on the world market. It is a prerequisite to repatriate the total sales revenue within 180 days (Proshare, 2015). Table 1 & Table 2 show the revised criteria for companies

to qualify for the EEG and the level of support as a percentage of the FOB value.

The application and approval of the grant is extremely complicated and bureaucratic.

After 1999 exporters received the subsidy in the form of Negotiable Duty Credit Certificates (NDCC), which could be used for import and excise duty. As other export incentive measures provide relief for duties for import inputs for export-producing companies, exporters often exchanged NDCC on discounted rates and provided banks with NDCC collateral for loan repayment. (Deloitte, 2015). In 2013 the system was revised again, but were suspended again in August 2013 due to suspected abuse. This has caused extraordinary issues, since the NSC has no longer honoured the NDCC. The repayment of loans disbursed under NDCC cover proved to be a challenge for both lender and borrower. The price advantage of Nigerian exporters has dispersed, which may have led to failures of transactions. Excise duties and customs duties had to be paid with currency, that reflected in the pricing structure of imported goods (Deloitte, 2015). In the spring of 2017 the system was re-established, but the NDCC was replaced by the Export Credit Certificates (ECC) (KPMG, 2017).

c.) Nigerian Export Processing Zone (EPZ)

The Federal Government of Nigeria has passed a Free Zone Law to create a business-friendly environment benefiting from various economic incentives.

„These incentives, established by Act No. 63 of 1992 and which have been improved even more in subsequent legislation, are the following:

• Complete holiday from all federal, state and local government taxes, rates, and levies.

• Duty free importation of capital goods, machinery/components, spare parts, raw materials and consumable items in the zones.

• 100% foreign ownership of investments.

• 100% repatriation of capital, profits and dividends.

• Waiver of all imports and export licenses and on all expatriate quotas.

• One-stop approvals for permits, operating license and incorporation papers.

• Permission to sell 100% of goods into the domestic market (However, when selling into the domestic market, applicable customs duty on imported raw material shall apply).

• For prohibited items in the custom territory, free zone goods are allowed for sale provided such goods meet the requirement of up to 35% domestic value addition.

• Waiver on all expatriate quotas for companies operating in the zones.

• Minimize delays in the movement of goods and services" (Nigeria Export Processing Zones Authority, 2017).

The obvious purpose of the creation of EPZ is to attract FDI. The duty-free availability of capital goods, consumer goods, components, machinery, equipment and furniture enable the establishing of production at reduced cost. The duty and

tax-free import of raw materials for goods destined for re-export avoids the lengthy procedures for claiming drawback of duty previously paid and the costs of financing these duties. The waiver of all import and export licenses spares time and reduces cost for license applications and enables the EPZ manufacturers to use imported raw materials prohibited for domestic manufacturers. All these exemptions result in lower costs for EPZ exporters and increases the possibility of export at competitive prices.

The declared reason for import bans is to facilitate the growth of domestic production of prohibited goods. The permit to sell the prohibited goods in-country with 35% domestic value addition in the EPZ seems to harmonize with this goal. However, the permission to sell these goods in the domestic market raises concerns. Along with exemption from all taxes, rates and levies, this creates a significant competitive advantage in the national market as well as a budget deficit. Complete holiday from taxes is a too high price to pay to appeal to investors. The regulations are inconsistent. The restrictions of the local content regulation lose significance, if foreign capital can avoid it by manufacturing within an EPZ. The One-stop approvals may have significant attractiveness in Nigeria's overly bureaucratic environment. Overall, EPZs gained momentum slowly and most of them are still connected to the oil industry.

d.) Manufacture-in-Bond Scheme

The program seeks to eliminate the adverse effects of the restrictions imposed by investment and import regulations on the expansion of export-oriented production.

This scheme is designed to encourage manufacturers to import duty free raw material inputs and other intermediate products – whether banned or not – for the production of goods for export, backed by a Bond issued by any recognized Commercial Bank, Merchant Bank, Insurance Company or the Nigerian Export-Import (NEXIM) Bank. The bond will be discharged after evidence of exportation and repatriation of foreign proceeds have been produced. (Nigeria Customs Service (a), 2017) (Federal Government of Nigeria, 2005)

It allows exporters to import the raw materials, semi-finished products and packaging materials for their production, regardless of any import ban. Companies do not need to finance reclaimable import duties, however, have to cover the costs of issuing the guarantee. This scheme was suspended and after shortly reinstated (Bivbere, 2006).

Import policy. Nigeria heavily restricts import with a multitude of different sanctions and barriers. (Nigeria Customs Service (b), 2017) It bans bovine meat and offal as well as most other sources of meat (pork, sheep, goats as well as edible offal of mules, asses and horses). The justification is the prevention of bovine spongiform encephalopathy, however, the import of these items is also banned from countries free of the disease. It is a similar case with live and dead poultry (except day-old chicks), with the stated rationale being avian influenza. These bans are excessive compared to international standards and most likely serve as protection for the

national industry. Other than food, Nigeria also bans certain drugs, water, textile, footwear, used motor vehicles older than 15 years, furniture etc. These include those 41 items excluded from official foreign exchange windows for import. (Nigeria Customs Service (b), 2017). Other than outright bans, other kind of obstructions are also present. All food, cosmetic, pesticide and drug imports are required to be certified to be safe for human consumption by national authorities, regardless of origin. However, Nigeria does not have the necessary capacity to carry out these inspections in a timely manner, which resulted in multiple tons of food spoiling at the border (Froman, 2015).

As a member of ECOWAS (Economic Community of West African States), Nigeria aimed to harmonize its Common External Tariff (CET) Book with the proposed tariff regime, but in some cases, unilaterally raises the duty on some tariff lines, in direct opposition of the ECOWAS CET. For example, no effective tariff rates should exceed 70 percent according to ECOWAS CET, but Nigeria has 15 tariff lines over this threshold, highest being tobacco (135 percent for cigars and cigarettes; 85 percent for tobacco and other tobacco products), rice (120 percent), wheat flour (100 percent), and sugar (80 percent) (Froman, 2015). The declared aim of a strong import limitation is to develop domestic production. In markets protected by high customs duties and bans, domestic producers can sell at an elevated price level, enabling growth in production. However, the borders of the country are porous, leading to the smuggling of illicit products and the flowering of the black market. The high price level is also guaranteed, although the surplus profit does not aid further growth and narrows down the scope of potential buyers and the state loses potential revenue collected through the use of tariff instruments.

FDI Policy – The issue of Local Content. The Nigerian government tries to not just attract foreign direct investors, but with mandated local content regulations, make them a propelling force in the growth and diversification of the economy. The government established a law in the Oil and Gas sector in 2010 titled Oil and Gas Content Development Act, which will pose as a model for future implementations in other areas of trade. It mandates local content in the industry, within it widest definition, meaning any business conducted with or in the sector. It requires international companies to use a Nigerian Bank for at least 10 percent of their annual profit. Whenever possible, positions should be filled with Nigerian citizens – finance and human resources positions are practically reserved for nationals. Foreign worker allotment has to be negotiated individually by companies with The National Petroleum Investment and Management Services (NAPIMS) and positions held by foreigners first have to be proven to require expertise not found in the Nigerian labour pool. Furthermore, relocation of said workers also face challenges such as unnecessarily long waiting time for approval of NAPIMS and by visa authorities. Companies are also required to issue a "Nigerian Content Plan" that establishes how local content can be increased within operations. This plan has to be approved and followed – failure to do so can mean fines up to 4 percent of the contract value

or overall contract cancelation.

In December 2013, the National Information Technology Development Agency (NITDA) issued the Guidelines for Nigerian Content Development in the Information and Communications Technology sector. Multinational companies are obligated to source hardware products and personnel for cell towers as well as base stations and host data locally; computer hardware can only be procured from NITDA-approved original equipment manufacturers by government agencies (Froman, 2015).

The guidelines also include other restrictions, such as mandatory maintenance of research and development in-country, but more alarmingly localization processes require the disclosure of source data as a necessity for business operations. These protocols are not yet fully implemented, partially due to the fact that major U.S. companies objected to the application of some of the guidelines. (International Trade Administration (a), 2017). In both the Oil and Gas and the Information and Communications Technology sector, these local content provisions are the cause for significant dissatisfaction from the affected companies. The rules and guidelines themselves are particularly restrictive and U.S. companies have expressed concerns that the administrative processes are subjective and lack full transparency (International Trade Administration (b), 2017), which is a high concern in Nigeria, since corruption is still a prominent problem (Froman, 2015).

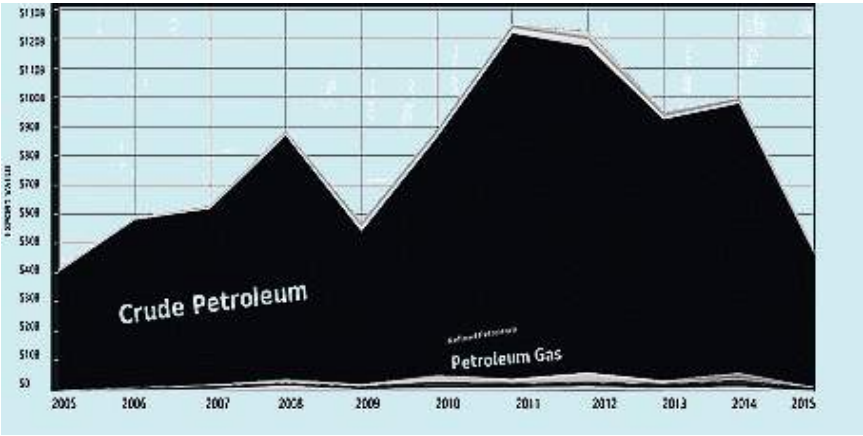

Fig. 1. Nigeria's export between 2005 and 2015, stacked
Source: The Observatory of Economic Complexity (c), 2017

Nigeria's foreign trade between 2005 and 2015. An examination of Nigeria's export performance between 2005 and 2015 show no material change in exported goods. The economy still depends on hydrocarbons. Nigeria ranked as the 120th-121st on the Economic Complexity Index between 2005 and 2010, however, by 2014

the economy's complexity improved significantly, ranking as 103rd with 33 goods exported with higher than 1 Revealed Competitive Advantage (The Observatory of Economic Complexity (b), 2017). As shown on Figure 1, the ratio of hydrocarbons in export exceeded 90% in the examined period. Other than oil, Nigeria is rich in other natural resources.

The climate, soil conditions and a long coastline provide abundant opportunities to connect to the global value chain (Ogunleye, 2014). Cocoa, whose RCA index varies between 11 and 38, is considered a traditional export item. Exports of processed cocoa products compared to crude cocoa beans are very low.

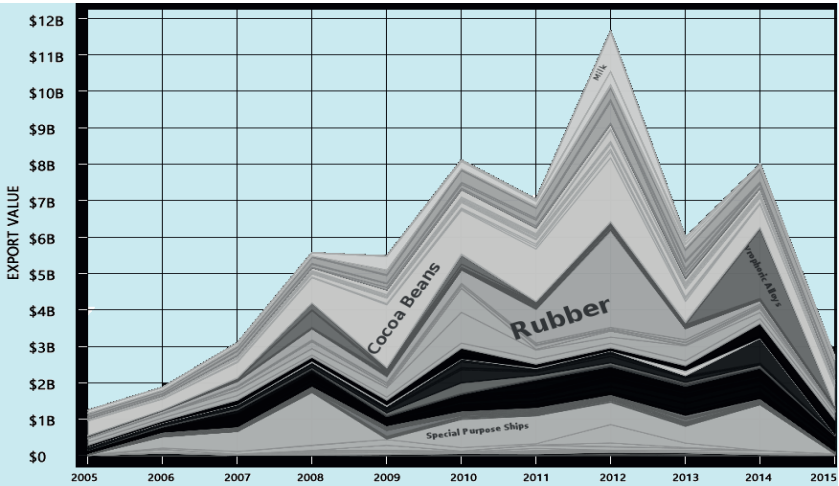

Fig. 2. Nigeria's export between 2005 and 2015, oil and gas omitted, stacked
Source: The Observatory of Economic Complexity (c), 2017

Exports of special purpose ships, which have the highest added value ratio among the alternative export items, have considerable potential. Among non-oil products, these vessels are the most stable export goods, although their RCA index ranges from 2 to 12. Unfortunately, the lack of petrodollars has also significantly reduced the potential of this industry in 2015. Tanned goat hide's RCA index hasn't dropped below 25 even in the worst years; in 2010 it exceeded 77. Other animal leathers can also be suitable export items. Other oily seeds are also promising export products with an average RCA of approximately 10. Rubber, pyrophoric alloy and milk also brought significant revenue to the non-oil sector. Overall, the performance of non-oil export products fluctuates immensely, reflecting the inconsistent and inadequate export policy.

The Authorized Economic Operator (AEO) programme. Polner (2010) pointed out that Pillar Two of the WCO (World Customs Organisation) SAFE Framework

of Standards to Secure and Facilitate Global Trade provides global standards for launching an Authorized Economic Operator (AEO) programme. In addition, many WCO Members who have established AEO programmes are seeking to formalize AEO mutual recognition arrangements (MRAs) with other Customs administrations. The SAFE AEO is rooted in the revised Kyoto Convention, which contains standards on "authorized persons", and national programmes. The SAFE AEO also has common elements with customs compliance programmes, which are focused on fiscal rather than security criteria. The SAFE Framework defines an AEO as: "a party involved in the international movement of goods in whatever function that has been approved by or on behalf of a national Customs Administration as complying with WCO or equivalent supply chain security standards. AEOs include inter alia manufacturers, importers, exporters, brokers, carriers, consolidators, intermediaries, ports, airports, terminal operators, integrated operators, warehouses, distributors". Therefore, the SAFE AEO programme is intended to include all economic operators to enhance security along all points of the supply chain (Polner, 2010). In Africa still not too many countries have launched their AEO programmes. SADC Members are working to develop an AEO programme for the region. Namibia, Botswana and South Africa are working together on a number of issues in AEO design and implementation. The East African Community (EAC), which comprises Burundi, Kenya, Rwanda, Tanzania and Uganda are also working to develop a regional AEO programme (Polner, 2010).

Conclusion and suggestions. There is no dispute among researchers about the data and facts regarding Nigeria, and there is a wide consensus on severity of the situation. Due to the specificity of the subject, the authors have not found literature being in contradiction with the applied methods or with the conclusions drawn from the data. Nigeria still can be regarded as a monocultural economy. A diversification process has started since 2005, but has yet to mature into a significant impact on the economy. There is no breakout point outlined, though there are prospective sectors with high RCA. In principle, export promotion measures meet the objectives, however the mechanism of practical implementation is inefficient and malfunctioning. It should be noted that the EEG, while being responsible for the success of export promotion, is not an appropriate long-term strategy. Providing direct export subsidies, in addition to violating WTO rules, do not create any long-term advantage in the supported industry, merely eliminates the current competitive disadvantage. Resources should be used to modernize production and increase added value in order to have a substantive, actual competitive advantage.

The Nigerian political leadership and economic decision-makers have already recognized the need to re-structure the economy, and to focus on the food and agriculture and the manufacturing sector. All these are of key importance in order to alleviate frictions and tensions among the various ethnic and religious groups of Nigeria, and to further develop their peaceful and long-standing co-existence in the country (Neszmélyi, 2016).

The main reasons for failure are too complicated: regulations, constant revisions, high unpredictability due to incessant modifications and excessively bureaucratic access. Export incentives and other economic development policies are not harmonized. On one hand, there are strict regulations, on the other the government itself offers the loophole. Control of export items is superfluous, it does not increase trust, but multiplies costs and the duration of export administration. Import control and investment control set administrative barriers instead of operating with economic incentives. The rigid local content regulations, though the underlying intentions are praiseworthy, discourage foreign direct investors. Extending the oil industry model to other industries could be perilous for investor attraction and retainment. The regulations are unclear, occasionally in direct opposition to WTO standards, use is protracted, inconsistent and inadequate, leaving scope for already high-levels of corruption, which makes the business environment uncertain.

Contrary to utilizing import bans that are difficult to impose, it would be preferable to apply safeguard duties or quantitative restrictions in the sectors in question. Instead of compelling mandatory local content, Nigeria could use economic incentives such as tax relief or other discounts for co-operation with the directive and apply surcharges for non-compliant businesses. The most beneficial action would be the consistent implementation of a transparent, well-thought-out, predictable and long-term regulation. It would be beneficial to leave the control to the free market regarding export transactions, and oversee the consistent and uniform application of rules by officials – this can maintain a high-risk but predictable business environment and possibly reduce corruption. The introduction of the AEO program would increase security as well as confidence and reduce bureaucracy. In its closer region – in West Africa – Nigeria could be pioneer in this respect as no country has launched this programme yet.

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PECULIARITIES OF CLASSIFICATION OF INFORMATION SECURITY THREATS FOR DIFFERENT SUBJECTS OF INFORMATION RELATIONS

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The real world geopolitical space and the state's internal relations are formed in conditions of information confrontation. This problem is especially urgent for the Ukrainian business entities and a country as a whole. Despite the uncertainty of the economic vector, the political instability, the instability of information space, Ukraine is under systematic information pressure, which is realized by the occurrence of circumstances or events that may cause violations of information security policy, changes in the properties of information or damage to the automated system. Actually, such events or the potential possibility of their occurrence are threats to information security.

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Numerous scientific works of Artemov A., Bishop M., Gliedman C., Horbulin V., Dodonov O., Lande D., Kosogov O., Tuskov M., Semenov V. and other national and foreign scholars are devoted to the determination of the essence of threats to information security and information security. However, the classification of threats to information security, acceptable to practical use in Ukraine, does not exist either at the theoretical, or the practical and legislative level.

In general, any threat [4] is a potentially possible event, action, process or phenomenon that may cause damage to someone else's interests. Obviously, a threat is considered to be one of the key concepts in the field of information security.

Therefore, the Law of Ukraine "On National Security of Ukraine" states that the threat of information security is an attempt to manipulate the public consciousness, in particular by disseminating unreliable, incomplete or biased information. Additionally, other threats include:

- any slight manifestation of restriction of freedom of speech and access of citizens to information;
- the distribution by the media of a cult of violence, cruelty, pornography;
- computer crime and computer terrorism;
- the disclosure of information constituting state secrets, as well as confidential information that is the property of the state or is aimed at meeting the needs and national interests of society and the state [1].

In the Doctrine of Information Security of Ukraine, signed by the President of Ukraine in July 2009, the following threats to information security of the country are clearly defined:

- distribution of distorted, unreliable and preconceived information in the global information space that harms the national interests of Ukraine;
- external destructive information impact on the public consciousness through the media, as well as the Internet;
- negative information effects aimed at undermining the constitutional order, sovereignty, territorial integrity and inviolability of Ukraine's borders;
- use of mass media and the Internet for propaganda of separatism by ethnic, verbal, religious and other features [2].

In May 2018, the Law of Ukraine "On the Basic Principles of Cyber Security of Ukraine" came into force, which noted that any business entity could be exposed to the cyber threats as a new kind of information danger. Threats of this nature are the existing and potentially possible phenomena and factors that pose a threat to Ukraine's vital national interests in cyberspace, and also have a negative impact on the current state of cybersecurity of the country [3].

Thus, at the legislative level, the issues of defining the nature of threats, their classification and determining the directions for their prevention are considered fragmentarily and at the state level only. As for micro-level entities, the problematic of identifying threats to information security is either considered at the level of theoretical generalizations of individual researchers and research teams, or at the empirical level of business entities.

Consideration of different points of view regarding the essence of information security threats [4-12] allows us to conclude that at present there is no well-founded definition of the essence of information security threats and their unified classification.

On the basis of generalization of theoretical studies, it is worthwhile to note that threats to information security can be either real or those that have already manifested themselves in their negative, destructive impact on the security object, and potential, that is, their negative influence can manifest itself in numerous ways in the near or distant future.

The most common classification of threats to information security is related to the sources caused by human factors, hacking and malicious software and those, caused by natural rather than anthropogenic factors.

"Human factor" (also known as the anthropogenic sources of threats to information security) is related to the subjects whose actions can be qualified as an intentional or accidental violation or a crime. This group of threats is the most voluminous and is of the greatest interest from the point of view of organizing protection, since the actions of the subject can always be forecasted, evaluated and taken adequately. Counteraction methods in this case are manageable and directly depend on the requirements for the organization of information protection.

However, in addition to deliberate violations in this group, it is also necessary to include "unintentional" violations of information security. According to the statistical data provided by LETA [11], these are as follows:

- every fourth user leaves an opportunity for the malicious intruders to enter the corporate network;
- every second user is not familiar with the rules of information security;
- 2 out of 3 users visit potentially dangerous sites from a desktop PC;
- 1/3 of users store their passwords in an easily accessible place;
- 5% of employees are ready to transfer confidential information to third parties;
- over 60% of mobile phones are not password-protected;
- every third employee constantly uses the same password when registering on the websites;
- 8 out of 10 users do not destroy media containing corporate information.

On the contrary, the second group of threats (i.e. "hacking and malicious software") contains sources of threats, which are determined by man's technocratic activity and the development of civilization. These sources of threats are less predictable, which directly depend on the properties of the technology and therefore

require special attention. This class of sources of threats to information security is especially topical, because in modern conditions experts expect an increase in the number of man-made disasters caused by physical and moral aging of the technical park of the equipment used, as well as the lack of resources for its renovation.

The third group of sources of threats includes non-anthropogenic factors that combine circumstances that create an insuperable force, that is, those circumstances that are objective and absolute ones. These include natural disasters or other circumstances that can not be foreseen or prevented or possible to provide, but impossible to prevent. Such sources of threats are completely incalculable in forecasting and therefore measures of protection against them must be applied continuously.

The classification of threats to information security that deserves attention, is offered by VPS.house [12]. This classification is based on the main characteristics and properties of information [6] (See Figure 1).

Among the main factors of influence Artemov A. V. proposes to distinguish the following threats, which cause information losses and lead to various types of harm and increase in losses from illegal actions:

- accidents that cause the failure of equipment and the loss of information resources (fires, explosions, accidents, collisions, falls, exposure to chemical or physical substances);
- breakdown of the elements of information processing equipment;
- effects of natural phenomena (floods, storms, lightning, earthquakes);
- theft of tangible assets and intentional damage to these assets;
- crashes and failure of hardware, software and databases;
- errors in the accumulation, storage, transmission and use of information;
- errors of perception, reading, interpretation of the content of information, compliance with the rules, as well as errors that arise due to inability, obstacles, failures and distortions of individual elements and signs or messages in general;
- operating errors: violation of protection, file overflow, data management language errors, errors in the preparation and input of information, operating system errors, programming, hardware errors, instruction interpretation errors, skipping operations, etc.;
- conceptual errors of implementation;
- malicious acts in the material sphere;
- disclosure of information;
- social losses (liberation, strike, etc.) [4].

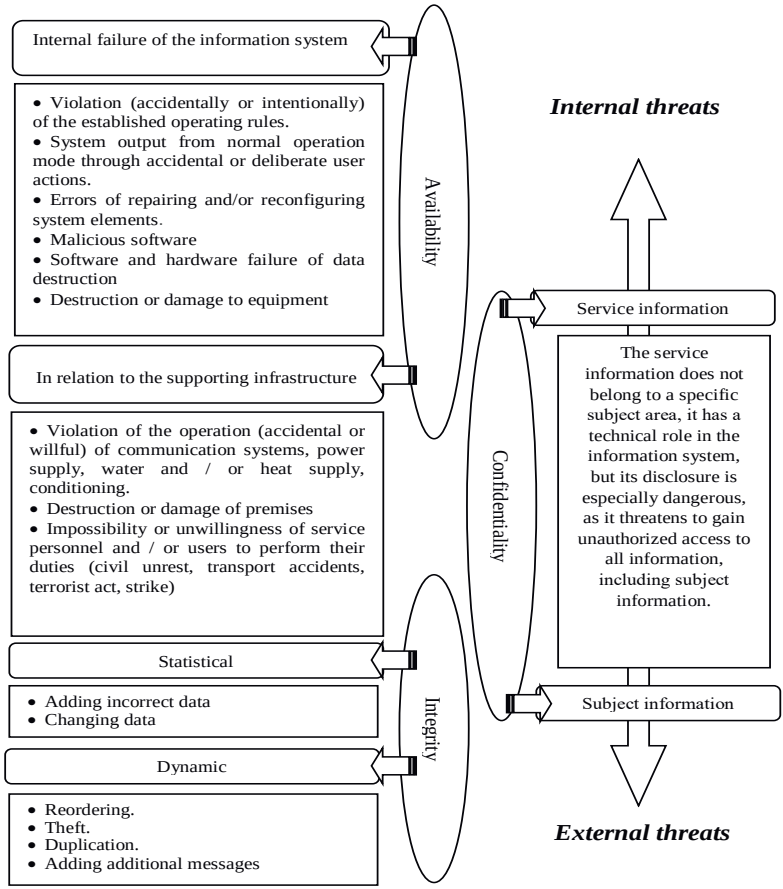

Fig. 1. Classification of types of threats to information security [developed by author on the basis of sources: 5, 6, 12]

Representatives “Searchinform”, a leading company-developer of information security tools, from a practical point of view determine the following groups of vulnerabilities in relation to threats to information security (Table 1).

Based on the generalization of the views of scientists and practitioners to the problem of identifying threats to information security, in this study, under the threat of the object of information security, it is proposed to understand a set of factors and conditions of a subjective nature that arise in the process of interaction of various objects (or parts thereof) and are capable of adversely affecting a specific object information security. Particular attention in this aspect is focused on subjectivism, because both objective and accidental threats to information security arise due to

inability, unwillingness, inattention to results, lack of competence or experience of a specific individual as a subject.

Table 1

Groups of vulnerabilities in relation to information security threats [grouped by the author on the basis of sources: 4, 10, 11]

Groups of vulnerabilities	Information security threats	Characteristics of factors
Random types of vulnerabilities A group of factors that depend on unforeseen circumstances and the characteristics of the environment of the information environment. They are almost impossible to provide in the information space, but it is important to be ready for their rapid elimination. Such threats can be eliminated through engineering and technical inspection.	1. Failures of systems	• malfunctions of technical facilities at various levels of processing and storage of information (including those that are responsible for the operability of the system and for controlling access to it); • malfunctions and aging of individual elements of the system; • malfunctions of various software that supports all links in the chain of information storage and processing; • interruptions in the operation of auxiliary equipment of information systems;
	2. Threats that weaken the information security	• damage to communications systems such as water supply or power supply, etc..; • malfunctions in the operation of protective devices (fences, floors in the house, equipment cases where the information is stored);
Objective types of vulnerabilities A group of factors directly depends on the technical construction of equipment at the site, which requires appropriate protection. A complete disposal of these factors is impossible, but their partial elimination is achieved with the help of engineering techniques.	1. Threats that are associated with technical means of radiation	• electromagnetic techniques; • sound options; • electrical techniques;
	2. Activating threats	• malware, illegal programs, technological exits from programs and other program bags; • “hardware bags”;
	3. Threats caused by features of an object under protection	• location of the object (visibility and absence of a controlled zone around the information object, presence of vibration or sound reflecting elements around the object, presence of remote parts of the object); • organization of information exchange channels;
	4. Threats, depending on the characteristics of the individual elements or carriers	• individual elements with electro-acoustic modifications (transformers, telephone devices, microphones and loudspeakers, inductors); • various means that fall under the influence of the electromagnetic field (carriers, microcircuits and other elements);

Subjective types of vulnerabilities A group of factors in most cases is the result of incorrect actions by employees at the level of developing information storage and protection systems.	1. Threats caused by inaccuracies and gross errors that violate information security	• at the stage of downloading the finished software or preliminary development of algorithms, as well as at the time of its use; • at the stage of managing programs and information systems; • when using technical equipment (at the stage of switching on or off, operation of devices for transmitting or receiving information);
	2. Threats caused by system disruption in the information space	• violation of the regime for the protection of personal data (the problem is created by laid-off employees or active employees during off-hours that gain unauthorized access to the system); • violation of the storage and security of information (when accessing the facility or technical devices); • violation when working with technical devices (these can be related to the violation in energy saving or provision of equipment); • violation when working with data (information conversion, storage, search and destruction of data, elimination of defects and inaccuracies).

The distributions of the groups of threats to information security considered by us are rather arbitrary one, and require integration with other threat classifications. This explains the need to combine real and potential threats, threats that arise at different levels of management (international, national, regional and local one), and threats to information security caused by anthropogenic and non-anthropogenic factors (not excluding subjectivism).

Based on the aforementioned findings of the study, it is rather important to build a corresponding model for identifying threats to information security, taking into account the following components: actual threats, sources of threats, information attacks, information security objects, vulnerabilities of the information security object and countermeasures.

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INVESTMENTS IN THE DEVELOPMENT OF GRAIN PRODUCTION IN THE POLTAVA REGION

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Transformational processes in the economy of the agrarian sector of Ukraine, the change in the form of organization of labor and ownership of capital: fixed assets, land, labor, changes in the forms of management and the structure of production of agricultural enterprises, including the economy of the population, the transition of

the economy to an innovative development path led to the activation of investment processes and increased investment in the development of leading industries and, in particular, grain production.

The soil and climatic conditions, the production potential of agro-formations in Poltava, the genetic capabilities of the current assortment of varieties of grain crops, with full resource support and strict observance of the technology of their cultivation, enable them to obtain their high yields almost every year.

Grain production in all categories of farms in the Poltava region increased by 39.8% in the period under study and amounted to 5363 thousand tons in 2015, changing the ratio of grain production to farm categories. If its main volumes were concentrated in 1990 in agricultural enterprises, in recent years they have increased the volumes of their production of the population's economy. Their share in the total grain production in 2015 was 19.1% (Table 1).

Table 1

Dynamics of grain production by categories of farms in the Poltava region [1, p. 215]

Year	All categories farms		including:			
			agricultural enterprises		enterprises of the population	
	thousand tons	in % by 1990	thousand tons	share in total production	thousand tons	share in total production
1990	3450	100,0	3338	96,7	112	3,2
1995	2016	64,0	1823	82,5	193	8,7
2000	1408	40,8	1170	83,1	238	16,9
2005	2851	82,6	2283	80,0	568	20,0
2008	4531	131,3	3790	83,6	741	16,4
2009	3830	111,0	3192	83,3	638	16,7
2010	2854	82,7	2355	82,5	499	17,5
2011	5055	146,5	4332	85,7	723	14,3
2012	3645	148,8	2959	81,2	687	18,8
2013	5640	163,4	4720	83,7	920	16,3
2014	4822	139,8	3938	81,7	884	18,3
2015	5363	155,4	4337	80,9	1026	19,1

The need for investment in the grain production of agricultural enterprises is caused, in particular, by the need to replace the obsolete material and technical base, especially the main means of production, its improvement or modernization. It is important to note that in terms of the level of the provision of agriculture with material and technical resources, Ukraine lags behind the developed countries of the world. The quantity and quality of fixed assets does not meet the technological

need. On average in Ukraine per hectare of agricultural land accounts for 5-7 times less of fixed assets than in agricultural enterprises with the existing material and technical base [4].

Grain production in the Poltava region is one of the most important industries, provides agricultural enterprises with significant cash receipts and incomes – an important source of investment.

Analysis of investment in the economy of the Poltava region for the period 2010-2015. Evidence of their growth over the years at different rates (Table 2).

Table 2

Volumes of investment in the fixed capital of agriculture in the Poltava region [1, p.26]

indicators	Year					year 2015 in % by 2010 p.
	2010	2011	2012	2014	2015	
Investments in fixed assets, total, mln. UAH	6289	7859	10217	8827	8337	132,6
of them:	845	1259	1579	1578	2020	238,9
including: plant growing, mln. UAH	373	731	1153	1128	1462	in 3,9 times
of which investments for the acquisition of fixed assets for grain production, UAH million	314	394	541	296	332	105,5
per 1 hectare of sown area of grain, UAH	220	398	569	431	355	161,3

Investments in the agrarian sector increased more rapidly than in the whole region. So the total amount of investments increased by 32.6%, while in agriculture, hunting and forestry – 2.4 times. This changed their share in the total amount. If the amount of investment in 2010, the agricultural sector was 0.8 billion. UAH with a share 13,4%, then in 2015, respectively,

2 billion and with a share 24.2%. The main volumes of investments are directed to the development of the crop sector, during the period under review they increased 3.9-fold and in 2015 amounted to 1462 million UAH. The development of the crop sector accounts for more than 70% of the total investment in the fixed capital of agriculture, including in the calculation of 1 hectare of crops – 850.5 UAH. In terms of unit area of grain, the volume of investment over the years is also increasing.

According to the Department of Agro-Industrial Development of the Poltava region, the volume of investments for the acquisition of fixed assets for grain production grew by years, but not at the same pace. The largest amount during the period under study was in 2012 and amounted to 541.3 million UAH in 2015, it decreased to 332 million UAH, per 1 hectare of grain area under crops was 355.5 UAH.

The volume of investments in technical renewal of grain production in 2015 amounted to 332.0 million UAH, which is 17.4 thousand UAH (5.5%) more compared to 2010. Accordingly, the volume of investments per 1 ha of cereals for 19 4 UAH or 5.7% (fig. 1).

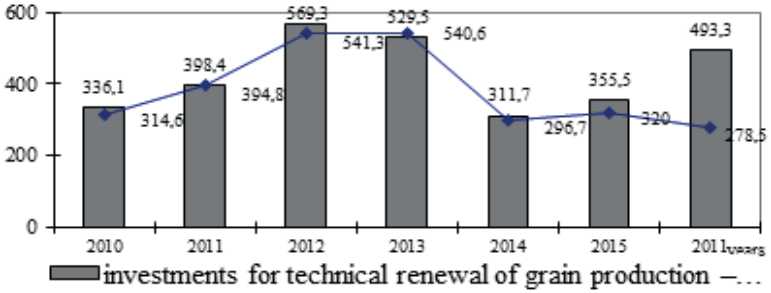

Fig. 1 Dynamics of investments in technical renewal of grain production of agricultural enterprises in the Poltava region in 2010 – 2015, mln. UAH.

For the cultivation of grain crops by the agricultural enterprises of the region during the study period, 5686 units were purchased. a variety of equipment, including: tractors – 1761 units, combine harvesters – 404 units, maize harvesters – 42 units, harvesters – 178 units, seeding equipment – 470 units.

487 units of technics were purchased in 2015., it is 2 times less than in 2010, from them – domestic production – 200 units. (41.1%) to the amount of 43.7 million UAH and foreign production – 287 units (58,9%) for the total amount of 288,300,000 UAH.

The structure of investment sources for the acquisition of domestic equipment varies by year. So, in 2005, the largest share, namely 79% borrowed their own funds and loans to enterprises under the terms of financial leasing purchased 8.1% of the equipment, with a partial cost compensation – 7.5%. In 2015, the share of equipment purchased for own funds decreased to 13.2%, due to a decrease in its acquisition.

The structure of investments by sources of their financing changes annually, especially for the change in the technology of the obtained in credit that is on the instincts of financial leasing. So, during the period under study, the amount of domestic equipment purchased for credit facilities decreased by 94.2%, in 2015 it was 0.7% (6 units). This is explained by the increase in the interest rate for the use of loans.

The amount of investment invested in the technical renewal of the agricultural enterprises of the region during 2010-2015 is increased by 2400000 UAH or 0.7%. However, the number of acquired units decreased more than in 2 times, amounting to only 510 units in 2015, which is explained by a significant increase in the cost of equipment, especially of foreign production.

The powerful farms of Ukraine, including the Poltava region, are increasingly purchasing foreign high-performance combine harvesters from the following manufacturers: John Deere, Claas, Case, Massey Fergusson, New Holland and others that provide the necessary technological and operational level of production. They are much more powerful, reliable, more versatile, equipped with electronic systems, including fuel consumption, control of aggregate control, comfortable ones. However, for all positive qualities, powerful technology has a significant drawback – a high price (Fig. 2).

The cost of purchased foreign agricultural machinery in 2010 - 2015 in the Poltava region is 2-7 times higher than the cost of domestic cars. Taking into account this fact, when the technical and technological complex is being formed at the expense of foreign machines, the need for investments grows 2 times. In the world of agriculture, there are 50 hectares of arable land per tractor.

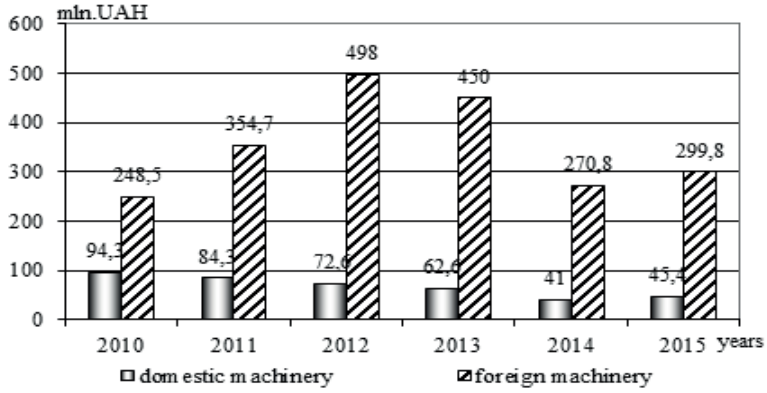

Fig. 2 Cost of domestic and foreign equipment purchased by agricultural enterprises of the Poltava region, 2010 - 2015, mln. UAH.

The average power of the tractor engine during the period under review increased by 9.7 kW (12.1%) and amounted to 89.9 kW in 2015, which is due to the innovative development of machine building and the increase in the share of foreign equipment purchases.

Due to the heavy load on the grain harvester, the farms are attracted by the technology of large companies, the costs for which are growing in the farms in the form of «payment for third-party organizations.»

Investments are also required by the conservation of soil fertility and increased productivity. Unsustainable long-term exploitation of land resources without due regard for soil and climatic features, intensive processing, increasing the size of enterprises and fields lead to depletion and degradation of soils, a decrease in the content of humus and nutrients in them. At the end of 2013, the area of disturbed

land in Ukraine was 146.5 thousand hectares, spent – 46.1 thousand hectares.

Every five years the soils of Ukraine lose 0,04-0,05% humus, 4-7 mg / kg mobile phosphorus compounds and

5-7 mg / kg potassium. During a year – 300-350 kg of humus,

2,6-4,5 kg of mobile compounds of phosphorus and 3,2-4,5 kg of potassium [2, p. 84]. The main factors of reducing the content of humus are soil erosion and mineralization of organic matter, is enhanced by the introduction of low rates of organic fertilizers in the growth of mineral fertilizers.

According to the results of agrochemical monitoring of agricultural lands in Poltava oblast, the fertility of the land deteriorates every year. The content of humus in the soil is an integral indicator of the level of its effective fertility [2, p. 85].

The level of humus in agricultural soils of Poltava Oblast farms decreased by 0.5 percentage points during the period under study and amounted to 3.18% in 2015.

The protection of the land includes the costs for the construction of anti-erosion hydraulic structures (hills, ditches, ramparts, anti-erosion lakes, spillway structures, bank protectors) and plowed land heavily degraded and contaminated with harmful substances [5, p. 109].

The number of measures for the protection of land in Ukraine is decreasing, in the Poltava region too, during 2010 – 2014. decreased by 3 times, including 1 hectare of arable land – by 2.3 thousand UAH, of which for grain – by 5,1 thousand UAH. There is a decrease in the cost of development, improvement of land and a reduction in the cost of working land management projects for land protection. The cost of conducting normative monetary assessment of land also decreased by 1062.2 thousand UAH or 93.1%.

So, in the Poltava region there is sufficient economic potential for activating investment processes in grain production. According to studies of economists, there are three main reasons that prevent the inflow of investments into the grain-producing subcomplex of the country. The first is a weak protection of the rights of the investor, because it is quite difficult to realize the right to protect both property rights and business interests. The second reason is very low infrastructural opportunities: the stock and insurance markets are poorly developed; weak venture, investment, pension, innovative companies; virtually no investment tools. The third reason is that it is almost impossible to predict the development of the economic situation in the subcomplex [3, p. 92]. In addition, the high price of loans, their inaccessibility is the main reason, the main source of financing investments in the logistics of grain production is the company's own funds, although a significant amount of agricultural equipment is purchased on loans. Therefore, it is important to change the terms of lending to agricultural producers.

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AN OVERVIEW OF THE MNB'S ACTIVITIES SINCE THE ESTABLISHMENT OF THE TWO-TIER BANKING SYSTEM TILL TODAYS

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In advanced market economies central banks are in charge for and conduct monetary policy. Monetary policy is classified as a pillar of financial policy. Monetary policy is the aggregate of arrangements and instruments that affect economy through influencing demand and supply for money.

During the first steps to Hungary's transition to market economy, 1987 saw the formation of a two-tier banking system again. The Magyar Nemzeti Bank set foot to become liable for central bank functions standard in market economies. The development of MNB's activities in the forthcoming decades was determined by the state of the Hungarian economy, government initiatives, international requirements, and economic theory.

This paper reviews the changes the Central Bank, the conductor of monetary policy, has undergone and how its targeting framework and application of policy instruments changed during the last 30 years and to what extent it contributed to the growth of the Hungarian economy.

Establishment of the modern central bank. Before the two-tier bank system established in 1987, there had been indirectly controlled economy in place in Hungary, hence it was not possible to put a central bank fully compliant with market economy practices in operation at once. The economic and institutional environment restrained the central bank's scope of activities considerably, although inflation rate increased to the two-digit range in that period.

1991 witnessed a change in the MNB's status, targeting framework, policy

instruments, and tasks. With the coming into force of Act LX of 1991, the MNB's activities were regulated by an act. The act was a key step ahead to make the central bank credibly and irrevocably commit itself to independence.

The Act LX of 1991 defined the Magyar Nemzeti Bank as an institution obliged to report to the Parliament. By that Act, independence from the government was confirmed by a national law adopted by the Parliament. The Act ordered the MNB to support the government economic policy and protect the internal and external purchasing power of the national legal tender. The Act obliged the central bank, as controller of demand for money and loan, to be liable for conducting monetary control. An important change was that loans lent by MNB to the state were restricted. (Bánfi-Balogh-Varga, 1994)

Instruments of monetary policy were also defined. The range of monetary policy instruments included refinancing, regulation of minimum reserve ratio and liquidity reserve ratio, and open market operations. The Act licensed the MNB to determine central bank policy interest rate. However, the central bank shall determine the exchange rate regime in agreement with the government. The MNB shall protect the exchange rates as established within the framework.

In focus – reduce inflation rate. After 1995, the primary objective of the MNB was to reduce inflation rate gradually.

In compliance with the Act on the central bank, the government and the MNB introduced a new exchange rate regime in March 1995 called narrow-band crawling peg devaluation. Unlike the former incalculable devaluation steps, there was a shift to a more predictable system, in which forint was devaluated at a pre-announced date and extent in a fluctuation band of +/- 2.25%. In addition to improve predictability for business decisions, the new exchange rate scheme was meant to create conditions for regaining credibility. The inflation rate became anchored to the exchange rate. Domestic players used purchasing power of foreign currencies to determine the expected purchasing power of forint and to set prices.

The exchange rate scheme, however, left monetary policy to work in confined space only. In fact, it was the rate of crawling that determined the freedom of movement for the central bank. The central bank's policy of interest rates was determined by how the exchange rate varied within the margin, and by decisions intended to schedule the reduction of the depreciation rate or determine the rate of reduction.

The central bank's approach was to provide more and more room for market processes. In practice, the MNB refrained from long-term interventions, and reduced the duration of its policy interest rate from the initial one month to two weeks. They developed an interest 'corridor' around the prime rate for 24-hour maturity with the purpose to reduce interest rate fluctuations arising from short-term liquidity squeezes. The two-week policy instrument, the interest rate corridor, the 3-month MNB bonds were adjusted to the policy instruments of the European Central Bank. (MNB, 2001).

Year 2001 was another key milestone in the development of monetary policy. In May 2001 the narrow-band crawling peg devaluation of forint changed. First the band was widened to +/-15%, and some six month later the crawling peg regime was cancelled.

The old Act on the Central Bank was replaced with Act LVIII of 2001, which further reinforced the MNB's independence. The Act declared the primary objective of the MNB shall be to achieve and maintain price stability.

Eventually, they entailed in changes within the framework of the monetary policy, as the new monetary policy regime with inflation targeting scheme was

introduced in 2001, even if they still operated with a wide exchange rate band at the edges of which the central bank was obliged to intervene to protect forint. The exchange rate band survived as late as until February 2008.

The first inflation target was set to be achieved in agreement with the government by the end of 2001, and they targeted price level of 7%. As a consequence of commitment to a quick adoption of the euro was a high-priority item on the agenda at that time, they wanted to reduce inflation rate to as low as 4.5% by the end of 2002. After that, the inflation rate target remained unchanged until 2006, and it was in 2007 when it dropped to 3%.

As of 2002 disinflation was strongly influenced by the loosened state budget policy. It was not until in the autumn of 2006, when the first measures to rebalance state budget were taken. Fiscal restrictions, however, immediately caused the economic growth to fall. The 2008-crisis hit Hungary under such adverse conditions (Neményi, 2009). Adverse external economic conditions projected recession in real economy and made it impossible to finance the state budget from the open market. In terms of financing, the private sector too was shocked seriously. As external funds dried up and became more expensive through commercial banks mostly owned by foreign entities, which had a negative impact on crediting conditions for enterprises and households.

Since the establishment of the inflations targeting system the MNB had manoeuvred against international trends. As a result of inflationary pressure caused by the high deficit in the state budget, the MNB maintained the policy rate high. The central bank did not modify the high rate, and raised the rate significantly due to the fall of forint exchange rate, although the exchange rate band was cancelled in the end of 2008.

Between March 2007 and March 2013 the inflation rate continued fluctuating, while the heart of fluctuation was still above the desired range of 2.5% to 3%. Unfortunately, the fact that they cancelled fluctuation band of forint in February 2008 did not manage to improve the situation, either. There was no exchange rate target anymore binding for the MNB apply in the course of conducting its monetary policy.

Downgrading tendency in the inflation rate over an extended period of time was seen only between March 1995 and early 2000. It should be noted that the economic

policy deliberately caused the inflation rate to raise high in the beginning of the period.

In addition to ensuring and maintaining price stability, central banks deem the importance of maintaining stability of the system of financial intermediation. In the years 1997 and 1998 first the Southeast Asian and then Russian crisis unfolded. Among the Hungarian financial institutions, the crisis affected the investment service providers in a serious way. As a result of crisis, many investment service providers were wound up.

Gradual appreciation of forint's real exchange rate began between 1995 and 2001. After 2001, the process came to a standstill. The appreciation of forint's real exchange rate and the large difference between interest rates of forint and foreign currencies resulted in market players became seriously indebted in foreign currencies. After the unfolding of crisis 2008, it was considered a serious financial stability risk (Lentner, 2015).

The MNB's role in crisis management and setting the Hungarian economy on an upwarding path from 2013. 2013 witnessed a decisive change in monetary policy, as the new Act CXXXIX of 2013 on the National bank of Hungary came into force. Since it had turned out in the previous years that low inflation alone is unable to ensure financial stability automatically, the support the maintenance of the stability of the system of financial intermediation became a key objective for the MNB. The Act obliged the central bank to define macro-prudential policy with the view to strengthen the system of financial intermediation, through which harmonised economic growth is achieved.

The primary objective of the central bank remained unchanged, namely to achieve and maintain price stability. However, the MNB concluded a different interpretation on how the monetary policy can, without prejudice to rice stability, support the growth of the Hungarian economy. In the revised approach they defined the central bank as an institution in charge of public weal. A responsible central bank therefore, in consideration of the effects of risks and decisions, uses all the instruments at its disposal in order to achieve the social objectives (Lentner-Szegedi-Tatay, 2017).

The new approach triggered changes in the range of monetary policy instruments applied. In addition to the central bank base rate, other instruments meant to foster the activities of the banking system, contributing to the implementation of transmission mechanism, and supporting the balance of the state budget were introduced. (Matolcsy-Palotai, 2016)

It was as late as in August 2012, when the MNB began to reduce the base rate, although the economic conditions had allowed earlier measures (Sági, 2014). In order to allow the interest rate environment to contribute to the upswing of real economy, the MNB lowered the policy interest rate to a historical low of 0.9%, while keeping the inflation target away from threats

A credit incentive tools was introduced to boost corporate lending. Primarily the Growth Scheme aimed to improve the credit conditions offered to small- and

medium-size enterprises.

The MNB helped to correct one of the biggest mistakes in the economic policy between 2003 and 2008, and played a key role in converting foreign currency loans of households to forint. In order to eliminate stability risks the central bank placed about 10 billion euro at the bank system's disposal, and the foreign exchange risks households had been exposed to get eliminated (Parragh, 2017).

The MNB launched its self-financing scheme with the aim to reduce exposure to foreign funds and mitigate the cost of funding the state budget. The modified policy instruments of the MNB, as discussed above, had a decisive influence in the market of state budget funds as well.

Conclusions. The inflation rate fell remarkably between March 1995 and March 2001. Eventually they created an artificially high rate exceeding 30% in. In that period inflation was anchored to the exchange rate scheme based upon narrow-band crawling peg devaluation. Within the framework of such devaluation forint was devalorized from time to time at a pre-announced rate. In that period the government was responsible for determining the exchange rate regime and the MNB's interest rate policy had to adopt the devaluation rate. By the end of that period inflation had been anchored to around 10%, and the MNB alone had no more powers or instruments to reduce it any further.

It was only after March 2001, when the following disinflation period began. First they widened the narrow exchange rate band in May 2001, and the crawling peg devaluation was cancelled sim months later. Inflation rate began to fall from the level around 10%, followed first by a rise when dropped below 5%, and then a drop was seen again afterwards. The inflation targeting system, introduced in 2001, failed to keep inflation rate low for an extended period of time.

The above-described turn in the monetary policy was highly desirable, since although the inflation conditions had allowed the central bank to support the government's economic policy, maintain financial stability, and economic growth before, the MNB failed to take such measures. Since the adaptation of inflation rate targeting system until 2013 there had been a lack of harmony between fiscal and monetary policy, which caused tremendous economic losses (Matolcsy-Palotai, 2016).

The Magyar Nemzeti Bank fulfilled its legal liabilities and tasks in the period between 2013 and 2017. With price stability as number one objective in mind, the central bank met its broad mandate too. It contributed to the maintenance of financial stability, fostered the government's economic policy and economic growth. From that period the consistent cooperation between the central bank and the government in the interest of achieving economic targets is worth highlighting.

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DETERMINING THE ACTUAL LABOR COSTS STANDARDS IN DEPENDENCE TO THE LEVELS OF LABOR INTENSITY OF SOFTWARE PRODUCTS IN THE IT-INDUSTRY

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Creating labor cost standards in the IT industry is a rather complicated process, primarily due to the fact that software creation is an intellectual process. It is currently not subject to precise value and time assessment [2], because specialists in different occupations and categories can participate in the programming of one task. In addition, labor productivity in the software development process depends on many factors: qualifications of a specialist, algorithmic complexity of a programmed task, mathematical support, etc., which is difficult to consider.

According to the results of the theoretical generalization, we can say that there

is no «formal approach» to the measurement of the work of spesialists on the production of software products: no time lines of code, functions, classes, etc. are calculated. [2]. The creative elements of the work of specialists and technicians in the IT industry are almost non-standardized and can only be determined by applying peer-reviewed or clearly regulated by the terms of development of software products. Often, experts are the direct developers with some experience, company management, competitors [2]. On the basis of estimates of individual experts in accordance with the existing methods, an integrated consensus assessment is formed.

Technical elements of labor in IT companies can be measured, but the accuracy and adequacy of such norms has a rather wide spread of values due to certain dependencies of the complexity of the software product on its main parameters.

That is, it can be argued that the cost of labor in the IT industry depends on the type of software product and the length of its development and execution, that is, the basis of the standardization (measurement) of labor should be labor-intensity.

The researchers, take into account the design process, share the existing models of evaluation of the complexity of the software product into two groups [12]: algorithmic, based on the calculation of the quantitative characteristics of the program in the form of number of operators or functional points, and non-algorithmic, using certain schemes or principles.

To evaluate the complexity of projects that solve innovative problems or based on the latest technologies and processes, the first of all non-algorithmic methods, namely, expert methods, as has been mentioned more than once, are applied. Tacing into account the innovativeness and creativity of most of the components of the software being created, such assessments have become widespread in the practice of developing programs, which has become the dominant argument when choosing to use this method of scientific knowledge in the article to evaluate the complexity of IT industry by example software products [13].

To determine the complexity of software products in each of the research companies that provide software services, expert groups of 10 people were formed:

1) specialist in the development and testing of the developer company software (E 1);

2) specialist in the development and testing of similar software products of the developer company (E 2);

3) specialist in information technology of the developer company software product (E 3);

4) analyst of operational and application software of the developer company (E 4);

5) representative of the management of the software developer company (E 5);

6) specialist in the development and testing of software of competitor companies (E 6-10).

In our view, the inclusion in the expert group of specialists of the software

developer company and the competitors companies will ensure the impartiality of the evaluation results.

Taking into account the fact that IT technologies form the innovative branch of the economy and based on the criteria for determining the complexity of scientific works in the Methodology [10] and technical characteristics of software products [9], the following criteria for defining the complexity of software products are proposed:

1) novelty, which characterizes the degree of approximation of a new software product relative to existing ones, the availability of information and practical experience in the performance of such software products (K 1);

2) the complexity of the software product - the number of lines of code, the cyclomatic complexity, the number of functional points, the number of classes and interfaces, the size of binary files (K 2);

3) information capacity, which takes into account the multi-vector software product, the number of problems studied (K 3);

4) practicality - the ease of studying and using the product (K 4);

5) the response time of the software product - the speed of the program response to user requests (K 5);

6) multitasking software product - the ability to perform more than one task at a time (K 6);

7) virus protection - the ability to counteract the negative effects of viruses (K 7);

8) integrity - the ability of the software product to prevent unauthorized or incorrect access to data, restrict access to the system for unauthorized users (K 8);

9) adaptability - the ability to use a software product without modifying it in those industries or environments for which it was not directly targeted (K 9);

10) accuracy - the degree of error-free operation of the software product and the reliability of the results (K 10);

11) survivability - the ability of the software product to continue working when inaccessible data is entered or in tense conditions (K 11).

The object of the study became the most well-known software products developed during the last 3 years in 3 IT companies in the ranking of TOP-10 of the largest IT companies in Ukraine with offices in Kharkiv (Ciklum, Infopulse, NIX Solutions Ltd) ; 3 companies in the ranking of TOP-50 (Intetics Inc., CS Ltd, Gameloft) and 3 companies in the ranking of TOP-100 (BrightgroveLtd, Itera Research, Eastern Peak) [11].

For research, companies are selected by different number of personnel, volumes of financial resources and financial results in order to identify the patterns and characteristics of determining the labor complexity of products and the standardization (measurement) of the labor of IT-industry companies.

Estimation of the labor intensive of software products (SP) was carried out by the ballistic method on a 5-point scale. Estimates can be displayed in the format of integers in the range [1-5], where the score «1» means that the program has

insignificant features of the criterion, «5» - in full.

The more the criterion is inherent for SP: the greater the level of novelty, greater complexity, information capacity, ease of use, reaction speed, multitasking, greater degree of protection from viruses, integrity, accuracy, adaptation and survivability, the greater its labor intensity. Since all criteria are equivalent to impact, weighted coefficients are not assigned, and the total estimate of the complexity of the SP is defined as the sum of the average points by the experts according to all the criteria.

The results of the expert assessment are significant and suitable for further research, subject to the consensus of expert opinions. The most common method of assessing the consistency of the views of the entire group of experts is to calculate the concordance coefficient (W) [3].

To calculate the concordance coefficient, the ballpoint matrix is translated into a rank matrixThe concordance coefficient assumes a value from 0 to 1. The greater the value of the concordance coefficient, the greater the degree of consistency of expert opinions. At W = 1 there is complete consistency of expert opinions, at W = 0, consistency is practically absent [3].

The same values of the concordance coefficient may have different meanings depending on the number of criteria and the number of experts, therefore the statistical significance of the concordance coefficient was checked, for this reason was used the Pearson criterion (formula 1) [3]:

$$\chi_p^2 = \frac{12 \sum_{j=1}^{n} d^2}{\left[mn(n+1) - \frac{1}{n-1} \sum_{i=1}^{m} T_i\right]},$$

where

m – number of experts;

n – number of criteria;

T_i – results of interim calculations in the presence of related ranks;

d_j – deviation of the sum of ranks for the j-th criterion from the average sum of ranks by sampling;

χ_p^2 – estimated value of the Pearson criterion.

If χ_p^2 is greater than the table χ_p^2 with the number of degrees of freedom (n-1), then the concordance coefficient W is considered significant, and the expert estimates are sufficiently consistent.

The Table value of the χ_p^2 Pearson criterion for the number of degrees of freedom 10 with a confidence interval of 95% is 18,309.

For each software product for which its labor intensity was evaluated, the value of the concordance coefficient is approaching 1, and the calculated value of the χ_p^2-criterion exceeds the table value. This indikates that with a probability of

95%, it can be argued that the opinions of experts are consistent, and therefore, the reliability of the results of the evaluation of the labor intensity of software products.

As it has already been noticed, the problem aspect of the standardization of labor in enterprises in the IT industry is the specificity of a software product that needs creative work and varies in complexity of implementation, which affects on the amount of time need to complete a specific technological operation. In this regard, it is expedient to determine the actual labor standards in the IT industry to carry out standardization of labor, taking into account the level of complexity of the software product, that is, the level of its labor intensity.

Based on the assessments of the expert survey, the levels of labor-intensiveness of the SP based on the Fibonacci scale were determined. In accordance with this method of cognition, intervals of values of levels are determined by the system (formula 2) [1]:

$$\begin{cases} E_{min} \le E_i \le E_1 \\ E_1 < E_i \le E_2 \\ E_2 < E_i \le E_{max} \\ E_1 = E_{min} + 0{,}382(E_{max} - E_{min}) \\ E_2 = E_{min} + 0{,}618(E_{max} - E_{min}) \end{cases}$$

where

E_{min} – the minimum possible value of the index of the labor-intensiveness of the software product;

E_{max} – the maximum possible value of the index of the labor-intensiveness of the software product;

$[E_{min} ; E_1]$ – the interval of values of the low level of the index of the labor-intensiveness of the software product;

$(E_1 ; E_2]$ – the interval of values of the average level of the index of the labor-intensiveness of the software product;

$(E_2 ; E_{max}]$– the interval of values of the high level of the index of the labor-intensiveness of the software product.

An expert evaluation of the complexity of software products was carried out on the basis of 11 criteria, each of which experts assigned scores from 1 (in the case if the software product is not substantially present features of the criterion) to 5 (if the software product is fully has features of the criterion). Thus, the minimum possible value of the index of the labor-intensiveness of the software product is 11 points, the maximum possible - 55 points.

According to the Fibonacci Law, changes occur at the level of 38.2% and 61.8%. The value of the difference between the maximum and minimum estimate of the labor-intensiveness of the software product is: 55-11 = 44. By multiplying this difference successively by 0,382 and 0,618 and subtracting each of the received amounts from the «maximum», we obtain the values of the scale according to

which, according to the law of Fibonacci, the changes are most likely to occur.

Based on the results of the calculations, three actual levels of the labor-intensiveness of software products in the IT industry were obtained. The results of calculating the scale range values are given in Table 1. This approach will make it possible to determine the norms of labor productivity within each level of the labor-intensiveness of the software product of IT enterprises.

Table 1

The scale of the differentiation of the levels of the labor-intensiveness of the SP at the enterprises of the IT industry

Value range of the labor-intensiveness, points	[11; 27,7]	(27,8; 38,1]	(38,2; 55]
The level of the labor-intensiveness	Low	Average	High

In order to increase the efficiency of the process of rationing (measurement) and achieve the greatest information completeness of labor cost standards in the IT industry, it is advisable to take into account the factors of the influence of the internal and external functional environment of IT companies: factor of the qualitative and social status of workers, technological, economic and material-technical factors.

In order to take into account the influence of the system of deterministic factors on the efficiency of labor costs in the IT industry as a quantitative value, each factor is allocated according to a representative indicator.

Representative indicators are determined by the «center of gravity» method, according to which the representative in the group (factor) is the indicator for which the Euclidean distance to the group indicators is minimal, while the distance to the indicators of other groups is maximal. The Euclidean distance between the indicators is calculated by the formula 3 [5]:

$$d_{ij} = \sqrt{\sum_{k=1}^{m}(x_{ik} - x_{jk})^2},$$

where d_{ij} – the distance between the i-th and j-th objects;
x_{ik} – the value of the i-th parameter for the i-th object;
x_{jk} – the value of the j-th parameter for the j-th object.

Absolute, structural, tempo variables are used for factor analysis, therefore, in order to bring them into comparable form for the purpose of determining representative indicators, they were standardized using formula 4 [5]:

$$z_i = \frac{x_i - \bar{x}_i}{\sigma_i},$$

where z_i – the standardized value of the i-th indicator;
x_i – value of the i- th indicator;
$\bar{x}_i$ – average value of the i- th indicator;

σ_i – standard deviation i-th indicator.

Euclidean distances are calculated based on standardized values of indicators, and representative indicators are determined in each of the factors. For factors 1-3 (factor of the qualitative and social status of workers, technological and economic factors), this is an indicator that has the smallest amount of distances to other indicators of the factor. The fourth factor (material-technical factor) includes two indicators that have one distance with each other. Therefore, for this factor, representative is the indicator that has a maximum distance to other representative indicators.

Thus, representative indicators are: the share of highly skilled workers in IT-industry, %; index of development of information and communication technologies; volume of IT services market, UAH million; index of the value of fixed assets of the enterprises of the IT-industry. These indicators characterize the situation of the IT industry and affect the determination of labor standards in the national economy.

In order to study the standardization (measurement) of labor at the micro level, similar indicators for enterprises were calculated: share of highly skilled workers in the company developer of the software product; index of development of information and communication technologies in the company; the index of the value of the company's services and the index of the value of the company's fixed assets. However, more accurately, the level of company development and its impact on the efficiency of labor use is described by a dynamic indicator – the index of the cost of services rendered by the company, which is taken for settlement.

In the inter-branch norms [8, 7, 6] it is stated that the norm is calculated by dividing the labor-intensity into the fund of working time of one employee, adjusted for the coefficient, which takes into account the possibility of absence at workplace. The same factors are taken into account for determining the time standards.

In order to determine the time standards for the development of SP and the number of employees, a multi-factor regression model was proposed.

Regression analysis is a method of statistical analysis of the dependence of the random variable y on variables x_1, x_2, …, x_n. Multi-factor regression analysis enables to determine indicators that influence on the resultant value, estimate the strength and nature of their impact. The results of the regression analysis are presented as a function used to predict, determine the optimal or normative values of the resulting variable. [4].

The multi-factor regression model look like (formula 5) [4]:

$$y = b_0 + b_1 x_1 + b_2 x_2 + \ldots + b_n x_n,$$

where y – dependent variable;
$x_1,\ldots,_n$ – independent variable;
b_0 – free member;

$b_1,\ldots,_n$ – coefficients of the independent variables.

Independent variables model definition of labor standards for the development of software products are the labour-intensity of the software product (x_1) and the values of indicators-representatives of factors influencing the efficiency of labor costs ($x_2 – x_5$), dependent variable for modeling the norm of number - number of developers and testers involved in the development of a software product (y_1); to simulate the time standard - the actual time spent on developing a specific software product (y_2), which are obtained by the method of timekeeping.

The estimation of the parameters of the regression model (b_0, $b_1,\ldots,_n$) is carried out by the method of least squares, the essence of which is to select the parameters of the model, which minimizes the sum of the squares of deviations of the actual values of the dependent variable from the calculated (formula 6) [4]:

$$\sum_i^N (y_i - \overline{y_i})^2 \rightarrow min,$$

where y_i – the actual value of the dependent variable for observation;
(y_i)– calculated value of the dependent variable for observation;
i=1,2,…,N.

The construction of regression models allows us to determine the following regularities in the standardization (measurement) of the labor of the IT-sphere of Ukraine (Kharkiv region):

1. It is impossible to develop uniform standards of size and time, suitable for all companies in the industry.

2. Models of determination of labor standards differ from each other depending on the level of complexity of the software product.

3. The models for defining labor standards depend on the level of complexity of the software product and do not depend on the size and rating of the company.

The statistical significance of the independent variables in the models indicates that the calculated value of Student's criterion (t) is higher than the table value, and the level of error (p-value) is lower than 0.05 [4]. So, with a probability of 95% it can be argued that the models for determining labor standards, depending on the level of labor productivity of the software product, are adequate and suitable for practical use.

The built models allow to determine the time and quantity norms for the development of a software product, depending on the level of their complexity.

The lower boundary of the norm is determined by substitution in the model instead of the indicator of labor intensity - its minimum value for the corresponding level of labor, the upper - by substituting the maximum value. The value of indicators of the index of development of information and communication technologies, the index of the value of services provided and the index of the value of fixed assets

of the company is accepted as 1.0, as it is dynamic indicators and provided that the conditions of labor and production remain unchanged, their value is 1.0. Since labor standards are being developed for the all IT industry, the value of the «share of highly skilled workers» indicator corresponds to the average value: at the end of 2016 - 0.37.

Calculated time standards, number of employees and labor intensity are presented in Table 2.

Table 2

The actual values of labor standards in the IT-sphere, depending on the level of labor-intensity of the SP

Standard	Value of the norm
Low level of labor-intensity of the software product	
The standard of time, months.	4-5
The standard of the number of employees, persons.	3-5
The labor-intensity, man-months.	12-25
Average level of labor-intensity of the software product	
The standard of time, months	4-5
The standard of the number of employees, persons.	5-7
The labor-intensity, man-months.	20-35
High level of labor-intensity of the software product	
The standard of time, months	6-7
The standard of the number of employees, persons.	6-8
The labor-intensity, man-months.	36-56

Thus, within the framework of the study, the actual labor costs standards of labor resources were determined in relation to the levels of labor intensity of software products. So, the low level of labor intensity of projects varies from 11 to 27,8 points, and the standard is an interval of 12-25 man-months. These include program projects with the least cost of time and human resources. The norm of time spent on technical development of a software product is 4-5 months, with the need of 3 to 5 people to complete it.

The average level of labor intensity of software products at enterprises of the IT industry varies from 27.8 to 38.2 points and is fixed by the norm of labor intensity from 20 to 35 man-month. This level of labor intensity is characterized by software products - intermediate in terms of the complexity of the technological process and the cost of time between small and large projects. The average level can serve as the base level for assigning certain software products to low or high level of their labor intensity. This is manifested in the fact that with the continuous improvement of the process of standardization of labor and the quality of personnel at the enterprise,

a part of software products can migrate from an average to a low level of labor intensity. Ineffective management of the company may have a reverse effect. The development of such software projects takes 4-5 months, with 5-7 competent specialists involved.

The high level of labor intensity varies from 38,2 to 55 points, and the standard of labor intensity is 36-56 man-months. The labor-intensive software products as much as possible require the expenses of labor and working time in the current organizational and technical conditions of the enterprise of the IT industry. As a rule, these are complex (embedded) projects, which must be implemented in the strict framework of the specified requirements. It takes 6-7 months for 6-8 specialists to complete them.

Thus, the actual labor standard for IT enterprises was determined taking into account the levels of labor intensity of software products and factors affecting the efficiency of labor resources utilization in the national economy.

Such an approach, first of all, contributes to the establishment of objectively necessary labor costs for the performance of specific work; and secondly, it is the basis of most planning and economic calculations at the enterprise both current and prospective.

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MODELING OF THE PROCESS OF DIAGNOSTICS OF THE POTENTIAL OF AGROINDUSTRIAL ENTERPRISES

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Agroindustrial enterprises belong to the class of complex industrial and economic systems. They are in a dynamic and prone to actions both controlled and not controlled in the process of their purposeful or predetermined functioning. So, their state will eventually undergo certain changes. Therefore, it is necessary to organize the processes of identifying the problem and its establishment in order to provide further (desirable) functioning of the objects of economic activity.

The diagnosis of the potential of agricultural production enterprises is through awareness and identification of the symptoms of complications or helps to determine the problem in general terms. It is necessary to collect and analyze information regarding the internal and external environment of the operation of the enterprise to identify the causes of the problem. Such information can be collected using it within the organizational and legal form (reports, questionnaires of employees – interviewing, questionnaires, involvement of experts) and external –state statistics, which is regulated by the state. It is possible to collect information and informally, leading a conversation about the situation and personal observations. Increasing information complicates the choice of alternatives with the most favorable overall outcomes. But, if the problem is complex and if there is a lot of compromises to take, or if information and analysis are subjective, there can be no alternative that would be the best choice when assessing the capabilities of an enterprise to use the available potential efficiently and effectively. Diagnosis ensures the development of control activities in relation to the use of the potential components of agroindustrial

enterprises, causing it to go beyond its natural content and to form a controlling system.

Recently, controlling is beginning to position itself as a technology for rapid response of managerial and organizational potentials to unexpected events and changes in both the external and internal environment of enterprises.

Traditional diagnostics of production systems (PS), including agroindustrial production, is associated with considerable difficulties due to a number of features. Diagnosing the inertia of basic relationships (relationships) makes a great deal of difficulty in the implementation of procedures. The composition and functional connectivity of the parameters is manifested in the fact that the change in the value of any potential parameter can be caused by a number of reasons. Errors in the enterprise management system play an important role in this, due to the difficulties of ensuring continuous control over the state of the Sun, and the need to store, collect and process in real time a large amount of information, while simultaneously accounting for many different factors for diagnosis. This often exceeds the capabilities of the operator-manager, which practices mainly uses methods of functional diagnostics in his practice.

It is necessary to create group (integrated) intelligent computer systems (GICS) of the potential of agricultural enterprises, taking into account the change of the traditional enterprise management system («AS IS») in the direction of the desired intellectual («TO BE») and providing effective diagnostic procedures directly in the process of exploitation. In the process of diagnosis, they take into account many alternatives to interpreting events; the need for joint consideration of the set of events; the formation of algorithms for recognizing the root cause of the violation more often in the form of a set of rules than in the form of a management system. The necessity of using heuristic methods of identifying the most probable solutions and their application areas indicates the possibility of increasing the effectiveness of diagnostic procedures using methods of artificial intelligence theory.

The questions of organizing diagnostic procedures, constructing models of agricultural production objects, developing algorithms and designing specific automated systems were studied by many foreign and domestic scientists. Among them should be noted the publication of H. Azoiev [1;2], Yu. Alekseiev [3], A. Alekseieva [4], T. Burtseva [6], K. Bushuiev [7], N. Bushuieva [8], J. Brandts [9], V. Voronkova [10] and many others.

Problems of intellectualization and typification of the diagnostic system of agroindustrial enterprises based on traditional methods and principles of new information technologies need further development, despite the specified development in this direction.

At the same time, the greatest effect can be obtained by integrating these two approaches into a single system [3;4]. Many uncontrolled disturbances occur in the process of diagnosing the potential of production systems with the economic constant monitoring of the causes of violations. They differ in the presence of

uncertainties and can be realized using methods of artificial intelligence. The lack of sufficient amounts of statistical data to establish objective relationships between the values of signs and probabilistic diagnoses makes use of a heuristic description of these dependencies.

In general, a model for diagnosing the potential of enterprises and channels of information transmission can be submitted in the form of the following equations:

$$F(x,u,w,a,t)=0, y(t)=G(x,u,\xi_0,v,b,t),$$

where – vector of state;

$u \in R^r$ – vector of control;

$y \in R^m$ – vector of output variables;

w, v – vectors of disturbances and obstacles (included in equation (1) as additive and multiplicative);

a, b – vectors of uncertain parameters, moreover a(t)=0 i b(t)=0;

F, G – some given operators (differential, both ordinary and partial derivatives, integral, integro-differential, matrix, etc.).

Stochastic differential equations (linear or nonlinear, continuous or discrete), partial differential equations can be used as (1), for example, for cases where the location of production objects of agroindustrial production is taken into account.

The models for processing and identification that can be practically implemented are as follows:

$$x(t) = A(t,\theta)x + B(t,\theta)u + W(t), y(t) = C(t,\theta)x + V(t),$$

or, in a discrete case

$$y(k+1) = H(k)x(k) + V(k),$$
$$x(k+1) = \hat{O}(k+1, k, \theta)x + \Psi(k+1, k)u(k) + W(k)$$

where A, B,W, C, H, V, Φ, Ψ – fuzzy variables;
x(t) – vector of state;
y(t) – vector of output variables;
u – vector of control;
K – vector of quantitative variables;
x(κ+1) – vector of quantitative variables of state;
y(κ+1) – vector of quantitative output variables.
Typically, the control condition (schema) of diagnosis is the ratio, as:

$$\mu(E(t)) < \delta,$$

where $\mu(\cdot)$ – some given metric, for example, the Euclidean norm;

δ – allowable threshold value, which is given;

$E(t)$ – failure (deviation) or departure from the norm, or evaluation of the state from the reference, or evaluation of the parameters from the nominal, or characteristics of the estimates from the possible (for example, covariance of the updating processes in the Kalman filter), etc.

For example, $E(t)=\hat{O}\left(y^T, q^{-1}y^T, ..., q^{-k}y^T, u^T, q^{-1}u^T, ..., q^{-k}u^T\right)$, where Φ – operator, κ – the order of the control scheme, which is subject to determination (or task).

Then the condition for the absence of defects will take the form: $E(t)=0, t=0,1,2,...$ but the condition (4) can be rewritten as follows: $\|E(t)\| \le \delta$.

We note that the task can be solved as in the case of deterministic, which happens rarely, and in conditions of stochastic and multiple uncertainties.

It is necessary to create intelligent and integrated computer diagnostic systems based both on traditional methods and on the basis of new information technologies for increasing the efficiency and quality of diagnosing complex manufacturing systems.

In conditions of fuzzy information $X_1,...,X_n$ – a number of features, the specific values of which are made judgments about the subjective probability of diagnoses from a predetermined number of diagnoses $D_1,...,D_k$. Each of them X_i, $i=\overline{1,n}$, gets a value from the plural $X=\left\{x_{i1},...,x_{im_i},...,x_{ip_i}\right\}$. At time t the state of the object is described by a vector of signs: $\bar{X}(t)=\left[\bar{X}_1(t),...,\bar{X}_n(t)\middle|\bar{X}_i(t)=X_{im_i}\right]^T, m_i=\overline{1,p_i}$,

where $\bar{X}_i(t)$ – realization of the sign X_i at the present moment t.

It is required to determine the assessment of the probability (extent of possibility) of diagnoses $P_{\hat{a}}(j)$:

$\forall j=\overline{1,k}: \dot{o}_{\hat{a}}(j)=\dot{o}_{\hat{a}}\left(D_j / X(t)\right)$.

where $P_{\acute{o}}$ – symbol of subjective probability.

The method of representing expert knowledge is an important issue for the form of representation of expert knowledge in the system.

The first way. Expert knowledge is provided in the form of the following system of rules:

$$\forall i = \overline{1,n}, \forall j = \overline{1,k} : X_1 = x_{1m_1}, \ldots, X_n = x_{nm_n} \Rightarrow$$
$$\Rightarrow P_{\hat{a}}(D_j | X(t)) = P_{\hat{a}s}\left(D_j | (x_{1m_1}, \ldots, x_{nm_n})\right)$$

where x_{im_i} – specific value X_i from the plural; $\{x_{im_i}\}, m_i = \overline{1, p_i}; \; p_i = card\{x_{im_i}\}; \; P_{\hat{e}s}$ – s – value of estimating the probability of a set of possible values, $\{P_{\hat{a}s}\}$, $P_{\hat{a}s}$ $[0,1]$, $s = \overline{1,m}$.

The second way. Another possible type of expert knowledge representation is a system of rules that are described with the same notation as follows:

$$\forall i, \forall j, \forall m_i : x_i = x_{im_i} \Rightarrow P_{\hat{a}}(D_j | X_i) = P_{\hat{a}s}(D_j | x_{im_i})$$

Both methods of presenting expert knowledge have different properties, and the algorithms for processing these forms of information are also different.

The most convenient for the expert form of presentation of knowledge of the implicit form is the linguistic, which is most commonplace for a person. In this case, the expert operates blurred (fuzzy) categories, such as: «If the value of X_i is very large, then the probability D_j is small». Therefore, a linguistic approach based on the theory of fuzzy sets of L. Zade can be applied to the compilation of fuzzy information model [6; 7; 8; 10; 11].

In the fuzzy algorithm, the diagnosis of the sign and probability are represented by linguistic variables (LV), which are determined by tuples:

$$\langle X_i, T_i, V_i, G_i, M_i \rangle, i = \overline{1,n}$$
$$\langle P_{\hat{a}}, P, U, S, Q \rangle,$$

where $X_i, P_{\hat{a}}$ – the namely of the corresponding LV;

T_i, P – term set of variables X_i and $P_{\hat{a}}$ accordingly, namely, the set of their linguistic values, which are the name of the fuzzy variables (FV) :

$$A_{if_i}\left(f_i = \overline{1, p_i} / p_i = card T_i\right) \text{ і } B_r\left(r = \overline{1,m} / m = card\, P\right)$$

with values from universal sets V_i and U; G_i, S – syntactic rules, that generate the names A_{if_i} and B_r values of the variables X_i and $P_{\hat{a}}$; M_i, Q – semantic rules that allow you to convert linguistic variables to each new value (NV). New value A_{if_i} and B_r can be represented in the form of the corresponding tuples:

$$\langle A_{if_i}, V_i, \widetilde{C}_{if_i} \rangle, \; i = \overline{1,n},$$
$$\langle B_r, U, \widetilde{E}_r \rangle, \; r = \overline{1,m},$$

where A_{f_i}, B_r – nomination of NV; V_i and U the same as above;

$$\widetilde{C}_{if_i} = \bigcup_{v \in V_i} \mu_{\widetilde{C}}(v)/v \; \text{ і } \; \widetilde{E}_r = \bigcup_{u \in U} \mu_{\widetilde{E}}(u)/u$$

– fuzzy subsets (FS) of sets V_i and U, which describe the constraints on the possible values of NV A_{f_i} and B_r; $\mu_{\widetilde{C}}(\cdot)$ and $\mu_{\widetilde{E}}(\cdot)$ – membership function (MF) for $\widetilde{C}_{f_i}$ and $\widetilde{E}_r$. For example, for a certain block of production systems with a diagnostic feature, the following linguistic variables are aligned:

$$\langle X_1, T_1, [\cdot,\cdot], G_1, M_1 \rangle;$$
$$\langle X_2, T_2, [\cdot,\cdot], G_2, M_2 \rangle;$$
$$\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots$$
$$\langle X_5, T_5, [\cdot,\cdot], G_5, M_5 \rangle;$$

where term set $T_1 = \ldots = T_5 =$ {much increased, increased, increased slightly, decreased slightly, decreased, decreased significantly, did not change}.

The probability rating is represented by the same linguistic variable $P_{\hat{n}}$, and term set P consists of the following linguistic values of the variable: B_1 – ruled out, B_2 – almost incredible, B_3 – very unlikely, B_4 – unlikely ..., B_m – exactly.

The question of building a membership function for and $\widetilde{E}_r$ can be resolved using the recommendations presented in [3; 4; 5; 6].

Thus, the expressions (7) and (8), in accordance with the notations (9) – (12), in general can be written down as follows:

$$\forall i, \forall j: \text{ if } X_1 \text{ is } A_{1f_1}, \ldots, X_n \text{ is } A_{nf_n}, \text{ then } P_{\hat{n}}\left(D_j/(X_1, \ldots, X_n)\right) \text{ is } B_r$$

$$\forall i, \forall j, \forall f_i: \text{ if } X_i \text{ is } A_{if_i}, \text{ then } P_{\hat{e}}\left(D_j/X_i\right) \text{ is } B_r$$

It should be noted that the presentation of information in the type model (14)

further requires an additional procedure for obtaining for each diagnosis of a comprehensive assessment of the probability of $P_б\ (D_j /(X_1,...,X_n))$ by generalizing, according to a certain rule, independent evaluations $P_â\ (D_j / X_i)$ obtained on separate grounds.

The model (13) is devoid of this disadvantage, but has a larger dimension. The rules of type (13 and 14) can also be presented in the form:

if X_i is A_{f_i}, then D_j with probability is B_r.

Thus, the fuzzy production model (fuzzy knowledge base) consists of diagnostic rules («dispatcher – expert»):

if X_i is A_{f_i}, and

if X_2 is A_{2f_2}, and

.....

if X_n is A_{f_n}, then D_j with probability is B_r

The matrix of fuzzy relations is based on a set of rules:

$$X_j R D_j \quad \text{or} \quad R = \bigcup_{x \in X \in D} \mu_R (x, d)/(x, d)$$

The developed mathematical model of the intellectual system of potential diagnostics with its software allows in real conditions to control the changes in the possibilities of enterprises of agroindustrial production.

So, it can be argued about the possibility of creating intelligent computer systems that combine the properties of traditional systems and use «hard» models and algorithms and such signs of intelligent systems based on knowledge, such as base of knowledge, benevolent interface, logical conclusion, self-study.

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CONCEPTUAL ASPECTS OF THE SERVICES ENTERPRISE ECONOMIC SECURITY

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Economic security is one of the top priorities of functional safety. Globalization, informatization and fierce competition actualize the problem of ensuring economic security. Development of new and adaptation of the existing mechanisms and instruments to improve the efficiency of security is a necessary condition for the successful functioning of any company.

The service sector plays an increasingly prominent role in the development of economy. However, this does not mean that service providers today are in a privileged market position. Competition in the service market is aggravating with every passing year. Under the influence of globalization, it acquires an international dimension. The lack of visible progress in the development of the real sector of the economy slows down the profitable development of services business.

At the same time, the situation on the services market in Ukraine can be significantly changed due to reforming the local self-government bodies, the purpose of which is to entitle the local management authorities with the right to

solve the local matters at the expense of their own resources.

Sustainable development of market relations leads to increasing the efficiency of management. Therefore, a beneficial prerequisite for the development of enterprises in a market economy is the effective economic security management. It is this aspect that provides a successful counteraction of an enterprise to the negative effects of the environmental factors, and promotes its developmental advantages, making it more competitive at the market. Thus, enterprise security management is one of the most important and urgent problems, both from the theoretical and practical point of view.

Assessing the development of the services sector on a global scale, it should be emphasized that the decisive factors in it are the scientific-technological revolution and the structural-technological reorganization of the production process, since the scientific-technological revolution stimulates the emergence of a wide range of new services on the market, which are consolidated with information technology, computerization and innovative communication methods. The development of public services in many countries has stimulated the privatization and restructuring of service activities, primarily in transport, telecommunications, financial and insurance services. At the same time, scientific and technological progress removes barriers on the way of transmitting the services at a distance, giving them an international character [3]. Consequently, the role of economic security in the services sector increases significantly.

In contemporary scientific literature on economics, considerable attention is paid to security in general and the economic security of enterprises in particular. However, a number of important issues still require serious and scrupulous investigation.

The economic security of the business entity is considered to be the principal and integral part of the economic security assurance for the whole enterprise. In Latin «security» means “freedom from anxiety: se (without) – cura (care, anxiety), i.e security is the position of an entity, in which the probability to change inherent properties of this subject or its environment parameters is negligible [5].

In view of this, the economic security of the enterprise, including the services sector, means ensuring such functioning of the enterprise which implies achieving a positive socio-economic effect by obtaining profits and satisfying the needs of consumers and employees of the enterprise [7].

Successful operation and development of services enterprise largely depends on the effective management decisions regarding its economic security. Service companies are particularly sensitive to changes in the environmental factors, since their activities and the products of these activities are quite specific.

The material basis of economic security of the service sector is its economic potential, which determines the possibility of protecting the economic system from the adverse influence of the external and internal environment.

The theoretical analysis of scientific sources of the Ulrainian and foreign

researchers on the issues of economic security of enterprises makes it possible to identify the following specific features of the service enterprise management and the peculiarities of entities' economic security management:

- intangibility – the impossibility to experience consumption;
- interdependence of production and consumption;
- dependence on the time and place of receiving the service;
- impossibility of preservation;
- flexibility of demand for income and prices;
- seasonal fluctuations in demand;
- subjectivity of the assessment of the quality of the service, etc.

It should also be noted that the economic security of the company is dependent on the interaction of various factors. Some factors in a particular period of time can be considered as stable (for example, technical characteristics of fixed assets, number of employees, etc.), others are sometimes subjects to significant changes over a relatively short period of time (eg. fluctuations in product prices, supply and demand levels, level of investment activity, etc.). A number of factors can not be accurately quantified [8, p. 773].

According to the economic theory there are four cases, in which external and internal factors can cause serious damage to the service enterprise:

1) the system of economic security of the enterprise is constructed in such a way that it can not predict a threat to its safety;

2) the threat has arisen, but the officials in charge of the economic security of the enterprise can not see it;

3) the threat has been detected, but the management of the company is unable to prevent its negative consequences;

4) the management of the company tries to solve the problem, but its actions do not lead to any positive result [6, p. 205].

Any service is known to involve two interrelated processes:

intra-firm manufacturing process (often invisible to consumers);

interaction with consumers (intangible part of the service).

It is worth pointing out that the provision of economic security of the services sector has certain specificity owing to high significance of interaction with customers/clients. Consumers of services apply for their provision, as a rule, after more rigorous testing of consumer products of service enterprises (in comparison with manufacturing enterprises). Such increased requirements to the services quality is due to the complexity of neutralization techniques of marketing services, specificity of service quality control, determination of intangible services utility, cost estimates for consumption of certain types of services, control of service delivery, quick change of service providers, assessment of the service reliability.

Managing the interaction with customers becomes even more complicated in the case of diversification of service enterprises. In this regard the strategy should be assessed from the point of view of preventing the emergence of threats to their

economic security

The most important tasks of providing economic security to the enterprises of the service sector include:

- assessment of the internal and external threats to the security of the enterprise, businesses, projects, contracts;
- conducting business marketing (competition investigation and counterintelligence);
- preparing information and analytical materials concerning markets, projects, contracts, partners;
- verification of business reputation and solvency of counterparties and partners;
- preventing threats and illegal actions on the part of unscrupulous competitors;
- verification of staff reliability;
- conducting business negotiations with debtors, minimizing the receivables;
- providing physical protection of the objects and top management;
- interaction with law enforcement agencies and supervisory bodies;
- protection of confidential information, etc.

The study has revealed the fact that the economic security of service enterprises is inherently dual: on the one hand, it ensures the possibility for an enterprise to operate on its own, on the other hand, it is a part (element) of the economic security of the higher-level system, ensuring the fulfillment of functions at the regional and state levels. In the market economy conditions, the enterprise of the sphere of services, as an open system, functions in a complex external environment, which is characterized by instability and constant dynamics. It forces the company to adapt quickly to the new conditions, to search the ways to survive in a market economy, to take into account factors of uncertainty and instability of the economic environment [4, p. 654].

Numerous factors that pose a threat to the economic security of the service enterprises encourage the establishment of a monitoring system for the purpose of early detecting of danger signs and taking necessary measures of protection and counteraction.

«External» and «internal» threats are highly individual for each enterprise. At the same time, in our opinion, these categories include certain elements that are acceptable to practically any economic entity, including the sphere of services. Thus, the external threats and destabilizing factors include the illegal activities of criminal structures, competitors, enterprises and individuals engaged into industrial espionage or fraud, insolvent business partners, formerly dismissed for various misdemeanors the employees of an enterprise, as well as misfeasance of the corrupt elements from among the representatives of the controlling and law enforcement agencies.

The internal threats and destabilizing factors include intentional and unintentional actions or inactions of the enterprise employees, which contradict the interests of its commercial activity. The consequences of such threats are: causing heavy economic

losses, information leakage or loss of information resources (including information containing trade secret and / or confidential information); undermining the business image of the enterprise; problems in relationships with actual and potential partners, conflicts with the representatives of the criminal environment, competitors, regulatory and law enforcement agencies, occupational injuries and others.

N.I. Havlovska and Ye.M. Rudnichenko suggest to identify the threats by an area of their origin, and the risks as issues associated with some degree of uncertainty of the result owing to either the reckless decisions (actions and/or circumstances) or inactivity to minimize threats. Using the described approach, this study explores the main threats in the service enterprises activities by the sphere of their occurrence. The identified threats then can be classified accordingly:

the personnel: incompetence of the staff; non-compliance with qualification standards; aggressive behavior; criminal orientation in activities (thievery, disclosure of confidential information, etc.); non-compliance with safety rules;

information support: imperfect software; lack of information security system (both intra-system and customer information); ineffective work of the site or its absence; insufficient level of integration into the world information space; unsatisfactory level of communication;

technologies: non-compliance with standards and safety rules; obsolescence of equipment; low-power equipment; low energy efficiency; insufficient ergonomics; non-compliance with environmental and sanitary norms; inappropriate provision of housing and utilities services;

finances: negative financial results; ineffective pricing; lack of financial control system; imperfect system of payments to customers, staff and suppliers; non-compliance with the fiscal legislation; decrease in revenues due to customers outflow;

logistics: lack of the proper resources provision and their inappropriate quality; ill-timed fulfillment of orders; shortfall or residual resources;

physical security of clients: absence of security service; lack of technical facilities for the protection of premises; absence of contracts with commercial organizations on protection and maintenance; possibility of outsider's penetration into the territory of the enterprise; the possibility of attack by unauthorized persons or creating a physical threat to customer's safety;

an enterprise image: lack of image-making events; the formation of a negative image; provocations on the part of competitors;

the regulatory and legislative framework may contain such threats as legislative changes; administrative pressure; changes in foreign economic relations [1, p. 21].

Successful protection of services enterprises from the threats depends on the completeness of the implementation of the relevant measures aimed at the solution of this problem.

The theoretical rationale for the choice of the appropriate methods and strategies of providing economic security in the services sector is another important

conceptual aspect in solving the problem of economic security of the enterprise. We have highlighted the following methods as those that might contribute the best to the successful solution of the above mentioned problem:

- collecting and analytical processing of the information on the economic situation in the enterprise environment at the macro- and micro-levels;
- drawing up forecasts for the economic situation development at the macro and micro levels;
- identification (prediction) of the possible threats for the company that could affect its activities at various levels;
- making decisions on preventing or minimizing the impact of the identified threats;
- organizing the activities aimed at the prevention of possible threats;
- advance development of models of counteraction to the negative impact of the threat on the activities of the enterprise;
- carrying out practical experiments to check the efficiency of the developed models;
- identification, analysis and evaluation of the actual threats to the economic security that have arisen;
- decision-making concerning the response to the threats that have arisen;
- implementation of the developed models in practice;
- monitoring and evaluating the effectiveness of the implemented decisions;
- introducing adjustments to the system of counteraction to threats
- continuous improvement of the economic security system of the enterprise [2, p. 424; 6, p. 206].

Each of the above mentioned methods of arranging the economic security of an enterprise is characterized by its own content and a set of functional criteria. The application of these methods will allow full and optimal use of all the resources in a single algorithm to counteract the external and internal threats for the enterprise.

Thus, the analysis of the potential threats and their negative impact on the service sector enables the enterprise management to identify the interactions between the most typical factors of the threats, to assess their impact on the activities, and it will allow to anticipate the emergence of the most dangerous threats for the service sector and take preventive measures.

However, in today's market conditions, the provision of economic security of the services sector is complicated by certain factors, namely a lack of resources, the impossibility to predict changes in the external environment, miscalculations in the management sector.

Thus, ensuring economic security for the services enterprise implies a set of measures and a clear system for organizing their implementation and control, which, in its turn allows to achieve the highest level of the enterprise economic security. The level of the economic security of enterprise, in its turn, depends on how effectively an enterprise prevents internal and external threats and eliminates

the consequences of their negative impact on the the enterprise functioning.

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MODERN CHALLENGES IN ACHIEVING FOOD SECURITY

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In Ukraine food security is considered to be one of the key problems in the formation of a holistic concept of the national security. Without a well-established and reliable system of food supply, the country becomes increasingly dependent on other states. Therefore, in the light of globalization processes a balanced state strategy in this sphere can not only significantly improve the overall economic situation in the country, but also strengthen its role in the international economic

environment, and vice versa, the unconstructive influence on the food supply system can cause aggravation of public problems, loss of domestic and foreign markets by the domestic producers and the formation of import dependence of the national economy.

It seems important to pay attention to the fact that food security is inseparably linked with the existing political and economic systems, as well as with peculiarities of management and national traditions. Today, such a problem also exists in Ukraine, but, above all, as a socio-economic one.

Food security is an important economic category inherent in every economic system. Without food, as it is known, no ethnic group is able to exist and survive.

In the modern scientific literature, there is no single approach to the definition of the category of "food security', which is explained, first of all, by the complexity and multidimensionality of this concept.

On the basis of the detailed analysis and study of the existing scientific approaches on this issue, presented in various scientific publications, it is important to allocate the following peculiarities of the definitions of the term "food security" (See Figure 1).

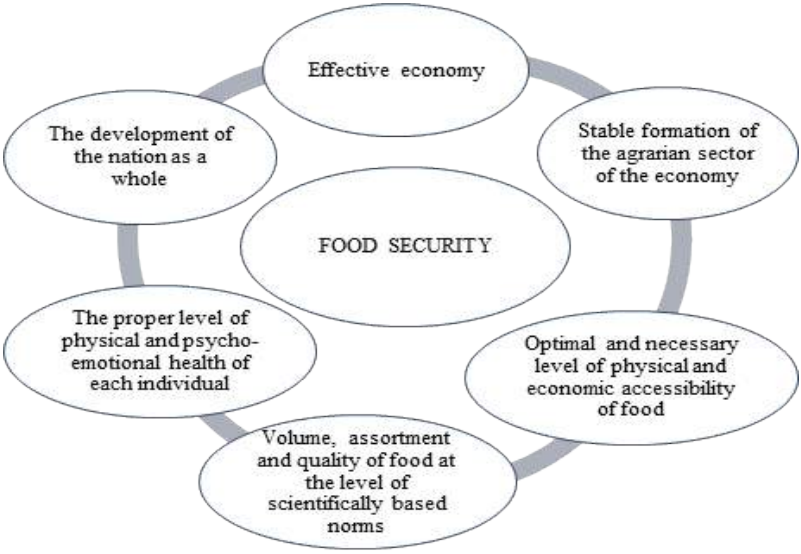

Figure 1. The essence of the definition of "food security"

Food security is a multidimensional economic category, which includes: economic, political, social, environmental, production, quality, innovation, education, resource component. Therefore, the successful solution of the issue of ensuring food security should be represented by a set of measures for the effective

production, storage, processing and sale of food at a country level. In this context, we consider it expedient to emphasize that only a competitive agricultural sector can be the basis for the formation of the national food security.

It is believed that the system of food security of the state should be based on the principles of self-sufficiency, independence, stability, accessibility of food (physical and economic one) for the population. At the same time, food quality and safety problem is not given proper attention. It is well known that the solution of the food problem depends not only on the quantitative provision of the population with food, but to a large extent on their quality. `In the present-day context this problem is becoming of priority importance and of special urgency, since the safety and quality of food largely depends on the life and health of people [1].

One of the most important social indicators of social progress, as well as the potential for economic growth and security of the state, which occupies a leading place in the system of values of any civilized country, is the health status of the population that reflects the nation's well-being, its socioeconomic, ecological, demographic, sanitary and hygienic situation and so on.

Health "contributes" to the economy (both at the individual level and at the country level, especially in the high-income countries) due to increased labor productivity, labor supply, skills and savings that are made available for investment in physical and intellectual capital [2]. The United Nations (UN) has chosen the health and freedom of citizens as comparative indicators of the level of social progress in the countries with different types of culture and society development. Since 1990, the UN regularly assesses the well-being of the countries with the help of the Human Development Index (HDI) in order to shift the focus of the economy development from the accounting of national income to people-centered strategies only [3].

The HDI is intended to become an indicator of how the state uses its material wealth in favor of the population, that is, the social development of the country. With the accelerated aging of the population, the most modern demographic challenges to human development in Ukraine are closely related. Thus, for example, in 2017, the proportion of people over the age of 65 years old was almost 16,12%, and the population was estimated as "very old" (according to the UN scale, the old population is considered to be when the share of the country's population in the above-mentioned age is more than 7%) [4, p. 17]. It is expected that in the coming decades this process will progress, and by 2050 the proportion of people over 65 years old will exceed 24% [5, p. 53].

The most meaningful indicators for assessing the current situation in Ukraine are the indicators of the death rate of the country's population. Thus, the total mortality rate of population for the last five years is kept at the level of 14,5 cases per 1000 population, against 6,5 cases in the countries of the European Union. According to the latest statistical data, in January-November 2017 the population decreased by 181,5 thousand people. At the same time, the number of deaths significantly

exceeds the number of births in Ukraine: 64 deaths per 100 deceased. As in previous years, cardiovascular diseases were the leading cause of people death in 68% of cases, followed by malignancies – 14% and third place in this list was occupied by various external causes (trauma, poisoning, etc.) – 6% [6].

As for the food ration structure, it should normally contain at least 100 grams of protein per day. Nutrition, which lacks not only calories, but also proteins, especially animal origin, as well as fats, vitamins, trace elements, is called inferior. The inadequate nutrition of a large part of the population of the developing countries, and a certain proportion of the poor population in other countries, is an important reason for the low life expectancy and diseases caused by protein and caloric shortages, acute shortages in the body of vitamins and minerals. The presence or absence of food affects the physical and psychological state of people, and provides a level of social and political tranquility in the state [7].

The unfavorable situation in the mortality rate of the population of our country is due to a number of reasons: the low living standards of the vast majority of the population, as well as the crisis state of the public health system caused by socio-economic transformations in the state, and the devaluation of health by both the state and the citizens of Ukraine. Annual report on the health of the population, the sanitary and epidemiological situation and the results of the health care system in Ukraine (2017) concluded that "in the current crisis conditions of the development of the Ukrainian state, one should not count on positive dynamics of life expectancy in the short-term period of time" [4, p. 30].

The current challenges to the country's food security are due to changes in the social and economic situation, reforms in the main sectors of the national economy, uncertainty of the state policy on the development of the agro-industrial complex in general and the priority of its separate branches, as well as the contradictory views of different branches of government at different levels of government in terms of purpose, forms and methods implementation of the agrarian reform. In addition, an institutional support is imperfect in terms of solving problems of state regulation of economic relations, the formation of the market environment and its infrastructure, observing price parity, and reducing the pressure of monopolized industries in agriculture [8].

In the context of integration development, issues related to the regulation of food safety at the level of individual countries are top priority and require constant attention, as evidenced by international, in particular European practice. The root cause of the emergence of threats to the quality and safety of food raw materials and food products is the complexity of the environmental situation in virtually all regions of the world associated with the direct human-induced activities, in particular, the increase in the number of chemical, physical, biological origin pollutants. In Ukraine, the situation is complicated by the use in the food industry of excessive amounts of synthetic chemicals as technological regulators of the structure, organoleptic, physicochemical and other properties of food products. As a

consequence, the level of quality / safety of food products in the domestic market is rather low, it does not meet modern European standards and standards and requires justifications at the level of state regulation using scientific principles and principles of safety management, innovative mechanisms for their practical provision [9].

According to the Law of Ukraine "On Safety and Quality of Food Products":

- the quality of a food product is a combination of the properties of a food product that is determined by its ability to meet the needs of the human body for energy, nutrients and flavors, safety for its health, stability of its composition and consumer properties during the period of suitability for consumption;

- food safety is the absence of toxic, carcinogenic, mutagenic, allergenic or other unfavorable for the human body effects of food products when consumed in the accepted quantities, the boundaries of which are established by the Ministry of Health of Ukraine [10].

Achieving the necessary quality of food requires the appropriate production conditions, taking into account the influence of various factors on the provision and improvement of quality, and therefore, on food security as a whole.

Thus, it can be concluded that the problem of food quality and safety really exists. Its solution is of a complex nature, which requires taking into account industry-specific features of quality formation at all stages of agricultural production, processing, storage, transportation and sale of finished products. In order to improve the quality and safety of food, it is necessary to improve the regulatory framework governing food quality and safety; continuation of the harmonization of international standards, especially in the method of monitoring the quality and safety of products; ensuring that technical specifications comply with applicable laws and standards; taking into account the quality and safety indicators of food products when justifying the system of food safety indicators [1].

So, the factors of food quality and safety are gradually gaining priority, along with such factors as the physical and economic availability of food for the population.

Everyone should be sure of the quality of food that falls on the table of each Ukrainian family. The state, as a guarantor of the development of a healthy, active and productive society, must deal with the above-mentioned tasks. In the interests of preserving and strengthening the nation's health workforce, an adequate nutrition is necessary for the population, taking into account natural and economic conditions, demographic characteristics, the type of labor activity and national traditions.

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MANAGERIAL ASPECTS OF THE ACCOUNTING POLICY OF THE ENTERPRISE

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The problems that arise in the process of economic globalization make it necessary to create a qualitatively new management system and an adequate accounting system at the enterprises of various forms of ownership. Practice confirms that the existing system of accounting is not able to satisfy completely the information needs of its owners and meet the requirements of investors, creditors, managers and other users because of its limited nature. Currently, reorientation of the accounting system to the needs of the enterprise management system becomes extremely urgent.

Accounting policy is an internal regulatory document which is intended to become the basis for the reporting formation that is particularly important for the enterprise management needs. A well-defined accounting policy significantly

influences the efficiency of enterprise management, therefore, in each enterprise, taking into account the specifics of its activities, such an accounting option should be chosen that can provide the most complete implementation of management functions.

Theoretical, organizational and methodological aspects of formation of the accounting policy of the enterprises are considered in the scientific works of such well-known scientists as R. Alborov, A. Banayev, P. Bezrukih, F. Butinets, T. Voitenko, S. Golova, Z. Gutsayluk, N. Goncharova, P. Zhitnyi, A. Kashaev, V. Kulik, S. Levitskaya, N. Malyuga, B. Nidles, M. Pushkar, V. Sopko, M. Shchirba and others. Today, scientific discussions continue on the feasibility of approving a single accounting policy and drawing up unified reporting for the needs of enterprise management. The opinions of scientists on this issue are sometimes completely opposite from total denial to recognition of the need to approve a single accounting policy. On the basis of the analysis of the regulatory framework, as well as the data, widely presented in the scientific works of famous Ukrainian and foreign authors, it can be mentioned that the accounting policy of the enterprise has a significant impact on management decisions and requires ongoing research.

Today, a formal approach to formation of the accounting policy of the enterprise is increasingly observed. Therefore, the study of accounting policy issues determines the relevance of the main topic of this scientific research.

It should be noted that in the economic literature there are generally several types of accounting policies: the policies for financial accounting purposes, the policies for taxation purposes and the policies for management accounting purposes [1, p. 49; 2, p. 24].

According to S.O. Levitskaya, "business entities operate today with the following types of accounting alternatives: analytical, synthetic, operational, statistical, accounting data, tax, primary, time-table, dynamic, actuarial, social, creative and strategic ones" [3, p. 218].

We believe that since accounting is an information base for various types of accounting records and reports, the accounting policy should not only be unified for the enterprise's accounting process, but also take into account the requirements of various users of accounting information. Obviously, an accounting policy contributes to the strengthening of accounting and analytical functions in the management of the enterprise and allows to react quickly to changes occurring in the process of the enterprise functioning.

During this study it was revealed that Ukrainian scientists offer their own definition of the accounting policy of the enterprise. However, taking into account the results of our analysis of various scientific publications concerning this subject, and our practical experience in this sphere, we believe that the notion of the enterprise's accounting policy is currently being narrowly restricted. Moreover, it is aimed primarily at defining the principles, rules and procedures for financial accounting.

V.A. Kulik defines the accounting policy of the enterprise as "a system of methods of accounting and financial reporting that is used by the enterprise for information support of economic decision-making and presupposes the most reliable reflection of the facts of the enterprise economic activity" [4, p. 54].

Butinets F.F. notes that the accounting policy of an enterprise is "not just an aggregate of accounting methods selected in accordance with the conditions of enterprise's management system functioning, but also a choice of accounting methods that allow using different options for reflecting the facts of economic life in accounting, depending on the goals set" [5, p. 10].

We wholeheartedly support the scientific position of M.S. Pushkar and M.T. Shirba, who argue that the accounting policy is a management mechanism for accounting, which is carried out on the basis of the selection and development by the enterprise of certain methods (options), rules and procedures for the organization and methodology of accounting, compilation and reporting based on generally accepted principles and specific activities of the enterprise for obtaining full, objective, reliable and unbiased information with the purpose of making reasonable management decisions by interested persons [6, p. 132].

T.V. Voitenko defines the accounting policy as a certain methodology of accounting, which was chosen by the enterprise in accordance with established norms and features, and is aimed at achieving its goals and objectives, and is also used to ensure the reliability of financial reporting and a quality management system [7, p. 15].

In the course of this study, we consider it expedient to consider various approaches to defining the essence of the notion "accounting policy of the enterprise" in national and international legal acts of different countries of the world

International Accounting Standard 8 "Accounting Policies, Changes in Accounting. Estimates and Errors" points out that accounting policies are the specific principles, bases, conventions, rules and practices applied by an entity in preparing financial statements [8].

Methodical Recommendations of the Applying of the Accounting Policy of the Enterprise [9] provide that "the accounting policy is an integral part of the organization of accounting in the enterprise".

The Law of the Republic of Armenia "On Accounting" provides the following definition of this concept. Accounting policy is a system for collection, registration and consolidation of monetary information on stock and flow of assets, ownership capital and liabilities of an organization carried out by means of a comprehensive and on-going documentary accounting of all business operations [10].

According to the Law of the Republic of Moldova "About Financial Accounting", accounting policies can be described as a set of the fundamental principles, quality characteristics, rules, methods and methods approved by the subject's management for financial accounting and creation of financial statements [11].

The Law of the Republic of Belarus "On Accounting and Reporting" states that

accounting policy is “a set of organizing and conducting the accounting adopted by the enterprise” [12].

The Law of the Republic of Kazakhstan “About Financial Accounting and the Financial Reporting” [13] defines the accounting policy as the “specific principles, bases, regulations, rules and practices, accepted for application by individual entrepreneur or organization for maintenance of accounting and preparation of financial reporting in accordance with requirements of the legislation of the Republic of Kazakhstan on accounting and financial reporting, international or national standards, international standards for small and medium business and model chart of accounts of accounting, based on their needs and features of activity”.

In accordance with the Law of Ukraine “On Accounting and Financial Reporting in Ukraine”, the accounting policy is a set of principles, methods and procedures used by the enterprise for accounting, preparation and presentation of financial statements [14].

In our opinion, the definition of accounting policy in national and international standards limits the functions of the accounting policy of the enterprise in the process of preparation and presentation of financial statements and does not affect the significance in solving specific managerial tasks.

Therefore, based on the study findings, we can argue that the accounting policy (internal document or a set of tools and methods of accounting and financial reporting, or a set of interrelated standards of the current legislation) serves as the basis for the organization of accounting in the enterprise and is considered to be the initial link in the process of creating information for management needs.

Today the formation of accounting policy at Ukrainian enterprises has a number of problems that arise already at the very beginning of work on the formation of accounting policy, namely, when determining the priority areas for creation an accounting system at the enterprise.

Thus, there is a significant dependence of management decisions on the quality of accounting information. The formation of an accounting policy for the needs of enterprise management is the interrelation of specific principles, rules and methods, used by the enterprise for the preparation and presentation of financial statements that significantly affect the evaluation and decision-making processes by interested users. Therefore, the main objective in the process of the development and implementation of the enterprise’s accounting policy should be the formation of the complete, reliable and unbiased information for management needs.

Consequently, the main problems of formation of the accounting policy of an enterprise for its management system requirements are the following ones:

– ignoring changes in regulatory documentation and the absence of proper display of them in the Accounting Policy Statement;

– formality in drafting the Regulations on Accounting Policy, and the unreasonableness of the elements of this policy and duplication of certain clauses of normative documents;

– the lack of structuring of the Regulation on accounting policy, incomplete coverage of the issues of accounting for individual objects;

– the accounting policy is not developed by types of accounting at the enterprise;

– lack of development of the accounting policy for the formation of internal management reporting.

The accounting policy for the purposes of management accounting should include: a cost accounting option; a cost accounting system; a method of cost accounting and costing of products; an order of formation and list of prices; a list of cost centers and responsibility centers; a list of cost objects, calculation objects and calculation units; a list and composition of the articles of calculation of the production cost of products; a list and composition of variables and permanent general production costs; a basis for distribution of general production costs; a variant of the consolidated accounting of production costs; evaluation of finished products; an estimation of balances of work in process; an income accounting method; a working plan of accounting calculation of costs, revenues and financial results; a list of plans and budgets; the registers of management accounting; and, finally, the structure and the forms of internal reporting, the frequency of their completion and submission by responsible persons.

The practical application of the above-mentioned objects and the accounting policy elements in the system of management accounting will allow implementing a reasonable assessment of the activities of the responsibility centers and their contribution to the overall performance of the enterprise.

Thus, we can conclude that the problems and proposals discussed above should be taken into account when developing specific measures aimed at optimizing the accounting policies of various enterprises, and eliminating these problems in the formation of accounting policies at the enterprises will contribute to the validity of accounting records in order to make rational management decisions by end users of the financial statements produced by the enterprises.

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ECONOMIC AND SOCIAL ASPECTS OF AGRICULTURAL LAND USE IN UKRAINE

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Ukraine has a significant land-resource potential. As of January 1st, 2016, the land fund of Ukraine is 60,3 million hectares or about 6 % of the territory of Europe [5, p. 63]. Agricultural lands amount approximately 19 % of the total European, including arable land – 27 %. The index of agricultural land per one person is the highest among European countries and amount 0,9 hectare, including 0,7 hectare of arable land (average European countries – 0,44 and 0,25 hectare, respectively) [6].

The total area of agricultural land is 42,7 million hectares or 70 % of the total area of the country, and the area of arable land is 32,5 million hectares or 78.4 % of all agricultural lands [5, p. 63]. In the structure of agricultural lands of enterprises and citizens, certain differences are observed due to market orientation and different development of the livestock sector (Pic. 1, Pic. 2). In particular, in the structure of enterprises, the share of arable land is 93,9 % and 3,2 % of pasture, and in the structure of land use of citizens is 74,2 % of the arable land share, 13,8 % of pasture, 7,4 % of hay plants, perennial stands – 3,9 %.

Such a structure of land resources of the country and land use leads to significant imbalances, the deepening of which may pose a threat to the environment and the living environment, as well as the efficiency of economic activity, sustainable development of the national economy in general.

In Ukraine more than 92 % of the territory is used for economic use. Extremely high level of cultivation of the territory is more than 54 % (in the developed countries of Europe it does not exceed 35 %). The actual forest area of Ukraine is only 16 %, which is not enough to ensure ecological balance (the average indicator of European countries – 25-30 %).

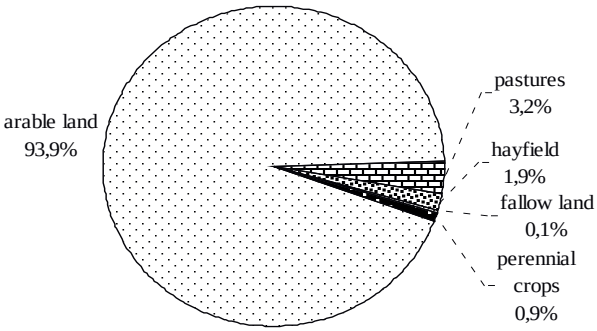

Fig. 1. Structure of agricultural land of agricultural enterprises on 1 January 2016
Source: it is built according to the data [5, p. 64]

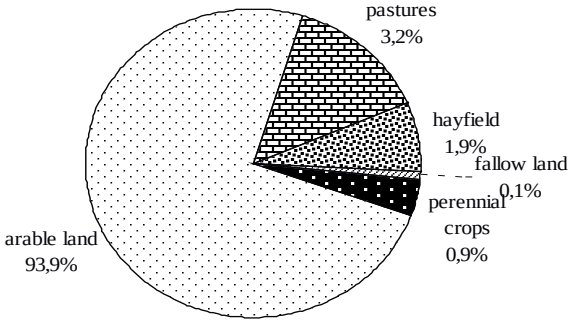

Fig. 2. Structure of agricultural land of individuals on 1 January 2016
Source: it is built according to the data [5, p. 64]

The area of agricultural lands of agroforming in 2016, as compared to 2000, decreased by 39,1 % and amounted to 20,746.9 thousand hectares, including land holdings of state enterprises – by 97,1 %, and non-state enterprises increased by 9,9 times.

Among the agricultural enterprises of Ukraine 4,5 % of the land belongs to state enterprises, respectively 95,5 % – to non-state enterprises (table 1).

Table 1

The structure of agricultural lands by categories of landowners and land users in Ukraine

Indexes	Years					2016 (+, -) from	
	2000	2010	2012	2014	2016	2000	2010
Agricultural enterprises	100	100	100	100	100	x	x
state	6,2	5,0	4,7	4,6	4,5	-1,7	-0,2
non-state	93,8	95,0	95,3	95,4	95,5	1,7	0,2
Individuals	100	100	100	100	100	x	x
Including private peahaut small-holdings and keeping of dwelling house and plots for farm structures	50,6	31,1	31,8	31,8	32,2	-18,4	0,4
commodity output	27,0	59,2	58,7	59,4	59,1	32,1	0,4
collective and individual gardens	2,1	1,2	1,2	1,2	1,2	-0,9	0,0
collective and individual kitchen gardens	3,5	1,2	1,2	1,1	1,1	-2,4	-0,1
hayfields and pastures	16,7	7,3	7,1	6,5	6,3	-10,4	-0,8

Source: calculated according to the data [5, p. 640]

At the same time the agricultural lands of citizens increased by 2.5 times in 2016 compared to 2000 and amounted to 15706,4 thousand hectares. In the structure of agricultural lands of citizens, the largest share belongs to commodity production – 59,1 %, which is by 32,1 % more than in 2000 and indicates significant structural changes in land use of citizens. At the same time, the share of land under private peasant farms and plots for the construction and maintenance of residential buildings increased by 5,2 %, the share of land that is hayfield decreased by 10,4 %, the share of collective and individual gardens – by 0,9 %, of collective and individual cities – by 2,4 % to 1,1 %.

Currently, the most active participants in the process of consolidation of agricultural land are medium-sized agricultural holdings with a land bank size of 20 to 40 thousand hectares. Large companies mainly focus on maintaining control over lands and improving the efficiency of their use. In 2016 there were about 2,9 million hectares of agricultural land in use of the largest agricultural holdings in Ukraine [7].

Against the background of growing agroholding, the number of private peasant farms has a steady tendency to decrease. In our opinion, in the following years this trend may increase in connection with the Government's intentions to introduce private peasant farms in the legal field in order to introduce taxation of the results of their activities. Despite the decrease in the number of peasant farms, the amount of

cultivated land increased due to land for commodity agricultural production (table 1).

Today almost 1,4 million hectares of dismantled land plots are not used. About 1 million people do not cultivate or rent land. As a result, land part (shares) with a total area of 4,8 million hectares or about 12 % of the total area of agricultural land are not used.

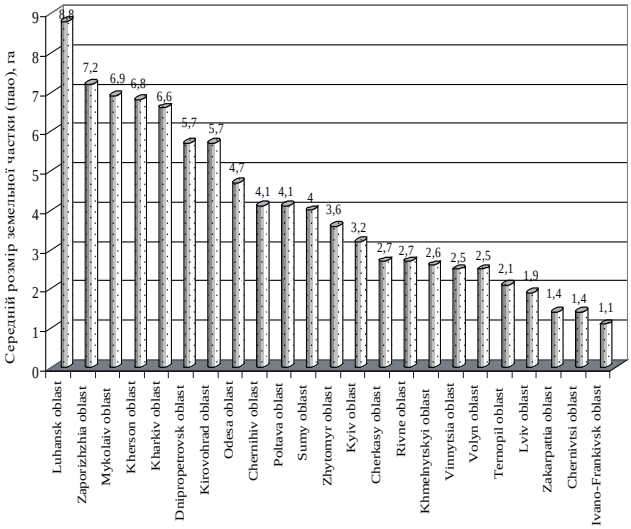

Fig. 3. The average size of a land part (share) in terms of regions
Source: it is built according to [6]

1,2 million citizens joined land plots and land shares with an area of 4,7 million hectares to private farms without a legal entity or 17,3 % of decomposed land. Self-management on land has shown a desire for 1,2 million hectares of land shares owners. 17,1 million hectares, accounting for more than 62 % of the decomposed lands, handed over for rent. The largest proportion of decomposed land not involved in economic cultivation or used without proper documentation is in Zhytomyr, Lviv, Chernihiv, Rivne and Kyiv oblasts [6].

The average land part (share) in Ukraine is 4 hectares.

Table 2

The structure of crop area of agricultural crops in Ukraine

Indexes	Sown area							Absolute deviation of structure (+,-), %
	1990		2000	2005	2010	2016		
	thousand hectares	%	thousand hectares	thousand hectares thousand hectares	thousand hectares	thousand hectares	%	
Cereals and legumes	14583	45,0	13646	15005	15090	14401	53,3	8,3
including wheat	7577	23,4	5619	6665	6451	6218	23,0	-0,4
barley	2729	8,4	3985	4500	4505	2867	10,6	2,2
corn for grain	1234	3,8	1364	1711	2709	4286	15,9	12,1
Technical cultures	3751	11,6	4187	5260	7296	8852	32,8	21,2
including sugar beet (factory)	1607	5,0	856	652	501	292	1,1	-3,9
sunflower	1636	5,0	2943	3743	4572	6073	22,5	17,4
soybeans	93	0,3	65	438	1076	1869	6,9	6,6
colza	90	0,3	214	207	907	455	1,7	1,4
Potatoes and vegetable-melon cultures	2073	6,4	2277	2041	1967	1841	6,8	0,4
Fodder crops	11999	37,0	7063	3738	2599	1932	7,1	-29,9
Sown area – total	32406	100	27173	26044	26952	27026	100,0	x

Source: calculated according to [4, p. 68; 5, p. 89]

On the basis of private property, as of 1.11.2016, 47697 agroformations of market type were created in Ukraine, where 8700 units are business associations (18,2 %), private enterprises – 3752 units (7,9 %), production cooperatives – 738 units (1,5 %), farms – 33682 units (70,6 %), state enterprises – 222 units (0,5 %), enterprises of other forms of management – 603 units (1,3 %). In 2016, compared to 2002, the share of private enterprises and farms increased [5, p. 171].

Reducing the natural fertility of soils can not be offset by increasing the volume

of mineral fertilizers. On the contrary, today there is an open destructiveness of farming in the agrarian sector. In the context of the reduction of the livestock sector, in particular the reduction of cattle population both in households and in agricultural enterprises, the volume of manure putting has decreased significantly, as well as the practice of straw burning after harvesting, leads to lossless land energy losses.

Particularly threatening in this context is the problem of deteriorating quality of agricultural land. On the basis of agro-chemical data, a decrease of humus content in soils (0,5–0,6 t/ha annually), which increases soil mineralization, leads to a decrease in the fertility of the land. As a result, the annual lack of agricultural products is about 3 million tons of conditional grain. Over the past 20 years, the humus content has decreased by 0,22 %, which is estimated as 453,4 billion UAH in terms of the state [30].

In addition, the decline in the fertility of agricultural land is due to the imperfection of the structure of crops, which has undergone significant changes over the past 25 years in order to increase the share of crops that are in high demand on the market. Thus, for the period from 1990 to 2016 the share of technical crops in the structure of sown area has increased by 21,2 percentage points (table 2).

In particular, over the analyzed period, the sown areas of sunflower increased by 3,7 times, soybeans – by 20,1 times, colza – by 5,1 times. In the group of technical crops only the growth of sugar beets was reduced by 81.8 %. Grain and legume seeds after a slight decline in the late 90's today actually reached the level of 1990. At the same time among the grain crops, the greatest increase occurred in the cultivation of corn for grain, whose area has increased by 3,5 times. The reduction of sown areas is observed only under potatoes, vegetable and melon cultures and fodder crops.

The growth of the share of intensive crops (corn for grain, sunflower, colza) in the structure of the crop area violates the principles of balanced land use. This is due to the fact that the management of agrarian marketing processes is oriented only on the profitability criterion and only on the interests of the private owner in agriculture.

There have been significant changes in the structure of gross agricultural production. Thus, the share of agricultural enterprises in the structure of gross production decreased from 70,4 % in 1990 to 54,0 % in 2016, which indicates an increase in the role of households in agricultural production (Fig. 4).

This is due including to the results of the land reform, which gave peasants access to the possession and disposal of their own land plots, as well as by leasing land for small-scale production as a source of income.

The efficiency of land use in agriculture is still low. In particular, as of 2016, more than 40 % of the land was used by agricultural producers at a fairly low level (the coefficient of land utilization is from 0,35 to 0,5, which corresponds to the yield of grain and legume from 22 to 40 hundredweight per hectare). The lowest level and efficiency of land use is observed in enterprises of the state form of management. In particular, the level of profitability of agricultural production in state enterprises

in 2015 was only 6.4 %, while the profitability of non-state enterprises was 30,5 %.

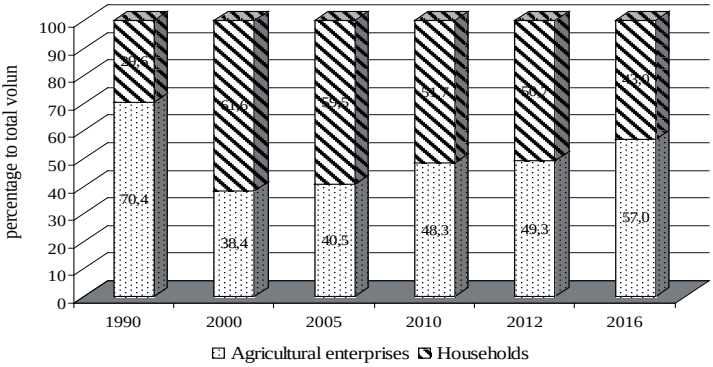

Fig. 4. Structure of production of gross agricultural products in Ukraine, 1990–2016, %
Source: calculated according to data [4, p. 44; 5, p. 460]

Table 3

Dynamics of agricultural crops in Ukraine, c/ha

Agricultural crops	Year						2016 in % to	
	1990	2000	2005	2010	2012	2016	1990	2000
Cereals and legumes	35,1	19,4	26,0	26,9	31,2	46,1	131,3	171,4
including wheat	40,2	19,8	28,5	26,8	28,0	42,1	104,7	157,1
barley	33,8	18,6	20,6	19,7	21,1	33,0	97,6	167,5
corn for grain	38,7	30,1	43,2	45,1	47,9	66,0	170,5	146,3
sugar beet (factory)	275,7	176,7	248,2	279,5	410,8	481,5	174,6	172,3
sunflower	15,8	12,2	12,8	15,0	16,5	22,4	141,8	149,3
soybeans	11,3	10,6	14,5	16,2	17,1	23,0	203,5	142,0
winter colza	15,0	10,3	17,0	17,5	22,0	26,5	176,7	151,4
Potato	116,8	121,6	128,4	132,5	161,0	165,8	142,0	125,1
Vegetable crops	149,0	112,3	157,1	173,6	199,2	210,5	141,3	121,3

Source: calculated by the author according to [4, p.74; 5, p.102]

According to the data of the table 3 the yield of crops has increased, which is due to the improvement of breeding work, an increase in fertilization rates and intensification of technologies, but its level is considerably lagging behind the average European. In particular, the yield of grain and leguminous crops in Ukraine in 2016, as compared to 1990, increased by 31,3 % and equals 46,1 hundredweight/

ha due to the increase in the grain yield of corn. The yield of sugar beets increased by 74,6 %, sunflower seeds – by 41,3 %, soybeans – 2 times, winter colza – by 76,7 %.

The conducted research shows that during 2012–2016 agricultural enterprises in the main commodity crops we also observed the tendency of increase of productivity level. In particular, the highest average annual rate of yield growth is recorded in such crops as barley – 11,8 %, wheat – 10,7 %, corn for grain – 8,3 %, sunflower – 7,9 %, and soybeans – 7,7 %. At the same time, low crop rates are characterized by such crops as winter colza and sugar beet.

Thus, land use in Ukraine is characterized by the following features:

1) high level of mastering of the territory (more than 92 %);

2) increase the area of agricultural land by the use of citizens for the purpose of commodity production, which led to structural changes in gross agricultural output;

3) under-utilization of a significant share (about 10 %) of the total area of land as a result of land degradation, since successors do not always want to cultivate the land independently or rent it;

4) private enterprises and farms became the main among different forms of farming on the land;

5) consolidation of lands by agroholdings;

6) the deterioration of the quality of arable land due to the rapid expansion of intensive crops, which can not be compensated by the increasing application of mineral fertilizers;

7) low efficiency of the use of land resources in agriculture due to depreciation of material and technical base, violation of technological processes, reduction of livestock sector, low level of use of information technologies and lack of financial resources.

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RESOURCE-SAVING IS THE BASIS OF SUSTAINABLE DEVELOPMENT OF AGRICULTURAL ECONOMY

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The ensuring of domestic agricultural enterprises competitiveness in the dynamic market environment conditions requires the development and implementation of their resource-saving development strategy. Such strategy should provide for growth of production and supply capacity of economic entities at the expense of the search for and realization of reserves of economy of production resources per unit of production [5, p. 134].

Currently, many types of domestic products cannot withstand competition in foreign and sometimes in domestic markets due to the high level of unit costs of the used production resources. Unit costs of energy are particularly significant, in consequence of which the energy intensity of a large part of domestic products is several times higher than this index for the similar products produced in the developed countries of the world.

For a long time, intensive technologies have been one of the main directions of increasing the crop production efficiency. The peculiarity of intensive technologies was that in any branch of agriculture, as a rule, an increase in the cost per hectare or head of cattle was required. At the same time, the disadvantage of this decision was that not all farms paid off additional investments by output of products at the same time reducing its cost [1].

Unlike intensive technologies that require significant resources, resource-saving technologies should be based on the minimum necessary use of chemicals while using as fertilizers by-products, microbiological preparations, growth promoters.

Modern resource-saving technologies allow in the Forest-Steppe of Ukraine to obtain a stable yield of winter wheat at the level of 45-50 centners per hectar, spring wheat – 35-40 centners per hectar, rye - 40-45 centners per hectar, triticale – 45-50 centners per hectar, barley and oats – 35-40 centners per hectar. This achieves high grain quality. According to the Institute of agriculture of UAAS the volume of introduction of these technologies in Ukraine can be 2 million hectares with achievement of annual economic effect in 20 million UAH [6].

The lack of funds from agricultural producers hinders the widespread use of intensive technologies, therefore, in the current conditions, the use of resource-saving technologies aimed at reducing the material consumption of products and production processes, as well as reducing direct labor costs becomes particularly important.

Therefore, resource-saving should be considered from the standpoint of expanded reproduction, the resources movement in the production process, as a constantly repeating process. Firstly, the essence of resource-saving is to conserve the socially necessary labor and it shows itself in the reducing production costs, increasing profit margins, reducing anthropogenic impact on the environment; secondly, this process is determined by such specific forms of manifestation as material-saving, land-saving, labor-saving, energy-saving etc.; thirdly, resource-saving should be seen as a constantly repeating process achieved through innovations, along with more efficient use of traditional production factors. Its result is the release and saving of resources, reducing production costs, increasing profits, achieving positive economic effects [3].

Innovative technologies are economic models using elements of biological farming and optimization of production processes achieve a high degree of control, predictability and efficiency of crop production. In contrast to traditional technologies, innovative technologies of crop production are based on the use of energy-saving and resource-saving systems of agriculture, with such elements as: compliance with biological and zonal features of growing crops, taking into account soil and climatic conditions; refusal to perform ploughing; minimization of the main tillage in the direction of reducing the number of agrotechnical operations and combining several operations in one technological process, which reduces the processing time of cultivated areas by 70-80 % and provides production costs savings on average five times, including the cost of fertilizers by 30-40 %, fuel-oil materials – by 60-70 %, the purchase of agricultural machinery – by 80-90 % [3].

The necessary condition for such technologies is a high culture of farming, crop rotation, availability of machinery and qualified personnel. The main directions of the introduction of resource-saving technology in agriculture are:

- application of the most rational schemes of plant placement, allowing more efficient use of land, machinery, working capital;
- use of high-yielding zoned varieties of crops; use of the most productive breeds of animals;

- optimization of plants nutritive regime by depositing the required amount of fertilizers; use of balanced feed rations at the lowest funds cost;

- reduction of the number of agricultural practices based on their combination in combined aggregates;

- rational use of material, labor and financial resources; normalization of costs per hectare area, cattle head.

In the complex of energy-saving technologies, pride of place goes to the method of mineral fertilizers application. Reducing the resources cost provides local application of fertilizers, for example, by seeders during sowing and maintaining growth during the growing season. Saving of energy resources achieves due to a clear organization of sowing [1].

Our calculations show that the transition of a number of crop production sectors to the principles of resource-saving can reduce the cost of seeds on average by 50-60 %, fertilizers – by 5-10 %, electricity – by 20-40 %, oil – by 40-60 % [4, p. 48] (table 1).

Table 1

Costs of agricultural production in the context of different types of technologies, UAH / t

Types of costs	Winter wheat			Sunflower		
	Conventional technology	Resource-saving technology	Divergence, %	Conventional technology	Resource-saving technology	Divergence, %
Seed, centners	10	5,3	53,3	1,0	0,4	40
Fertilizers, centners of active substance	6,25	5,6	88,9	18,8	17,5	93,3
Waste Chemicals				-	-	-
- solid, kg	6,25	3,6	56,9	0,4	0,2	40
- liquid, l	2	6,4	320	-	17,5	-
Electricity, kW per hour	20,4	12,6	61,7	40,4	32,5	80,5
Petroleum products, centners	2,4	1,5	61,8	7,1	2,9	41,2

The elimination of seeds overspending by improving the quality of seed material, more careful adjustment of seeders allows to reduce the cost of grain seeds on average by

2.5-20.1 %, sunflower seeds - by 1.7-17.3 % [1].

In economic management market conditions, the product «seeds» acts as a specific knowledge-intensive and innovative product of agricultural production, as

it carries the potential for production efficiency growth. Scientists have estimated, and the world practice proved that yields and gross harvest of grain can be increased due to the quality of seed to 25-30 % [2, p. 16].

The main task of seed production in the current conditions of grain production development, first of all, should be providing producers with high-quality seed material in appropriate volumes, without overspending, without which the process of agricultural production recreation is impossible.

We will analyze the actual level of costs for seeds and planting material at agricultural enterprise and compare it with scientifically based standards (table. 2).

Table 2

Costs of seeds and planting material at agricultural enterprise

Indicators	Wheat	Barley	Oat	Corn	Sunflower	Soybeans
Seed costs, kg	32700	142700	11600	19000	4500	89000
Crop acres, ha	200	395	20	300	554	560
Actual seed costs, kg/ha	163,5	361,3	580,0	63,3	8,1	158,9
Normative level of seed costs, kg/ha	160-250	166-220	150-220	10-25	6-10	80-130

Table 2 data shows, that in the context of the studied crops, only winter wheat and sunflower seeds conform to the actual scientifically based standards of the cost of sowing material by the seeds weight. The other cash crops of enterprise considerably exceed the standard seeding rate.

Our research has shown that even within the conventional technology, there are significant reserves for increasing the enterprises profit by optimizing the specific costs of resources. To achieve the above results, while ensuring high production efficiency, without seed quality is almost impossible. Therefore, it is advisable to assess the impact of seed costs on the economic efficiency of agricultural production (table 3).

As can be seen from the table, in a typical agricultural enterprise, the actual seeding rates exceed the scientifically based standards for barley - by 64,2 %, oats – by 1,6 times, corn – by 1,5 times, soybeans – by 22,3 %.

The introduction of resource-saving technologies will lead to qualitative changes in the economic activity of enterprises, will help to improve their economic efficiency, reduce dependence on competitors. This technology is based on the integrated use of the latest science and technology achievements, provide all the conditions for the output of products. In crop production, this applies to the selection of optimal predecessors for this crop, the definition of soil preparation methods; the use of the most promising varieties and high-quality seeds; the use of necessary doses of fertilizers, herbicides; implementation of all agricultural operations with

the help of modern technology based on rational forms of labor organization.

Resource-saving technologies require a clear sequence and organization of agricultural activities, taking into account the characteristics of crops, as well as a certain set of agricultural machines and tools, advanced organization and remuneration of labor. Violation of the principles of proportionality, comparability, rhythmicity, threading and others leads to decreasing the effectiveness of resource-saving technologies.

Table 3

Reserves of cost-saving for seeds of agricultural crops

Indicators	Barley	Oat	Corn	Soybeans
Actual seed costs, kg/ha	361,3	580,0	63,3	158,9
Overspending seeds in comparison with the normative level, kg/ha	141,3	360,0	38,3	28,9
% for actual seeding rate, %	64,2	163,6	153,3	22,3
Costs of seeds and planting material, thousand UAH	97,0	8,0	191,0	909,0
Costs for 1 kg of seeds, UAH	0,68	0,69	10,05	10,21
The amount of possible cost-saving due to removing of seed overspending:				
- in terms of 1 ha, UAH	96,03	248,28	385,35	295,46
- in terms to the whole square, thousand UAH	37,93	4,97	115,61	165,46
Total amount of possible cost-saving, thousand UAH	323,96			

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THE MARKETING SYSTEM OF ENTERPRISES WHICH OPERATE IN THE SPHERE OF GRAIN STORAGE AND GRAIN PROCESSING

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The contemporary understanding of the essence of marketing is related to the following aspects: on the one hand, it is a thorough, comprehensive study of the market demand, consumer tastes and needs with the aim of further product orientation to meet these needs; on the other hand, it is an active impact on the market and the existing demand, as well as on the formation of customers' needs and consumer preferences. The generalization of the approaches to the definition of the concept "agromarketing" and "marketing system" has allowed to substantiate the definition of agromarketing in the grain product subcomplex of the agroindustrial complex, which presupposes the organization and management of production and marketing activities of agricultural enterprises, cereal receiving points and agroprocessing enterprises on the basis of a comprehensive study of the grain market and its products for the purpose of profit-making through the comprehensive satisfaction of consumer demand. From the point of view of the institutional approach, the core of the marketing system in the grain product subcomplex of the agroindustrial complex is formed by the main subjects of marketing activities, which are as follows: grain producers, storage enterprises, primary and secondary grain processing. During their activities, they come into contact with other organizations (suppliers, marketing intermediaries, selected contact groups, wholesalers and retailers), which helps to promote their products to end-users. Consequently, a bilateral relationship takes place in this case. In addition, the functioning of this system is under the influence of macro environment factors unilaterally.

During this study, we have found that in the present day context a particular attention should be given to such important issues as the organization and functioning of marketing services, the development of marketing infrastructure and information marketing systems, as well as the development of marketing strategies in the grain product subcomplex of the agroindustrial complex of Ukraine and its regions. Today, various studies are conducted mainly on the formation of a price mechanism, the competitiveness of the grain product subcomplex of the agroindustrial complex

of the country, and the creation of an organizational and economic mechanism for its further functioning [1-7].

The grain product subcomplex is considered to be the one of the most important ones in the agroindustrial complex of Ukraine, because it fulfills two significant functions: the production of food grains for baking bread and bakery products, confectionery and pasta, and the production of feed grain and forage for livestock.

In contrast to other subcomplexes, this one covers not only preliminary, but also primary and secondary grain processing. As a whole, it is characterized by high mobility and the best opportunities for long-term storage of most types of products and their transportation over significant distances. In addition, it includes various industries and activities that, in conjunction with the above-mentioned characteristics, determine its marketing system components. Therefore, the organizational construction of the grain product subcomplex of the agroindustrial complex of Ukraine, in our opinion, can be represented in the following form (See Figure 1).

This scheme allows identifying the subjects of the marketing system of the grain product subcomplex of the agroindustrial complex of the country and the available marketing flows, which are as follows:

1) grain producers – elevator industry – transportation system organizations – grain traders – external market;

2) grain producers – elevator industry – primary processing of grain crops – wholesale and retail trade – final customers of the flour, cereals and mixed fodders production (the domestic and external markets);

3) grain producers – elevator industry – primary grain processing – secondary grain processing – wholesale and retail trade – final consumers of bakery products, confectionery and pasta (the domestic and external markets).

In our opinion, the essence of agromarketing in the grain product subcomplex of the agroindustrial complex of Ukraine is to organize and to manage the production and marketing activities of agricultural, grain-receiving and processing enterprises on the basis of a comprehensive study of the grain market and its processing products in order to generate profit for the comprehensive satisfaction of consumers' demand.

From this it follows that the subjects of agromarketing of the subcomplex of the agroindustrial complex of Ukraine are mainly agricultural enterprises of various forms of ownership that are engaged in the production of grain crops; grain receiving organizations; enterprises of primary and secondary processing of grain crops; organization of agrotechnical services; wholesale and retail trade intermediaries; suppliers of raw materials and technical means; advisory centers; consumers of products of grain processing enterprises.

Nowadays particular importance is acquired by legal factors of the macro environment of marketing. These factors allow not only to determine the status of the subjects of marketing activities, their rights and responsibilities, but also the possibility of using marketing tools, as well as to regulate the relationship between

agricultural producers and grain storage and marketing enterprises with marketing intermediaries, suppliers, contact audiences and competitors.

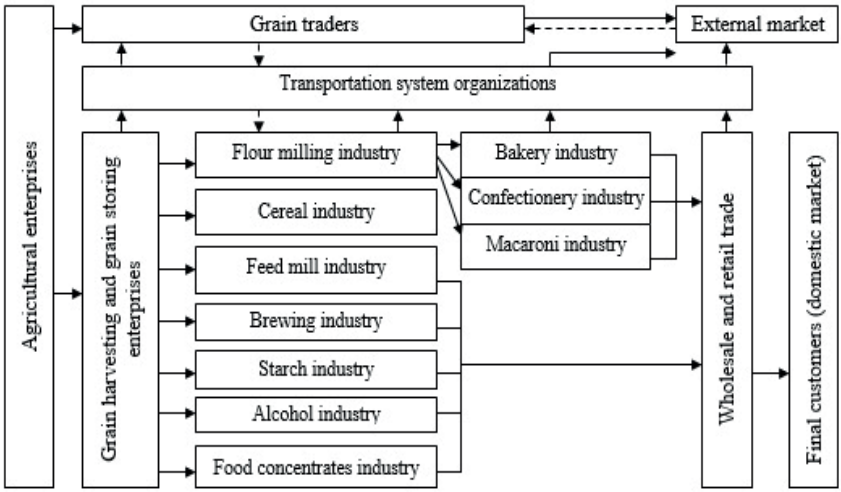

Fig. 1. Commodity flows in the grain subcomplex of the agroindustrial complex of Ukraine

Subjects of the agro-marketing system of grain products of the subcomplex of the agro-industrial complex should base their activities on certain approaches to marketing activities, that is, marketing concepts. The concept of marketing is a set of principles that form the basis of marketing, which is realized in various industries of production and economic activity. There are different approaches to the definition of the essence of the given concept [1-7]. A specific enterprise develops a concrete concept reflecting the desire to follow the main trends of economic development. And it is aimed not only at the enterprise's behavior on the market, but also on its internal structure as a whole.

In this case, the concept of marketing is considered to be a concept of enterprise management. Strengthening the role of marketing approaches to commercial activities today can be explained by the following reasons.

First of all, the modern market in many sectors of the economy, in particular the food industry, is represented by a significant level of competition. In order to achieve market advantages, an enterprise must better meet the needs of consumers than competitors do. In our opinion, this leads to the use of the concept of classical marketing in practical activity of enterprises.

Secondly, the current stage of the development of the productive forces is characterized by the complexity of production and technological processes, the

increase in the level of quality of goods that are produced. Therefore, in conditions of the saturation of the market with high-quality goods, enterprises are trying to improve the quality of services and increase the volume of services that they provide to customers. This leads to the growth of the role of service policy as an integral part of the marketing.

Thirdly, today consumers are inclined to buy goods of specific enterprises (branded goods). And, as research shows, they are ready to pay 10-15 % more for goods of enterprises that managed to create a unique corporate image. This leads to an increase in the role of marketing as a tool for creating consumer benefits.

The modern concept of marketing determines the further activity of the enterprise on the basis of information about consumer demand and its possible changes in the next periods. The enterprise must carry out its activities by focusing not on the possibility of production, but on the requests of consumers. Based on the above principles of marketing, modern enterprises have the opportunity to choose the goals of their future activities.

From the point of view of social importance, we consider it expedient to single out four alternative marketing goals: the attainment of the maximum possible high consumption, which contributes to the maximum growth of production, employment of the population; minimizing customer satisfaction; providing a wide range of goods and services or maximizing the choice of the final consumers; improvement of the quality of life.

Obviously, it is not possible to achieve these goals in an equal measure. Different goals can dominate the society at different stages of its development. In the past decade, in many developed countries, special attention from the state and various public organizations has been given to the need to address the problems of improving the quality of life of the population.

The solution of the set goals should be carried out on the basis of accomplishing of various tasks. The most important task of marketing is to ensure the maximum possible sustainability in the activities of the enterprise, its planned development and achievement of strategic goals.

In the process of marketing activities of the enterprise, some other specific tasks are also being solved, such as:

- providing timely and reliable information about the market, products, consumers and competitors;
- creation of goods that maximally meet the capabilities of the enterprise;
- ensuring impact on the consumer demand, the relevant market as a whole and the main competitors;
- planning and coordination of production, marketing and financial activities of the enterprise;
- marketing communications;
- analysis of marketing activities and monitoring of its implementation.

Based on the theory of marketing, organization and management, we can

argue that the function of marketing is a set of stable, isolated and specific areas of marketing activity, united by common actions in the preparation, adoption and implementation of decisions [9, 11]. During the research process, we identified four approaches to the marketing functions.

The first one is an analytical one, which is related to the study of a specific market, as well as the study of consumers, goods, commodity structure, internal environment of enterprise, and a complex research of competitors and intermediary companies as the main market participants.

The second production approach is concerned with organization of production, material and technical support, development and implementation of modern technologies, quality management of services, management of competitiveness of commodity products and services.

The third approach, which is the distribution and marketing one, is associated to the organization of the system of commodity circulation, the organization of the system for the formation of demand and sales of products, the organization of transportation and storage of products, and the implementation of targeted commodity and pricing policies.

The fourth approach is based on management and control functions only, which include the organization of operational and strategic planning, information support of marketing activities and marketing control.

In our opinion, the second group of functions (production) does not apply to marketing activities at all.

From the point of view of the American approach [8, 10], the marketing functions are presented in three groups, and they differ substantially from the domestic approach in the following way:

1) exchange functions (purchase, which provides for the search for sources of supply of products, as well as direct purchase to create stocks of raw materials; sale, which is directly related to the concentration of various activities, such as: retail, presentation of goods in storefronts, retail shelving, shop shelving, store shelving; advertising and other means of promoting products, selecting types of packaging components, packaging and channels of distribution, a good place to sell products);

2) physical functions (storage, transportation, processing activities);

3) assistance functions (standardization is the establishment and preservation of homogeneous parameters that are related to the quality and quantity of products; financing is the use of money for the implementation of various financial activities in marketing; risk is related to the assumption of risk; market intelligence (collection of market information) is the work to collect, interpret and disseminate various data necessary for the smooth implementation of the marketing process.

Thus, for agricultural enterprises, the marketing system will consist of three subsystems or the functional support of marketing activities, which is the link for the research of the market environment and marketing activities of the enterprise. In the marketing system of grain storage and processing enterprises, a fourth subsystem

is added to the three analogous marketing subsystems of the agrarian enterprises, through which the enterprise's activities are managed. This subsystem is primary one because of its ability to influence the functional maintenance of the marketing activities of the modern enterprise.

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FUNDAMENTALS OF THE IMPROVEMENT OF THE ENTERPISE SALES ACTIVITY IN THE CONTEXT OF MODERN ECONOMIC CONDITIONS

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Modern business conditions dictate their own rules to the business entities. To meet the periodically changing needs of the consumers, enterprises are forced to constantly improve the product quality and to optimize the sales mechanism for these products. In this connection, the effective organization of the sales system is of paramount importance. Consequently, the qualitatively organized control over the functioning of sales determines the vectors of the socio-economic activities of the enterprise.

In the complex process of creation, production and delivery of products to the final consumer, the sale of goods, as the final stage, plays a decisive role in the commercial activity of the enterprise. These indicators indicate the recognition or non recognition by the consumers of all those efforts that have been spent on the creation of the final product. Modern marketers note that it is expedient to solve the problem of organizing the marketing of products at the stage of formation of the strategic aspects of the enterprise policy management.

For this, taking into account the specific functioning of specific markets for goods and services, the most effective systems, channels and methodology for marketing products should be chosen. In fact, this means that the production process at the enterprise must initially be guided by the optimal methods and forms of marketing the finished product.

Sales management, therefore, is the main component of business activity, since the main goal of solving sales issues is to meet the actual needs of customers, to increase production volumes, to highlight marketing advantages, and to increase the net profit in the long-term period. All these factors together contribute to the successful operation of the enterprise in a particular business area.

Optimization of sales processes and the correctly chosen vector of sales policy implementation at the enterprise allows not only to increase its market share, but also to obtain a number of competitive advantages (for example, a reduction of a standard cost for sales processes at the enterprise). Under the marketing policy of an enterprise, one should understand the selection of the optimal forms and marketing methods necessary for the effective organization of the procedure for the sale of goods or services.

The current instability of the economic environment, the constant growth of risks and the political uncertainty of Ukraine have led to an aggravation of the problem of the effective organization of the enterprises' sales activities. Accordingly,

this problem was reflected in a number of scientific studies devoted to the search for new approaches to planning sales activities. So, recently a lot of interesting scientific research appeared, the authors of which made an attempt to investigate the theoretical and methodological aspects of this issue. In particular, in this context, it is worth mentioning the works of the following authors: Evans J., Berman B., Drucker P., Zalmanova M., Kotler P., Hershgen H., O'Shaughnessy J., Sorensen A., Kostoglodov D., Kharisova L., Podinovskyi V., Stigler G. [1-12] and many others. However, it should be noted that the main aspects of this issue are not described in many scientific papers. This fact partly determined the relevance of this scientific study.

If we consider the functional potential of this phenomenon, it is worth noting that there are several important functions assigned to the sales activity of an enterprise:

- to provide information monitoring for the definition of current needs of consumers at the local / regional / national level;
- to formulate, in accordance with the expectations of customers, a batch of products of certain volumes;
- to organize the processes of packaging and storage of products in warehouse premises (if necessary);
- to search for new channels of product sales periodically;
- to provide logistics and product transfer;
- to control intermediaries so that they do not go beyond the price limits set by the enterprise;
- to keep records of current stocks of products (goods) stored directly at the industrial enterprise level or its affiliates;
- to fix and summarize expectations of the final consumers and / or intermediate consumers regarding the quality of products (goods) and their value;
- to develop a methodological complex for improving the activity of an industrial enterprise in order to meet the needs of new consumers.

It is worth noting that the whole complex of coherently coupled ideas is influenced by the process of organization and sales of the industrial enterprise. First of all, here we are talking about such factors as: the specificity and quality of products (goods) or services offered to the consumer; the level of the production and technical base development; the price policy chosen by the enterprise; the main communication factors; a circle of potential clients; the level of qualification of employees of the enterprise; the use of innovative technologies in the process of production; the income level of potential consumers; representation of similar services or goods in the market.

In our opinion, the following measures will be able to significantly improve the enterprise sales activity in the long run:

1. Reforming of the existing system of sales planning of the enterprise.

At many domestic industrial enterprises, the regulated rate of sales does not match the chosen strategy of the development. In this case, we consider it expedient

to determine more precisely the strategy of enterprise development on the basis of the corresponding research of a certain segment of the market and making forecasts of possible volumes of production.

2. Ensuring the provision of high quality personnel support.

To optimize sales, it is necessary to reduce the costs foreseen for the financing of the structural units of the enterprise. The most suitable option for the development of such a scenario is the merging of separate units, the main lines of work of which are closely related to each other. In this case, particular attention should be given to the development of standards for the effective work of sales managers. First of all, here it is a question of their training to increase the level of competence, which can have various forms of implementation (master classes, trainings, periodic personnel qualification, etc.).

3. Optimization of the organization of sales activities.

In modern conditions, the enterprise should apply various methods of promoting products through Internet technologies. To do this, it is recommended to develop a special Web site, which will present the entire range of products offered, as well as the brief information about these products, which can be ordered online.

4. Continual improvement of product policy.

Despite the fact that this parameter was named only in the fourth position on this list, it should be considered as the first priority. It is common knowledge that the main goal of each enterprise is related to the maximum satisfaction of the needs of a potential consumer who needs products of such quality that will not damage his life and health. From this follows the fact that the products produced a priori must be high-quality, and therefore environmentally friendly. For example, food products should be produced without the use of GMOs or synthetic flavor enhancers, as well as the furniture should be produced exclusively from the natural wood without binders and chemical additions.

4. Local dependence of the sales activity of the enterprise.

It is clear that for industrial enterprises it is more expedient to serve the city in which its main productive capacities are concentrated. If the enterprise managed to meet the needs of consumers of this territory, its further marketing activities can be carried out at the level of the region. Consequently, the enterprise can reduce its current costs, and choose the right price policy. As a result, close competitors of the enterprise will be forced to leave this territory at all.

5. A price policy correlation.

In the process of pricing policy formation, an enterprise must take into account the needs and opportunities of consumers of different social strata. It is recommended to establish a separate product price for the consumers with different income level, but in any case the finished goods must be of high quality, regardless of the status of the final consumer. Considering the fact that most of the population of Ukraine belongs to the lowest class of the social stratum (approximately 70% of the country's inhabitants), it is extremely important to find concrete ways of reducing the unit

cost of production. As an example, we can cite the use of more budgetary packaging or advertising. This will allow the enterprise to receive a positive public evaluation and in the long-term period of time this business entity will be able to achieve the effective sales activity.

It is known that a qualitatively organized advertising, organization as a complex of marketing communications, plays an important role in effective sales management. Its mission is to inform and convince customers of the quality of goods and services that are offered by a particular enterprise.

Depending on the final result, experts can identify the economic and psychological effectiveness of advertising. Psychological influence of advertising at the subconscious level of a person is the most effective one, since this kind of advertising can convince potential consumers of the need to purchase a certain product or service. On the contrary, the economic effectiveness of advertising is related to its ability to psychologically influence an individual or a group of people. In order to draw a conclusion about the effectiveness of advertising, it is necessary to determine, first of all, its influence on the volume of goods turnover of the enterprise. As practice shows, it is possible to accurately calculate the economic effectiveness of advertising only if it directly influenced the increase in the sale of goods immediately after its appearance. First of all, it concerns the advertising of goods for daily consumption. For comparison, in the case of purchasing an expensive product with a long service life, the consumer needs to think more carefully about the need to purchase it. Therefore, in this case, the advertising effect has a prolonged effect. This mechanism looks something like this: at first the individual learns from advertising about a particular product, and then he or she studies its main characteristics in more detail and compares them with other similar products, and finally makes a decision about the need to purchase the product as least once.

Thus, it is difficult to accurately calculate the effectiveness of advertising as a marketing tool in the context of the enterprise sales activities, since it can have a delayed effect of the action. In addition, some factors such as changing the purchasing power of the population and expanding distribution channels, which can significantly affect the pace of trade liberalization, should also be taken into account.

It is worth noting that the image advertising usually advertises not an individual product or service, but an enterprise as a whole, so it does not set a goal to get profit immediately. However, this type of advertising affects the activation of the sale of goods. Advertising, therefore, plays an important role in promoting sales, because it significantly expands the sales markets, accelerates the flow of funds and, finally, positively affects the production processes of the enterprise.

Coming to the conclusion, it should be mentioned that marketing activities are considered to be an integral part of an effective activity of any industrial enterprise. Therefore, the methods of its implementation determine the success of the enterprise's activity and determine the future of products that can reach the

final customer or having passed all the stages of production process, remain in the warehouse for months. Proceeding from this, each enterprise must responsibly approach the issue of the formation of a sales department, the rational activity of which can ensure a sustainable profit. An efficiently organized sales system contributes to the profitability of an industrial enterprise and determines its further sustainable social and economic development, as well as the development of a certain industry as a whole.

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ELECTRONIC DOCUMENTATION IN THE SYSTEM OF ADMINISTRATIVE ACCOUNTING OF AGRARIAN ENTERPRISES

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Automated accounting of production costs, as a key area of activity of agricultural enterprises, covers a number of labor-intensive operations, in particular: the grouping of costs according to the chosen method of cost accounting; determination of the planned and actual cost of products (works, services); evaluation of work in progress; the adjustment of the planned cost price to the actual level; formation of correspondence of accounts with its display in the registers of synthetic and analytical accounting; compilation of statistical and financial reporting. The specificity of the automation of the accounting of the production process is that the main information array is data obtained from other accounting sites [7].

In the conditions of automated management of an economic entity and the production process, in particular, electronic document management is related to the formation of an information database of electronic documents for use by its managerial apparatus in the process of realizing its functions.

A significant contribution to the development of theoretical aspects of the essence of electronic documents was made by such scientists as V.S. Tsymbalyuk, V.M. Brizhko, N.Ya. Shvets, I.V. Klimenko, I.M. Nazarenko,

R.A. Kalyuzhnyi and others. Various theoretical, methodical and applied aspects of application of information technologies in the accounting process found their reflection in the scientific works of F.F. Yefimova, M.S. Pushkar, V.Ya. Plaksiienko, S.V. Ivakhnenko, V.D. Shkvir and many other local and foreign scientists.

The problem of organizational and legal support of relations in the sphere of electronic document circulation was considered by such scientists as M.M. Dutov, A.A. Litovchenko, S.A. Pirog, V.V. Nadolskaya, S.I. Semiletova, I.M. Sopilko, I.A. Trubin, A.A. Shelepina and others. However, the theoretical and methodological approaches to electronic documentation in the system of management accounting, taking into account the development tendencies and peculiarities of agricultural

production, still remain insufficiently studied. The specified problems have caused a choice of a theme of our research, as well as the main tasks, structure and directions of its further investigation.

Specifically, the latest PhD theses are good material helping to have a better understanding of research status in the electronic documentation area:

- A.V. Yanchev, in his thesis entitled "Organizational and methodological provisions of electronic documentation in the accounting system" (2015), determined the methodological foundations of accounting as an information subsystem for managing a virtual business education, the basis for the existence of which is a clear consolidation of fixing of economic facts with unified forms of electronic documents and the use of modern information and communication technologies. In addition, the author proposed a conceptual model for the development of accounting, which is based on the technologies of global document circulation. The subject of the above-mentioned model is the environment, while the objects are the population, business, the state and the information society to ensure the development and protection of the domestic information sphere. Scientific recommendations on the electronic documentation of the processes of material support of economic activity, settlement operations with the use of information and communication technologies, electronic labor accounting and payment, electronic document management in the taxation system are improved by author [9].

A.Yu. Kalamayko in his thesis on the "Electronic means of proving in the civil process" (2016) has developed the concept of electronic means of evidence as prescribed by law for the procedural form of bringing carriers of written and audio-visual information in electronic form [6].

The PhD thesis of M.V. Gordiychuk is devoted to the determination of the main issues of "Legal regulation of electronic document management in the field of taxation" (2017). The author justified the position on the unification of all the existing information systems (including customs and tax) in which electronic documents function, to a single All-Ukrainian information system of electronic document management. In addition, the ways to improve the information security of electronic document management in the field of taxation are defined in this thesis; peculiarities of legal regulation of electronic document management in tax legal relations are singled out; and, finally, the necessity of implementation of foreign experience in regulating electronic document circulation in the domestic legislation is argued by the author [1].

Nowadays the activation of integration management processes in the domestic practice raises the importance of reliable accounting information. At the same time, there is a need to adapt the national management accounting system to the requirements of international practice, which contributes to increasing the transparency and clarity of information for foreign investors. This, above all, refers to electronic documentation as one of the elements of accounting, which ensures the effective functioning of any enterprise. The current regulatory regulation of

electronic documentation is shown in Table. 1.

Table 1

Normative regulation of electronic documentation

Normative document	Type of content of the normative document
Law of Ukraine "About information" [4]	The Law specifies that any document is a material carrier containing information which basic functions is its preserving and transmission in time and space. This Law regulates legal relations in a number of issues, among which are as follows: - basic principles of information relations; - subject and object of information relation; - right to information and guarantees of the right to information; - protection of the right to information; - responsibility for violation of the legislation of Ukraine of information (disciplinary, civil law, administrative or criminal).
The Law of Ukraine "On electronic documents and electronic document management" [2]	This Law regulates the basic organizational and legal foundations of electronic document management and the use of electronic documents. The following terms are defined: - the electronic document is the document in which information is fixed in the form of electronic data, including obligatory details of the document; - electronic document management is a set of processes for creating, processing, transferring, receiving, storing, using and withdrawing electronic documents that are executed by using integrity checking and, if necessary, confirming the receipt of such documents. The Law regulates legal relations in matters of: electronic signature; electronic digital signature; legal status of the electronic document and its copy; circulation of electronic documents; checking the integrity of the electronic document; the procedure for storing and archiving electronic documents; organization of electronic document circulation; rights and responsibilities of subjects of electronic document circulation; resolution of disputes between subjects of electronic document circulation; responsibility for violation of the legislation on electronic documents and electronic document management.
The Law of Ukraine "On electronic digital signature" [3]	This Law regulates the legal status of an electronic digital signature and regulates the relations arising from its use. The following terms are defined: - the electronic signature – is defined as data in electronic form which are added to other electronic data or are logically connected with them and are determined for identification of the signer of these data; - the electronic digital signature is a type of electronic signature, obtained in the result of cryptographic transformation of the electronic data set which is added to this set or logically connected to it and enables to confirm integrity and identify the signer. The Law regulates legal relations in such matters as: the procedure for imposing and applying an electronic digital signature; legal relations of subjects in the sphere of electronic digital signature services; rights and obligations of the subscriber; the key certification center; responsibility for violation of the legislation on electronic digital signature; recognition of foreign certificates and keys, etc.

The above characteristic of the regulatory and legal framework that regulates information relations in the state and ensures the implementation of the state policy in matters of document circulation and records management, also allows to formulate a systematic theoretical basis for the study of electronic documentation of the process of production of the agrarian enterprises [8].

Electronic documentation of the process of production and the process of performance of works and services provides the collection and processing of information necessary to optimize cost management.

The main principles of management accounting in the conditions of automated accounting systems are:

- accumulation and reusable use of credentials;
- grouping of expenses according to the methods of accounting for costs and calculating the cost of production (works, services);
- one synthetic account – many analytical accounts;
- realization of calculation of the cost price of productions (works or services);
- adjustment of the planned cost price of products, works and services to the level of their actual cost price;
- automatic generation of all accounting registers and reporting forms based on data reflected in the system of accounts.

Methodological approaches to the electronic documentation of the production process allow the development of a model of accounting procedures for the automated processing of information on the costs of production and the cost of production (works, services) of the agrarian enterprises (Table 2).

Accounting procedures for automated processing of information on the process of production of agricultural enterprises are carried out in the following order:

- at the first level (automated workstation of accountant of the I level) – collection and registration of primary information on the costs of production and output (performance of work, provision of services), the formation of an electronic database that takes into account regulatory requirements for accounting in Ukraine);
- at the second level (automated workstation of accountant of the II level) – processing and analysis by the accounting department of the enterprise of information on the costs of production and output of products (works, services), which was formed by specialists of the first level of the automated workstation of accountant; the formation of a local database with processed information to transfer it to a higher level of management
- at the second level (automated workstation of accountant of the III level) – analysis of accounting information on the costs of production and output of products (performance of work, provision of services) obtained from the lower levels and the adoption on its basis of sound management decisions.

Table 2

Model of accounting procedures for automated processing of information on the production process in the agrarian enterprises

Structural divisions of the enterprise	Accounting procedures of automated information processing
Automated workstation of accountant of the first level	
Specific places of information creation at the enterprise	Collection and registration of primary information on the costs of production (material costs, labor costs, single social payments, amortization and other expenses).
	Collection and registration of primary information on the output of products (main, accompanying products and secondary products).
	Regulatory framework for accounting for production and output costs
	Displaying source information
Automated workstation of accountant of the second level	
Accounting department of the enterprise	Receiving data on the costs of production and output of products from the automated workstation of accountant of the first level, their verification, processing and formation
	Automated control, analysis and modeling of accounting information about the production process
Automated workstation of accountant of the third level	
The highest level of management Chief accountant, the Head of the enterprise)	Control and analysis of financial and economic activities of the enterprise
	Regulatory framework for accounting for production costs
	Formation of reporting on the production process
	Formation and transfer of information to other automated workstations of the enterprise information system
	Modeling the accounting process for making managerial decisions

Thus, the introduction of the proposed model in the practical activities of the accounting service of the agrarian enterprises will allow to automate the workplaces of accounting personnel, significantly increasing their productivity in the accounting area of the production process.

The effectiveness of management of the process of production of the agrarian enterprises in modern conditions depends to a large extent on the solution of the problems of the operational formation of electronic documents, as well as the control over their compilation and organization of storage. At the same time, electronic documents circulation not only significantly improves the quality of the work of the executors, but also reduces the time of collection, processing and submission of operational information for making correct management decisions.

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ANALYSIS OF THE CONDITIONS FOR THE LEADERSHIP FORMATION AT THE CURRENT STAGE OF BUSINESS DEVELOPMENT IN MONGOLIA

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For successful functioning and development of business in the country, it is necessary to have leadership and an effective management system. The role of leadership has a significant basis - it is the leaders who give meaning to the activities of employees, set more goals, while inspiring their employees to achieve

them, stimulate business processes, lead the company to prosperity and sustainable functioning.

Until 2009 GDP indicators reflected the positive dynamics of the country's economic development. In industry, in the beginning of 2008 real growth in production was achieved by 14.5%, which provoked an increase in GDP per capita by 48% and by 32% of real GDP in comparison with 2007 (Fig. 1). The reasons were the following: an increase in the production of non-ferrous metals due to the successful performance of the Mongolian-Russian joint venture 'Erdenet' and favorable weather conditions, which did not cause a massive fall in livestock.

But an increase of 62% in wages to employees in the budgetary sphere in 2007, a fall in world energy prices led to a decrease in the cost of imports of petroleum products, machinery and the private sector in Mongolia, to increased domestic prices for imported food (wheat, rice, fruits and vegetables), to an increase in the trade balance deficit and an increase in inflation (26.8%) in 2008 (Fig. 2.2).

Fig.1. GDP dynamics trend in Mongolia

These economic factors caused a sharp drop in Mongolia's GDP in 2009 by 19% compared to 2008 (Fig. 1), an increase in the unemployment rate by 2.4% (Fig. 2), a 25% drop in exports of goods and services, 30.2% drop in import (Fig. 3).

In 2010-2011 there was a sharp positive development of Mongolia's economy. GDP grew by 48%, inflation and unemployment dropped to 7.7%, while exports of goods increased by 35% (Fig. 1-3).

Since 2012 Mongolia's economic development has been characterized by a constant decline in its growth rates until 2017. The crisis of the world economy since 2012 has provoked a decline in demand and in prices for Mongolian raw

materials such as coal, copper, oil, etc., which in turn led to a sharp decline in companies' profits, employment and state budget revenues. So, in 2012-2016 the decline in GDP was 5%, the decline in exports of goods was 15% (Fig. 1, 2).

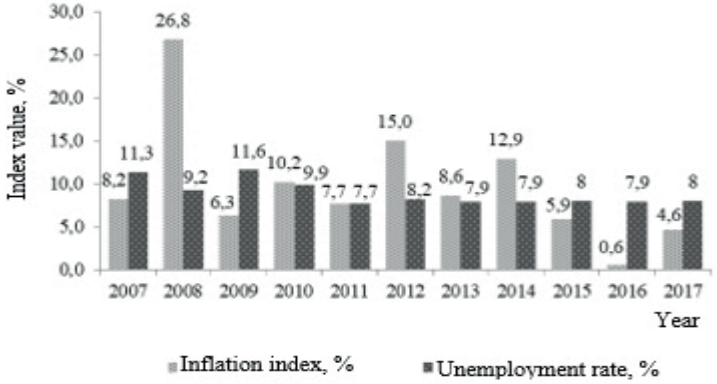

Fig. 2. Dynamics of inflation index and unemployment in Mongolia

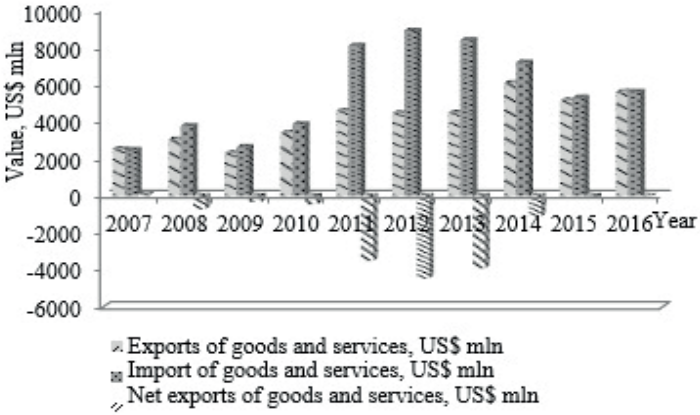

Fig. 3. The trend of Mongolia's export-import position

These conditions provoke the need for leadership growth in Mongolia's business sphere as a necessary condition for ensuring sustainable development of economic entities.

It should be noted that the economic conditions of doing business in Mongolia over the past decade remained almost unchanged. According to the World Bank estimates, as of 2017, Mongolia ranked 62nd out of 190 countries according to

the World Ranking of the Ease of Doing Business Index. This indicator changed significantly during the period under review only in 2007 (rated 45 place). Other years were characterized only by a decrease in the position in the ranking (Fig. 4). In 2007-2017 Mongolia lost its positions by 17 points, which indicates a deterioration of the business environment for setting up and functioning of enterprises. The current situation is the result of a rise in the price of electricity in the country and a bureaucratic approach to the implementation of contracts' provision.

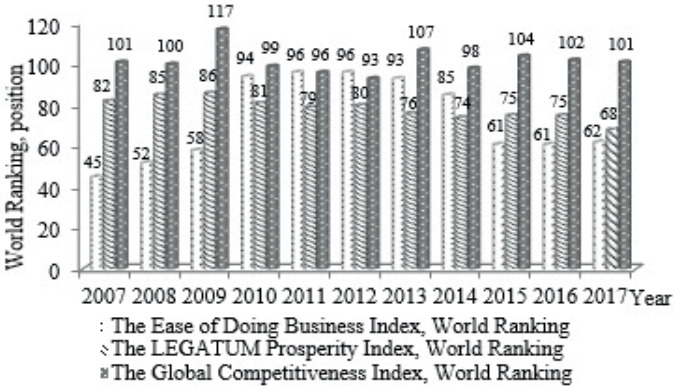

Fig. 4. Mongolia's world ranking on business conditions

The development of leadership in the business environment is also influenced by the achievements of the country in terms of prosperity and well-being. According to the World Prosperity Index, Mongolia lost its position by 14 points in 2007-2017 (Fig. 4). The reasons of this decline in Mongolia's position are the following: deterioration of environment quality, national and personal security of citizens, personal freedom and social tolerance.

According to the level of competitiveness of Mongolia's economy, according to the International Economic Forum's assessment, there is also no significant change in the situation for the better. In 2007-2017 the country did not change its position in the international rating and ranks 101st in terms of competitiveness. The country improved its positions by 16 points in comparison to 2009, but lost it by 8 points in comparison to 1012. Destructive factors of the competitiveness of Mongolia's economy are:

- high level of corruption in the national economic system;
- high level of bureaucracy and ineffectiveness of public administration;
- insufficient level of education and qualification of the workforce;
- high level of tax rates;

lack of motivation for innovative development;

poor work ethics in work teams, etc.

Mongolia refers to countries with a predominantly non-free economy, that is, moderately unfree. According to the World Ranking, Mongolia significantly deteriorated its position from 62 place in 2007 to 128 place in 2017 (Fig. 5). Thus, it changed the status of a country with a moderately free economy (60.3 points) to the status of a country with a moderately unfree economy (54.8 points).

The current situation is provoked by the development of corruption schemes in the country and the strong pressure of the political system on the judiciary, as well as the country's low level of openness to foreign capital.

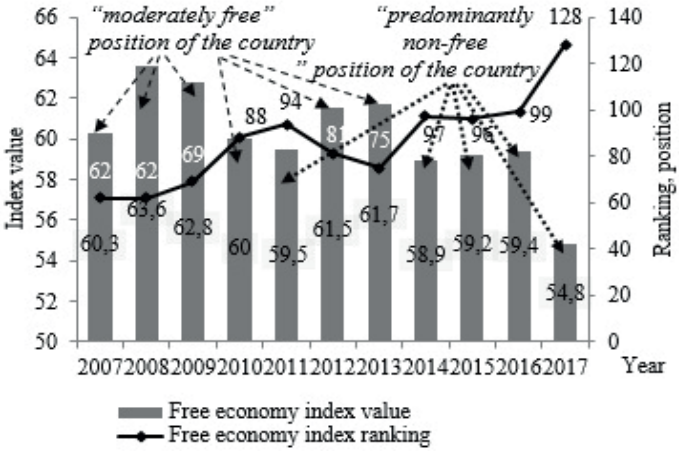

Fig. 5. Mongolia's international position in the index ranking of economic freedom

Also, the level of competition in the business sphere influences the competence of leadership. In this connection, within the framework of the research, the level of intersectoral competition was assessed with the help of the method of hierarchy of T. Saati and K. Cairns.

By a method of expert assessments, which were made by civil servants, entrepreneurs, researchers, a pairwise comparison of competitiveness in the context of all sectors of the Mongolian economy was carried out using the matrix method [1; 2].

The system of economic indicators of the assessment of intersectoral and intra-industry competition consists of:

- level of financial resources;
- use of innovative technologies;
- availability and security of highly skilled labor resources;
- flexibility in pricing policy;
- availability of an established market;
- the possibility of bank lending and reliable credit history;

- effective use of advertising means and other means of promoting goods, work, services;

- solvency of the target consumer sector.

The index of consistency as a result of the establishment of competition assessments, based on the opinions of experts, does not go beyond the limits of the interval [0; 20]. In this case, the limit of the index value, equal to 0, shows the best result (Table 1). The average score was determined by the priority vector (Xi, $0 \leq Xi < 1$).

On the basis of the data in the table, the following conclusions can be drawn. The industry has the highest level of financial resource provision - 0.238, besides, the level of competitiveness is maintained by the high level of solvency of the target consumer sector - 0.176 and the established market - 184. However, the destructive factor of the industry competitiveness is the flexibility of pricing policy and the availability of credit funds (0.040 and 0.058, respectively).

Also, agriculture - 0,086 - is one of the lowest values of obtaining credit banking funds according to the analysis results. The consumer sector also contributes to the increase of competitiveness - 0.173, while the decrease is due to low level of use of advertising means - 0.068.

In comparison with other industries, construction has the highest index, as to the possibility of bank lending (0.259). With setting up a regional logistics center for all types of transport which connect the major markets of Russia and China, it is planned to increase the volume of transportation in the country by joining the common network of air, road and rail transport of Northeast Asia, which occupies strong positions in the world economy.

Communications and telecommunications in Mongolia are characterized by a high level of market performance of their products - 0.246 and solvency of the consumer sector - 0.181. But meanwhile this industry is characterized by a significant shortage of qualified personnel (0.031) and an inflexible pricing policy (0.035).

It should be noted that of all the studied sectors of Mongolia's economy, the commerce sector has a high degree of competitiveness in terms of price maneuverability (0.194), the availability of an established market (0.167), and the solvency of major customers (.162). However, in this area, insufficiently developed high technologies are used (0.031). The service sector has the highest competitiveness in terms of skilled workers (0.190), the availability of the distribution network and the sales market (0.205), and the solvency of key customers (0.225).

On the basis of the assessment results, the following hierarchy of inter-sectoral competitiveness in Mongolia can be justified. Service sector has the highest level of competitiveness. This is due to the preference of entrepreneurs to work in industries where short-term benefits can be obtained. Commerce is on the second place, communication and information industry is on the third place, transportation is on the fourth place. Construction industry has the lowest level of competitiveness.

Table 1

Results of the assessment of inter-sectoral competition in Mongolia

Economic indicator	Branch of the economy						
	Agriculture	Industry	Branch of the economy Construction	Transportation	Communication and information	Commerce	Service sector
level of financial resources	0,112	0,238	0,129	0,112	0,123	0,120	0,158
availability and security of highly skilled labor resources	0,149	0,104	0,077	0,057	0,031	0,038	0,190
use of innovative technologies	0,095	0,129	0,119	0,067	0,117	0,031	0,124
flexibility in pricing policy	0,106	0,040	0,039	0,047	0,035	0,194	0,135
availability of an established market	0,159	0,184	0,100	0,181	0,246	0,167	0,205
the possibility of bank lending and reliable credit history	0,086	0,058	0,259	0,211	0,126	0,153	0,098
the possibility of bank lending and reliable credit history	0,068	0,069	0,122	0,081	0,141	0,135	0,084
solvency of the target consumer sector	0,173	0,176	0,155	0,244	0,181	0,162	0,225

Yet it should be noted that competitiveness has a very dynamic nature and only industries that are characterized by an innovative approach to non-ordinary policies are, as a rule, most successful.

Thus, it can be concluded that leadership in organizations at the current stage of business development in Mongolia is formed under the following conditions:

- a steady decline in economic development;
- deterioration of the conditions for the efficiency of business, mainly because of bureaucratic principles of public administration and the development of corruption schemes;
- decrease in the level of competitiveness of the national economy;
- the most competitive sectors of the economy are commerce and service sector.
- These factors lead to certain leadership models in organizations which will be

considered and determined in the study, with the aim of determining the optimal leadership styles under the current conditions of economic development.

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PART 4. THE LEGAL, SOCIOCULTURAL AND EDUCATIONAL ASPECTS OF SOCIETY MANAGEMENT

METHODOLOGICAL ASPECTS OF ASSESSMENT OF RESEARCH UNIVERSITIES COMPETITIVENESS

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The beginning of the XXI century has necessitated the preparation of highly skilled, competitive specialists capable of solving complex problems of the growth of the domestic economy, for the high-tech and innovative development of the country. Having identified the course for integration into the educational and scientific space of Europe, Ukraine is modernizing the educational sector in the context of European requirements, working hard on implementing the provisions of the Bologna Process. In accordance with the ratified Association Agreement between Ukraine and the EU, a strategy for implementing cooperation in the field of science and education, training and youth policy is being developed. This requires the reform of higher education, updating its content and operational components, focusing on improving the quality of training of future professionals.

Increasing the competitiveness of research universities, modernizing and reforming higher education systems are important tasks on the path to innovative European development of Ukrainian society in the context of formation of an educated young generation, which determines the relevance of the topic of the selected research.

Analysis of recent researches and publications. The problem of managing the competitiveness of higher education institutions (HEI) was carried out by many domestic and foreign scientists, in particular Verkhogliadova N. [11], Kravchenko K.V., Paschenko N.I. and Prus L.R. [9]. The authors state that the competitiveness of the higher education institution is mostly comparative dynamic ability in terms of price, quality and assortment to satisfy existing ones and shape future needs of customers in a definite market at a certain period of time, while ensuring social

orientation and own sustainable development. Fatkhutdinov R.A. [3] is convinced that the competitiveness of the HEI is defined as the ability:

1) to prepare specialists who can withstand a competitive struggle on a specific external or internal labor market;

2) to develop competitive innovations in this field;

3) to have an effective reproductive policy in all spheres of their activity.

A significant contribution to the research of the problems of research universities management was made by Altbakh F., Antoniuk L. [1], Burtseva K. [2], Federkeil G. [4], Ilnitsky D. [6], Kincharova A. [7], Kolotylo M., Kurbatov S. [8], Mayer G., Salmy D., Satsyk V., Supian V., Tulchynska S. Sytnytski M. [10], Zgurovskyi M., Zhylinska O. [12].

Despite considerable theoretical and practical achievements of scientists in the field of competitive research universities, the problem of competitiveness assessment of research universities is not fully disclosed, therefore it is relevant now.

The aim of the study is to analyze the existing foreign and domestic methods of assessing the competitiveness of research universities (RU) based on ranking and development of a comprehensive approach to the definition of an appropriate integrated assessment based on the use of multi-criterion analysis tools and in particular hierarchy analysis methods and TOPSIS.

Presentation of the main research material. One of the important elements of the competitiveness management of research universities is actually evaluating its competitive advantages, which enables identifying its weaknesses and strengths and formulating a list of measures aimed at improving its competitive position. The most common tools for the competitiveness assessment of research universities belong to ranking assessment that serves many purposes, in particular:

– to promote the educational sphere modernization and flexibility through feedback (in the form of surveys) with the main participants (students, teachers) of the educational process;

– to stimulate competition between different types of educational institutions, curricula and disciplines classifying them;

– to provide potential consumers (entrant, employer, state structures) with adequate comparative information on the status of higher education institutions timely;

– to ensure the rights of the young person to employment by improving the quality of education.

The authors have developed a comprehensive approach to the definition of an integrated assessment of the competitiveness of research universities based on the use of multi-criteria analysis tools in order to eliminate the problem of possible compensatory effects in the additive «weighting» of evaluations according to various criteria and increasing the objectivity and reliability of the results (Figure 1).

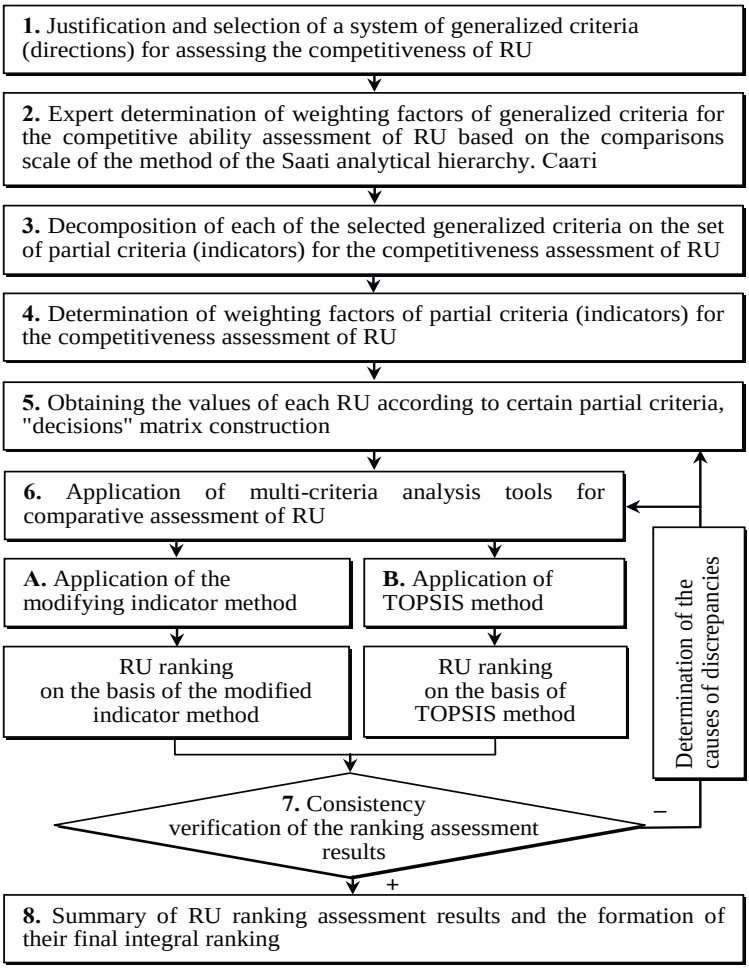

Fig. 1. Algorithm of multi-criteria evaluation of research universities competitiveness*

** developed by the authors*

Particular attention in the methodology is given to the identification of generalized criteria for the competitiveness assessment of research universities (Table 1).

Table 1

System of generalized criteria and partial criteria (indicators) for assessing the research universities competitiveness *

1. Educational activities	1.1. Average level of entrants (EIE average score)
	1.2. Employment percentage of higher educational institutions' graduates in corresponding majors and professions
	1.3. Relevance of educational programs to the needs of the education and labor market
	1.4. Availability of teacher training programs
	1.5. Participation of students in competitions, Olympiads, conferences
	1.6. Quality of teaching (assessment of graduates of research universities)
	1.7. Quality of education (assessment of employers)
	1.8. University reputation in terms of quality of teaching (survey of representatives of academic community)
	1.9. Ratio between students and professors
2. Scientific and innovative activities	2.1. Availability of material and technical base
	2.2. Ability of research universities to develop and introduce innovations
	2.3. Presence of an incubator, a science park on the territory of research universities
	2.4. The share of research and innovation work in educational curricula
	2.5. Number of patents and copyrights received per year
	2.6. Level of co-operation with business in creating innovative products and services
	2.7. Level of access to the educational process of modern scientific knowledge, pedagogical technologies and means of training
	2.8. Citation in Scopus and Web of Science
	2.9. Level of involvement of teachers and students in research activities
3. International activities	3.1. Participation in realization of international projects and programs, in scientific and practical conferences, seminars and exhibitions
	3.2. Presence of research universities in international rankings
	3.3. Participation in international educational programs and projects
	3.4. Collaboration with authoritative international educational and scientific institutions
	3.5. Academic motivation of teachers and students
	3.6. The share of university employees having an honorary degree conferred by a foreign-funded educational institution
	3.7. Number of prize places at international competitions
	3.8. Creation of scientific centers with foreign partners
	3.9. The ratio of the share of foreign students to the proportion of students from the country where the university is located

4. Management activities	4.1. Flexibility of organizational management system ¬
	4.2. Establishment of relations with public administration and business
	4.3. Professionalism level of senior management
	4.4. Organizational culture (traditions, customs and RU branding)
	4.5. Organizational climate
	4.6. Presence of international research exchange at the research university
	4.7. Availability of managerial innovations
	4.8. Availability of information management system
	4.9 Availability of research university development strategy

** developed by the authors*

The most labor-intensive and responsible stage of the competitiveness assessment of research universities is the construction of «decisions» matrix, that is obtaining information about the significance of each research university according to certain partial criteria (indicators). Now let us denote x_i^k – the value of the competitiveness level of i-research university according to k-indicator of j-generalized criterion ($i = 1, 2, ..., m$ (– number of research universities), $j = 1, 2, ..., N$ ($N = 4$ – number of generalized criteria)).

A. The following transformations for modified indicator method are used in order to normalize the «decisions» matrix: $y_{ji}^k = x_{ji}^k \Big/ \max_p x_{jp}^k$ – for indicators which have a monotonously increasing target function; $y_{ji}^k = x_{ji}^k \Big/ \max_p x_{jp}^k$ – for indicators with a monotonously decreasing target function. Let us denote $(y_j^k)^* = \max_i y_{ji}^k$, that is according to the concept of benchmarking for each indicator, the best values among the existing universities-competitors are considered. Then, the competitiveness level according to each generalized criterion (direction) of -research university is calculated using the formula:

$$CE_i = \frac{\sum_k \alpha_1^k \cdot y_{1i}^k}{\sum_k \alpha_1^k \cdot (y_1^k)^*} \qquad CS_i = \frac{\sum_k \alpha_2^k \cdot y_{2i}^k}{\sum_k \alpha_2^k \cdot (y_2^k)^*}$$

$$CI_i = \frac{\sum_k \alpha_3^k \cdot y_{3i}^k}{\sum_k \alpha_3^k \cdot (y_3^k)^*} \qquad CM_i = \frac{\sum_k \alpha_4^k \cdot y_{4i}^k}{\sum_k \alpha_4^k \cdot (y_4^k)^*}$$

Let us introduce the following markings $CE^* = \max_i CE_i$; $CS^* = \max_i CS_i$; $CI^* = \max_i CI_i$; $CM^* = \max_i CM_i$.

Then, the integral value of competitiveness of research university is found using the following formula:

$$CA_i = \frac{w_E CE_i + w_S CS_i + w_I CI_i + w_M CM_i}{w_E CE^* + w_S CS^* + w_I CI^* + w_M CM^*}$$

B. When applying TOPSIS method (Technique for Order Preference by Similarity to Ideal Solution) [5] the «decisions» matrix is normalized as follows:

$$y_{ji}^k = x_{ji}^k \Big/ \sqrt{\sum_{p=1}^{m} (x_{jp}^k)^2}$$

.

The next step is «weighting» of the normalized matrix defined in the previous step using the following formula $u_{ji}^k = \alpha_j^k \cdot y_{ji}^k$

Further calculations will be performed according to the following scheme. At the 1st stage the competitiveness levels of research universities are determined according to generalized criteria. To do this, first, for each partial criterion (indicator), the «best» (the «ideally positive solution – IPS») and the «worst» (the «ideally negative solution – INS») values are found taking into account the nature of the monotony of the target functions.

Let us denote $(u_j^k)^+ = \max_i u_{ji}^k$ and $(u_j^k)^- = \min_i u_{ji}^k$, if k – indicator of j - generalized criterion has steadily growing objective function. Let, $(u_j^k)^+ = \min_i u_{ji}^k$ in the case of a monotonously decreasing target function for k – the indicator of j - generalized criterion.

The next step is to calculate the degree of proximity. So, the distance between -alternative and IPS is calculated by the formula

$$S_{ji}^+ = \sqrt{\sum_k (u_{ji}^k - (u_j^k)^+)^2}$$

.

Similarly, distance to INS: $S_{ji}^{-} = \sqrt{\sum_{k} (u_{ji}^{k} - (u_{j}^{k})^{-})^{2}}$. Relative proximity of i - alternative to the ideal according to j - generalized criterion is interpreted as the level of its competitiveness due to this criterion and is determined by the formula

$$C_{ji} = \frac{S_{ji}^{-}}{S_{ji}^{-} + S_{ji}^{+}}$$

At the 2nd stage, using analogous procedures the integral levels of the RU competitiveness are determined taking into account all the generalized criteria. For this, since the «decisions» matrix $\|C_{ij}\|$ is dimensionless, we «weigh» it with the weighting coefficients $w_E = w_1$, $w_S = w_2$, $w_I = w_3$, $w_M = w_4$ obtained above using the formula: $p_{ji} = w_j c_{ji}$.

Then, on the basis of the following marks $p_j^{+} = \max_i p_{ji}$ and $p_j^{-} = \min_i p_{ji}$, «distances» $D_i^{+} = \sqrt{\sum_j (p_{ji} - p_j^{+})^2}$ and $D_i^{-} = \sqrt{\sum_j (p_{ji} - p_j^{-})^2}$ are calculated, and on their basis the relative «distance $R_i = \frac{D_i^{-}}{D_i^{-} + D_i^{+}}$ is calculated, which defines the integral levels of research universities competitiveness.

Conclusions. The conducted analysis of existing foreign and domestic methods of research universities rankings have enabled to highlight generalized criteria and indicators for assessing the higher education institutions competitiveness, which became the basis for developing a comprehensive approach to the definition of relevant integral assessments of research universities based on the use of multi-criteria analysis tools, in particular hierarchy analysis methods and TOPSIS.

Prospects for further research in this field are:

– full criteria system formation when assessing higher education institutions and reception of appropriate reliable assessments;

– application of modern tools of multi-criteria assessment taking into account opportunities receiving inaccurate estimates for construction of research university rankings;

– simulation in order to study sensitivity of received rankings depending on

weighting factors changes of criteria evaluation and their indicators.

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EXAMINATION OF DIGITAL PHONOGRAMS AND DIGITAL RECORDING EQUIPMENT: TECHNOLOGICAL ERRORS OF EQUIPMENT MANUFACTURING AND THEIR USE

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Wide application of digital technology and, in particular, digital recording of sound and images in all fields of human activity has resulted in the creation of examination tools to verify the authenticity of the materials of digital recording. Examination tools include expert software products and the methodology for conducting impact assessments. Difference of mathematical models describing the processes, which occur during recording sound and images, leads to separation of recording digital phonograms and digital images. In this article, we consider the modelling principles of examination tools for authentication of digital sound tracks and identification of digital recording equipment.

Scientists and specialists from different countries such as the United States, France, Britain, Russia, Brazil, Poland, Romania, and Spain deal with the development of examination tools of digital sound tracks. Diagnostic task of processing traces in digital sound tracks is solved by the methods of allocation of regular spectral components from the recorded signals and continuity of their phase [1–14]. However, in most proposed methods there are spectral components generated through electromagnetic network pickups for recording equipment. Nevertheless, in modern digital recording equipment, levels of such pickups in recordable digital signals are very small, and short-term (windowed) Fourier transform is used for their allocation. In fact, the expertise of these countries used one of the methods (that was created in the 70s in the USSR) to verify the authenticity of information in analog sound tracks, not taking into account the specificities of digital recording of signals [10].

Therefore, having read the works published by our international colleagues, we decided that we should provide them with theoretical and practical results of our work of last 12-15 years. In fact, in this field we have created a new direction of constructing examination tools of digital sound tracks. We believe that this will be done in the form of a series of articles, which are consistently showing the theoretical and experimental background of creating practical software products and techniques for authentication of digital sound tracks and identification of digital recording equipment, embedded in the practices of expert institutions of Ukraine.

The purpose of this article is to show some theoretical considerations underlying our developed experimental examination tools.

The possibility of applying stray parameters of digital recording equipment for revealing traces of digital processing in digital sound track. As any technology, digital recording equipment is designed and manufactured in control of its components. Therefore, digital recording equipment has its stray parameters. To apply these parameters for examination, it was necessary to consider different variations of constructing digital recording equipment, to find general nodes and blocks for all types of digital recording equipment and to define stray parameters of these nodes and blocks. You should choose those parameters, influence of which on the signals creates identification signs, possessing persistent properties of individuality, repeatability and physical extraction of digital sound tracks from signals and/or intrinsic noises, in which they must be fixed [10].

Analysis of different kinds of constructions of digital recording equipment showed that sampling frequency generators are always applied in all types, analog-to-digital and digital-to-analog converters (ADCs and DACS, respectively). In addition, codecs of channel code and ECC codecs of various types, providing record digital information on mobile carrier are used in digital magnetic recording equipment and instrument recording on optical discs. Moreover, data compression codecs are applied in digital recording equipment with the recording on immobile carrier. The number of kinds and types of codecs is large enough, so it is no sense to consider them from the point of view of the use of stray parameters as identification signs. However, in the future it should be noted that under integral assessment of any parameters of noise, their development can be used in identification.

Thus, regardless of the type of carrier (mobile or stationary), ADCs and DACS and sampling frequency generators are always used in any type of digital recording equipment. So, stray parameters of these nodes and blocks were considered. At the beginning we studied structural features and stray parameters of different types of ADCs and then we found that level quantizer was used in any of them. This node represents the interest from the point of view of identification signs. So let's look at it in more detail.

Level quantizer represents R-2R resistive matrix. It is intended to establish the weight of each bit of ADC (the principle of analog-to-digital conversion is not considered in this work, but it should be noted that this process consists of

two operations – analog signal sampling temporally and quantization of obtained samples by the level). The transfer characteristic of level quantizer is determined by its static characteristic, more generally shown in Figure 1.

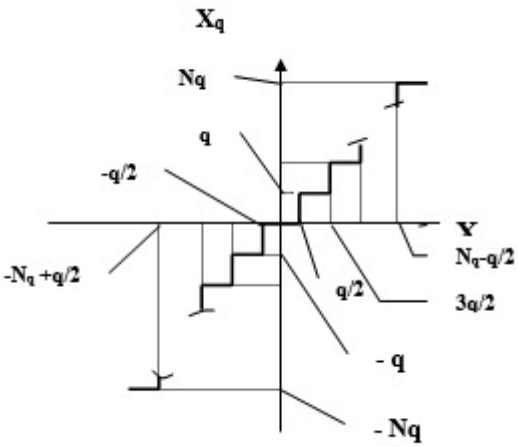

Fig. 1. Static characteristic of quantizer by level

Total error of ADC is defined as

$$\overline{\delta}^2_{АЦП}=\overline{\delta}^2_0+\overline{\delta}^2_{дин}+\overline{\delta}^2_q$$

where

$\overline{\delta}^2_0=\frac{\Delta^2_0}{U^2_{оп}}$ – mean square of dynamic error of ADC;

$\overline{\delta}^2_q=\frac{q^2}{12}$ – dispersion of quantization error by level (for a uniformly distributed random quantity),

where

Uon –value of reference voltage of ADC [10; 11].

examination during conducting identification research of digital recording equipment and checking the originality and integrity of digital sound tracks.

We are not interested in dynamic error for two reasons:

- Firstly, in ADC, using sample and hold circuit, this error is virtually non-existent (namely, such ADCs are used in digital recording equipment);

- Secondly, it is impossible to determine it in the examined sound track because of unknown original form of the input signal to convert it.

Variance of quantization error by level is not interesting for an expert, because it is determined only by level of least significant bit (LSB) and make fluctuations of this level relative to the zero value of the signal.

However, the static error of ADCs and DACS, which includes the inaccuracy of technological manufacture of individual nodes, in particular level quantizer, is of interest for its use in expert investigations.

Therefore, this error should be considered in detail. Defects of manufacturing level quantizer are important among the errors of static characteristic of ADC [6; 9; 14], which can be potentially used in the examination, they are:

– differential nonlinearity (DNL) *δld*, the deviation between two analog values corresponding to adjacent input digital values. It is an important specification for measuring error in DAC; the accuracy of DAC is mainly determined by this specification. Ideally, any two adjacent digital codes correspond to output analog voltages that are exactly one LSB apart. Differential non-linearity greater than ± 1 LSB may lead to a non-monotonic transfer function in DAC.

– non-monotonic form of static characteristic δnm, – the deviation of increment signs of the response and the impact on at least one of its sections (see Fig. 2).

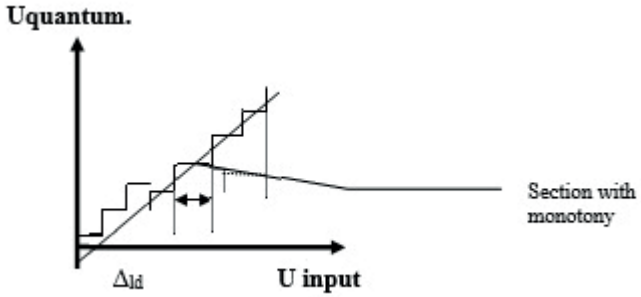

Fig. 2. Differential non-linearity and non-monotonous section of static characteristic of quantization

Certainly, that all these technological defects will be revealed only in the output signals. Therefore, you should consider the system of analog-to-digital conversion as a serious circuit of ADCs and DACs. To consider the circuitry of ADCs and DACs makes no sense, because they are considered in detail in many works, such as in the works [10; 11]. Note, however, that digital recording equipment usually uses ADC of bitwise balancing, while sampling of the original analog signal is used by the sample and hold circuit.

Considering the model of signal passage through the system of analog-to-digital conversion, we note that digital input signals of DAC enter in accordance with the input digital word in the parallel code with a frequency, equal to the sampling rate.

Stepwise analog signal is formed on its output, and it is equal to the sum of the «weights» of all bits of the input code. You can write analog output signal of DAC analytically [13] as

You can write analog output signal of DAC analytically [21] as

$$U = \sum_{i=0}^{n-1} a_i 2^i U_{on}$$

where

U – analog value, the result of conversion;

Uon – reference voltage indicating least significant bit (LSB);

ai – weighting factors determined by bits of the binary code.

Thus, the instantaneous value of output signal of each sample of DAC is the sum of bits «weight» of the input code, in proportion to that R-2R matrix divides the value of the reference voltage.

Therefore, if analog input signal x(t) is supplied to the input of digital recording equipment, level quantizer of which has differential nonlinearity or non-monotonic form of static characteristic, the output signal y(t)(with the assumption that the digital recording equipment transmits digital signals without loss) can be written as

$$y(t) = y_1(t) + y_2(t) = \sum_{i=0}^{k} a_i 2^i U_{on} + \sum_{k+1}^{n-1} a_i 2^i U_{on} = a_{k+1} 2^{k+1} U_{on} + \sum_{i=0}^{k} a_i 2^i U_{on} + \sum_{k+2}^{n-1} a_i 2^i U_{on}$$

where

y1(t) – analog signal before the appearance of non-monotonic form of static characteristic,

y2(t) –analog signal after the appearance of non-monotonic form of static characteristic,

k – quantization level, until which non-monotonic form of static characteristic is missing,

k+1 – following k quantization level with non-monotonic form of static characteristic,

k+2 – quantization level following the level, on which there is non-monotonic form of static characteristic.

Thus, the instantaneous value of output signal of each sample of DAC is the sum of bits «weight» of the input code, in proportion to that R-2R matrix divides the value of the reference voltage.

Provision 1. The probability of coincidence of sampling frequency devices involved in the digital processing of sound tracks is negligible.

Provision 2. The probability of coincidence of quantization levels with technological defects of quantizer devices involved in the digital processing of

sound tracks is negligible.

Provision 3. External interposition and modification of the information contained in digital sound tracks are possible when using at least two different digital devices.

Provision 4. Traces of digital processing of the sound track are revealed as form distortions and, therefore, spectrum of analog signals received on the analog output of equipment when record playing back of analog signals of the sound track, processed in digital form.

Conclusions.

1. The analysis of technological inaccuracies of manufacturing nodes and blocks (stray parameters) of digital recording equipment, in particular ADC and DACs-level quantizers, showed their influence on the appearance of identification signs in intrinsic noises of recording equipment that have individual character.

2. It is shown that such identification signs can be used for identification and diagnostic expert investigations of digital recording equipment and digital sound tracks.

3. It is proved that the use of stray parameters of the recording equipment is a new direction of creating the examination tools. It is proposed to develop examination tools based on this direction. Methods of constructing such tools will be considered in the subsequent articles.

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INNOVATIONS AS DOMINANS OF DEVELOPMENT OF EDUCATION

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The rapid development of innovative technologies is the cause of educational reforms that require investment support to transform education into a productive sector of service economics. Ensuring a reliable interaction between education and science with the interests of man, state and business should be put to the fore in order to accelerate the innovative development of society [1]. Innovation is one of the main instruments of reform, which helps not only to avoid crises, but also successfully deal with them. Education is not an exception.

In accordance with the Law of Ukraine «On Higher Education», the notion «university» implies the carrying out of «innovative educational activities at different levels of higher education (including the Doctor of Philosophy)». «The subjects of innovation activity are scientific, scientific and pedagogical workers, persons

studying and working in institutions of higher education (IHE) and employees of enterprises. They and higher education institutions carry out innovative activities together. Institutions of higher education may be the founder (co-founder) of other legal entities whose subject matter is the proof of the results of the scientific and scientific and technical activity of the higher educational institution to the state of the innovative product and its further commercialization. The National Higher Educational Institution has the right to form innovative structures of different types (scientific and technological parks, business incubators, small enterprises, etc.) on the basis of the combination of interests of high-tech companies, science, education, business and the state in order to implement and implement innovative projects» [2].

«Institutions of higher education have the right to independently develop and implement their own innovation programs and introduce a rating assessment of innovative achievements of participants in the educational process, etc. The main tasks of their innovation activities are the obtaining of competitive scientific and scientific-applied results; the introduction of innovative products into production, other sectors of the economy; application of new scientific, scientific and technical knowledge during training of specialists with higher education; formation of modern scientific personnel potential capable of providing development and introduction of innovative scientific developments» [2].

In the «National Doctrine of Education Development» it is stated that «in Ukraine, accelerated, advanced innovative development of education should be provided by updating its content and organizing the educational process in accordance with democratic values, market principles of the economy, modern scientific and technological achievements». It is emphasized, that organizations need experimental verification and examination of educational innovations, introduction of mixed financing of innovative projects in education, implementation of targeted innovative programs aimed at increasing Ukraine's participation in cooperation in the international educational services market [3].

Today there are various methodological approaches to determining the essence of innovation in educational activities. V. Zhukova considers «innovations in educational activities or educational innovations» as «any target activity, organizational decision, system, procedure or method of conducting educational activities that are significantly different from established practice, are first used in this organization and aimed at raising the level the effectiveness of the organization's operation and development in a competitive environment» [4]. A. Khutorskoi [5] and L. Danylenko consider educational innovations in socio-economic, psychological-pedagogical, organizational-managerial, and scientific-industrial aspects.

On the other hand, for the description of innovative activity in education, researchers use the term «pedagogical innovation». So, H. Syrotynko characterizes it as «a new pedagogical product - the result of the process of creating a new one, which respectively updates the pedagogical theory and practice» [7].

The concepts of «pedagogical innovation» and «educational innovation» are not synonymous. The educational and pedagogical subsystems of education have certain characteristics in relation to the goals, subjects, content of activities, methods and means, organizational forms and results. In particular, the pedagogical subsystem provides the acquisition of certain knowledge, the formation of specific skills and skills, and the educational provides their acquisition as a system. Educational innovations relate to the educational system, its structures and processes, which occur in it. Pedagogical innovations cover the sphere of pedagogical process (original methods of development of various forms of thinking, creative abilities, social and adaptive possibilities of a person, etc.). So, pedagogical innovation is one of the varieties of educational.

Innovative investments can be implemented in the pedagogical process of providing knowledge (in the means and approaches of training, the mechanisms for mastering the received information), and in the structures that it provides (management organization, resource provision, etc.).

Relying on the definition of «innovations» in the Law of Ukraine «On Innovation Activity», «innovation in education or educational innovations» can be interpreted as newly created (applied) and (or) advanced technologies, products or services, organizational and technical decisions of educational, administrative, commercial or other character that significantly improve the quality, effectiveness and efficiency of the educational process» [8]. At the same time, concepts, theories, systems, models, methods, technologies, methods, techniques, forms in educational activities and in providing educational process can be an innovative product in education.

In addition, educational innovation is the result of scientific research, advanced pedagogical experience of individuals and entire groups. Pedagogical process itself requires innovations in the content, forms, methods of teaching and education, in the organization of the joint activities of teachers and students. If earlier, innovation activity in education was limited to using the innovations recommended above, now it has a research and exploration character, namely: new training programs and training materials are developed, new techniques and ways of learning are used. In modern conditions, the teacher must act as an author, researcher, user and advocate of new technologies, theories, concepts. At the same time, at the level of educational institutions, educational management bodies, targeted selection, evaluation and implementation of best practices, new ideas and techniques are carried out.

Innovation is the result of an innovation process, which is defined as the process of using innovations associated with its acquisition, reproduction and implementation. Part of researchers do not refer to innovative processes of development, use and dissemination of educational innovations, limiting the definition only to the creation of a new one. In our opinion, the process of finding innovative ideas; creation (development) of innovative products in pedagogical science and education system; their perception by the social-pedagogical community and the system of education (thanks to the theoretical, methodological, and psychological preparation

of the participants); mastering - assimilation and application (implementation in practice through the development of appropriate recommendations); current use; the evaluation of productivity and effectiveness, and further dissemination will be innovative in education.

Taking into account a variety of approaches to the definition of an innovative product in education, the main features that reflect the specificity of innovations in education can be the following:

- the purposefulness of changes that make new elements (innovations) into education and cause its transition from one qualitative state to another. Innovations are only those changes that lead to changes in results, effectiveness and quality of education (through its content), change in the ways to achieve them (through the forms, nature and organization of the educational process);
- the presence of specific features that are associated with socio-psychological and other aspects of pedagogical activity;
- initiating innovative changes at any level of the educational sphere (teacher, student, management of an educational institution, state and local government education and self-government in the field of education);
- innovative changes should be made in the activities and thinking of all participants in the educational process;
- innovation processes in education should be continuous and aim at continuous improvement of education;
- in order to ensure the process of continuous innovation of education, it is necessary to implement appropriate mechanisms of management of quality of education;
- the effectiveness of implementing a certain innovation depends on the level of susceptibility of the system (which implements innovation) to innovation changes and the availability of real opportunities for the implementation (introduction) of innovation.

Innovations can be categorized according to the depth of the changes introduced and divided into the corresponding levels: «zero order: regeneration of the primary properties of the system, preservation and updating of its functions; first order: change of quantitative properties of the system at constant quality; second order: rearrangement of system components to improve its functioning; third order: adaptive changes, elements of the production system to adapt them to each other; the fourth order: a new variant, the simplest qualitative change that goes beyond simple adaptive changes; the initial signs of the system do not change, there is some improvement of their useful properties; fifth order: a new generation; all or most of the properties of system change, but the underlying structural concept persists; sixth order: a new kind, qualitative change of the primary properties of the system, the original concept without changing the functional principle; seventh order: a new genus, a higher change in the functional properties of a system or its part that changes its functional principle» [9]. Use of the above general classification of

innovations can be only partially in education, since the first three levels (orders) do not cause the transition of the education system from one qualitative state to another, do not provoke changes in the goals and results of education and change the ways to achieve them. It is only about modernization, which can increase the quality, efficiency and effectiveness of the educational process, but not to a significant extent. From this position innovations can be recognized only innovations of the fourth, fifth, sixth and seventh orders.

Certain types of innovations have their own peculiarities, in particular, systemic innovations concerning radical changes in education, need and generate other types of innovations: organizational, managerial, economic, pedagogical, social, etc. If the level of novelty is partial, then changes take place only in a certain functional subsystem of education. For practical use of innovations in substantiating investment policy it is better to consider it by factors of origin, implementation, impact and consequences. It allows to determine the level of scale, scope, stages of changes and the implications of the introduction of innovations in education and the peculiarities of its innovative development in modern conditions.

For the most part, in all innovative events, information and telecommunication technologies and modern computer equipment are used. An example of such technologies is education quality management systems, document management automation and learning management, distance education and other innovations. In addition, innovations should be considered hardware (technical base) and software, in particular, the creation of a computer network, sites of different levels, providing access to the global Internet; creation of educational and methodological resources in digital form, in particular, electronic library, textbooks, system of tests, cases and informational materials.

Such systems allow to increase the efficiency of managing the learning process by optimally creating curricula, monitoring the results of training and staffing, and quickly making changes. Creating electronic educational resources requires the appropriate qualification of staff, software, and time resources and relevant investments.

Practice shows that public educational institutions, in the absence of sufficient investment resources to implement relevant large-scale innovation projects, are generally more inert in terms of innovative changes than private ones. In most institutions of higher education educational innovations are usually not perceived broadly, causing a sharp counteraction, although over time they get mass recognition. In addition, the following negative factors are significantly affected by innovation activity: lack of investment funds for donors to implement educational innovations; the limited volume of investment funds of potential recipient customers, including insufficient inflow of foreign investments into scientific developments; the deterioration of the material and technical base of education: the moral and physical depreciation of scientific and educational equipment, reducing the volume of research and practical training; lack of state investment policy on innovation

activity of educational entities, in particular, legislative provision; lack of necessary scientific, technical and personnel potential, etc.

All this leads to low innovation activity of educational institutions, in particular, a small amount of educational innovations used in practice.

The solution to this situation is to create an effective system of interaction «donor - catalyst – recipient», which activates innovation activity. In particular, the proposed system allows: the formation of an effective network «education – science – production», the creation of innovation centers, centers of technology transfer and other forms of association of the efforts of science, education, production and investment capital (including involving small and medium business); the creation of investment funds, a system of grants for the implementation of innovative projects involving the resources of state and local budgets, private capital; intensification of international contacts of IHE and research institutions; providing support for the further development of intellectual and creative potential through a system of continuous education and training, etc. So, the innovative focus is on the use of fundamentally new progressive (first of all, informational) technologies and organizational and managerial models of the functioning and development of education. In addition to the process of developing educational innovations (methods, forms, pedagogical technologies), investment support for their implementation is necessary, assimilation and further support through information provision and continuous monitoring to assess their condition and development forecasts. State Statistics Committee proposes to use the «Report on the creation and use of advanced technologies and objects of intellectual property rights» for the construction of innovation databases [10]. This form of statistical observation is intended for legal entities that created and used advanced technologies and intellectual property rights during the reporting period. It has certain disadvantages that do not allow to determine the impact of investments on the development and implementation of innovations in education in Ukraine. So, the main drawbacks of such statistical accounting are the following:

– the form is filled in only by legal entities in the field of higher education (code 85.4); at the same time during the statistical record the indicators of other branches of education (pre-school, secondary and vocational education) are ignored, which contradicts the doctrine of innovative development of education in ukraine; in addition, innovations at the level of individual entrepreneurs who provide educational services remain out of sight and are an indicator of the effectiveness of innovative learning approaches;

– there is no financial and economic information on investment costs, results and effectiveness of the use of educational innovations, which completely devalues information from the point of view of use (to justify the attraction of investments in innovation) at different levels of education;

– innovations are not divided into «educational» and «other»: the general indicator characterizes all «innovations» that took place in higher educational institutions

and, as a rule, are created (used) by them for scientific (and not educational) activity.

Given the above-mentioned statistics on innovation development and its investment in Ukrainian education, changes and additions need to be made. In particular, it is advisable to distinguish between innovation development through its allocation to education by the amount of investment.

So, the organizational aspects of the implementation of programs of innovation, their assessment in the field of education is one of the many areas that will ensure the output of the educational sector of Ukraine from a crisis state and ensure its further development, and wake up to compel the subjects of education to improve the quality of educational services.

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MANAGEMENT OF INTELLECTUAL BUSINESS AS A BASIS FOR THE DEVELOPMENT OF KNOWLEDGE-BASED ECONOMY

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The intensification of globalization processes has significantly aggravated the competition between the countries of the world, which necessitates the development and implementation of measures to ensure their competitiveness, taking into account the transition of the world economy to a qualitatively new level (post-industrial stage) of its development.

In studies of socio-economic processes characteristic of the transformation of industrial society into a postindustrial one, a number of concepts of economic development are proposed, in particular, the innovation economy, the information economy, the digital economy, the «new» economy, the knowledge economy, the knowledge-based economy. Common to them is the recognition of the priority value of information and knowledge in economic development.

The main characteristics of the postindustrial stage of the economic development of society are determined by the essence of the category «postindustrial society», formulated by D. Bell. He noted that «a post-industrial society is a society in whose economy the priority shifted from the production of goods to the production of services, the conduct of research, the organization of the education system and the improvement of the quality of life ... in which the introduction of innovation ...increasingly depends on achievements theoretical knowledge» [1]. According to this formulation, the development of the economy in society is stimulated through knowledge.

So, the post-industrial stage of economic development is a knowledge-based economy. Its development is stimulated by knowledge, which becomes the basis of material production through the constant development and implementation of innovations based on resources, products, services, technologies and communications.

Increasing the dependence of the competitiveness of national economies on knowledge, as well as the ability to accumulate and use them together with natural and material resources to create economic benefits, determines the only possible direction for ensuring the competitiveness of countries-the formation and development of a knowledge-based economy.

By the mid-1990s, the category «knowledge-based economy» had not been

clearly defined.

In 1996, the OECD defined a knowledge-based economy as an economy that is directly based on the production, dissemination, use of knowledge and information [2].

So, the categories «knowledge economy» and «knowledge-based economy» are different. The essential difference is that in the knowledge economy, knowledge is a product, and in a knowledge-based economy knowledge is a means of production («tools of labor»). In fact, this opinion was spread by P. Drucker, arguing that knowledge technologies (knowledge engineering, knowledge management) are used to create economic advantages [3].

But over time, the term «knowledge economy», which was proposed for a particular sector of the economy, was used to characterize a new type of economy where knowledge plays a decisive role, in fact identifying it with the category «knowledge-based economy».

The intensification of economic activity, saturated with knowledge, in the leading countries becomes the main indicator of the level of development. It is this position of many states that contributed to the priority development of the intellectual business in them. The main activity of its subjects is intellectual, the main resources - the knowledge and experience of personnel, the products - intellectual product and intellectual service. It has certain features of his organization and management.

One of the key processes of managing the intellectual business are processes of managing human capital and potential as the main resources of enterprises of such business.

Human capital management is considered as a set of methods, forms, tools, criteria, functions for the formation, development and accumulation of human capital, which is formed and operates in accordance with the system of production relations, aimed at satisfying the economic interests of the enterprise [4].

Managing human capital in relation to the employee's personality requires taking into account two directions, namely:

- internal, which refers to the inner desires and aspirations of the person (the carrier of human capital);

- external, that is, a system of management signals generated by the entity managing human capital or other carriers of human capital that directly interact with each other, or their aggregate.

Human capital, like the physical, is created and accumulated through investment.

Investing in human capital is aimed at developing and acquiring values (in the form of knowledge, skills, abilities and skills) that form the basis for the use of human capital.

Investments can be carried out as:

- investment of financial resources, that is, expenses, for example, for the physical formation of a person, upbringing, education;

- the implementation of certain types of activities and processes that allow

employees to accumulate knowledge, experience, skills (research and innovation, the process of self-learning).

Managing human capital requires consideration of its specific specificity and specificity of processes that are inherent in it:

- the return on investment in human capital directly depends on the life span of its carrier (duration of the able-bodied period), in fact, the sooner investments begin in a person, the faster they start giving returns;
- quality and long-term investments give a more significant and long-term effect for its accumulation and use;
- there is a tendency to physical and moral deterioration;
- human capital is able to accumulate even without financial investment;
- the accumulation of human capital helps to increase its profitability, but up to a certain limit of active labor activity;
- the nature and types of investments in a person are determined by historical, national, cultural characteristics and traditions;
- In comparison with investments in other forms of capital, investments in human capital are the most profitable for both the enterprise and the individual.

Investing in human capital is constrained by the following factors:

- the lack of a guarantee of obtaining the expected result and a high risk of investment (the employee can switch to another, for example, a highly paid job, and the economic benefit from investing in the renewal of fixed assets is quite predictable and accurately determined at cost)
- the investment period of human capital is much longer than the investment in physical capital (training a specialist in higher education institutions lasts 5-6 years, and the replacement of equipment for several days or months);
- investments in improving the quality of personnel for the formation of human capital must be carried out continuously, not temporarily or once, as this reduces their overall effectiveness;
- With the end of active working life, the use of accumulated human capital is significantly reduced.
- the return on investment depends on the lifespan of the carrier of human capital.

However, it should be noted that only the presence of a certain set of professional knowledge, skills, skills and relevant personal characteristics of staff is not human capital. They turn into capital when they are used in business processes to generate income.

So, the leaders of the Subjects of Intellectual Business should perceive qualified personnel as the most important asset with great potential, and investing in the formation of human capital is considered one of the important forms of investing that generates income and promotes business development.

Education is essential for the formation and use of human capital, and the need for continuing education is determined by the rapid pace of socio-economic development.

The peculiarity of the existing systems of retraining of personnel is that they are the constituent elements of integrated integrated programs for staff development, while the problems of professional and qualification growth are necessarily provided for by the enterprise development plans.

Human potential accumulates the mental activity of employees, their potential intellectual abilities, knowledge, skills, practical experience, professional and personal ties, personal development, the ability to self-motivate and self-learn, spiritual and moral values.

The formation of a policy for the accumulation of human potential should be coordinated with the strategy of personnel management, be based on the competence of management, combine in a single system personnel management and performance management of the enterprise as a whole.

A characteristic feature of the effective activity of the subject of intellectual business is the availability of highly qualified specialists able to realize their potential as effectively as possible.

The employee development management subsystem should be responsible for:

- formation and effective use of knowledge funds;
- forecasting the need for intellectual resources;
- Identification of the emotional, psychological and intellectual potential of employees;
- Increase the productivity of the intellectual work of employees due to their proper placement, taking into account emotional, psychological and intellectual compatibility;
- Implementation of measures to develop mutual understanding, inclination to interact while working in a team, encourage initiative work, develop leadership skills and a propensity for creative work.

Providing conditions for staff development and development, organization of the process of constant replenishment of knowledge for the formation of human potential will require:

- analysis of factors affecting the development of intellectual potential;
- forecasting the need for acquiring new knowledge by employees of the enterprise;
- stimulation of intellectual development of personnel;
- development of a program for implementing measures aimed at increasing the intellectual base [5].

The availability of the necessary basic knowledge for the personnel is clearly not enough for the enterprises of the intellectual business. Employees must have the capacity for deep thinking and the constant accumulation of new knowledge, which will ensure the growth of human capital and the development of human potential.

The most significant problem of the formation and development of human capital and potential can be the gradual «stinging» of a person due to the active influence of the computer and the Internet on his brain, the tendency of which has

already been noted by researchers.

People, who are fascinated by the tempting opportunities offered by digital information technologies and the Internet read and remember less, which harms the thinking process and hinders the development of a person [6].

«The depth of our intellect depends on the ability to transfer information from a working memory to a long-term one and to create conceptual schemes on its basis». «When we read a book, information comes to us dosed» and, «due to the focused concentration on the text, we can gradually transfer information into long-term memory and form associations that are important for creating schemes». «In the case of the Network, we are faced with multiple and extremely active sources of information», «we are able to transfer only a small amount of information to long-term memory». «We cannot turn new information into schemes. Our ability to learn begins to suffer, and our understanding becomes shallow» [7, pp.. 106-07].

To confirm the foregoing, let us compare the values of the two criteria used by the IMD World competitiveness center to form the IMD World Digital Competitiveness Rankings. It assesses the degree of the economy's ability to study and implement digital technologies. In particular, consider the criteria that are directly related to a person, namely «Digital/ Technological skills» and «Educational assessment PISA – Math».

Figure 1 shows that in the countries where digital skills are less developed, the ability of young people to think and therefore potentially develop turns out to be a high pain.

Thus, Singapore ranked twelfth place on the criterion of «Digital/Technological skills» leads by the criterion «Educational assessment PISA - Math».

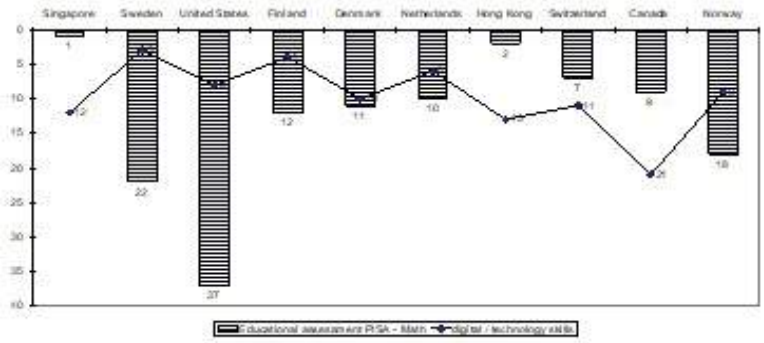

Fig. 2. Criterias of the sub-factor «Talent» for Top 10 countries in World digital competitiveness ranking [8]

The United States taking the eighth position in the rating of digital skills were on the 37th place on educational achievements of young people. Hong Kong becoming

the 2nd in the rating on the evaluation of education occupies only the 13th position in terms of digital skills.

This trend is not unique to the 10 countries of the Digital Competitiveness Ranking. there is similar ratio of the values of these criteria for the majority of other countries assessed by IMD

An effective human capital management system allows to significantly increase the competitiveness of any enterprise. For subjects of intellectual business, it actually h capital, the most influential factor in the growth of their market value.

The formation of human potential is a responsible process of managing intellectual resources of subjects of intellectual business as a source for the replenishment of human capital. Its effective use is a key factor in their successful operation.

The development of intellectual business facilitates the intellectualization of enterprises and the development of intellectually-oriented entrepreneurship, which together will ensure the development of a knowledge-based economy.

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FEATURES OF HUMAN CAPITAL MANAGEMENT IN THE ACHIEVEMENT OF ENERGY GOALS

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In order to accelerate the development of the energy sector of Ukraine, it is necessary not only to switch to innovative technologies, use the latest technologies in the industry, renewable energy, but at the same time to develop human capital.

According to the notion of interpretation, «human capital» is «a determining factor in the economic post-industrial development, the accumulation of social capital of societies, which positively affects human development» (Shangina, 2016).

The application of a socio-professional criterion as a basic one is complicated by the existence in Ukraine of two relatively separate systems of public assessment of socio-cultural potential of employees (private, public). In them, the level of income, the idea of their social status, lifestyle, those who have a similar vocational qualification, are very different. The non-state-owned energy sector, experiencing the urgent need for qualified specialists, is ready to pay higher wages. The state sector (as before) carries the imprint of «equalization», a nihilistic attitude to intellectual work, and so on. Therefore, there is a stratification of specialists on layers that differ significantly in their state. For example, among the highly-skilled professionals are employees of the managerial, economic and legal sector in the private sector, specialists in the scientific and technical field, employed in the fuel and energy complex and in other export industries (Shangina, 2016).

However, as the study showed, far from all the employees of the fuel and energy complex can be attributed to this category. This is especially the case for energy generating companies.

It is necessary to research, further use of international practices on the application of cooperation between universities, the energy business sector, and the development of joint curricula (Negro, 2017).

Given the integration of Ukraine's energy sector into European and world economic spaces, Ukrainian officials are faced with completely new issues that require urgent and effective solutions. A separate place among the newest issues is the participation of energy sector employers in the social protection of their employees. Therefore, the role of the social package for energy workers in the economic security of enterprises in the conditions of Ukraine's integration into the European and world economic space is the urgent issue.

The social responsibility of the Ukrainian power company to its employees should become a daily norm. That is why, in the context of integration into the European and world economy, the theme of developing a social package for workers is today relevant to both Ukrainian entrepreneurs and hired workers who are directly interested in developing social assistance, guarantees and other equally important components of the social package.

As shown by our analysis of published materials problems of «society-business» relations earned considerable attention. In domestic and foreign economic science, this issue is covered by the works of such scholars as Aliyev I., Aplin O., Antonyuk Y., Armstrong M., Gorobets N., Dreval O., Libanova E., Lokteva N., Polishchuk I. and others.

The benefits of the social package for workers (including the energy industry) are covered in the works of Arsenyev A., Babinina L., Belyaev O., Bilyavsky V., Vinokurova E., Melnyk S., Novak I., Stogok L. and others.

The problems of forming a social package from the point of view of corporate management and corporate responsibility are studied by such economists as Bajra L., Butko M. Murashko M., Evtushevsky V., Kolesnikov G., Koppek V., Kuzmin O., Melnyk O., Nazarenko V., Tsiganenko V., Tsimbalyuk S., Shostak I. and others.

However, despite the in-depth analysis of the essence of the social package for employees, the problem of developing a competitive social package at Ukrainian energy companies remains dimmed by the lack of coverage, informing about the benefits of social packages of potential employees, etc.

As shown by the analysis of European experience, social policy, the participation of partners (in particular, employers) in its construction have undergone significant transformational changes. At the same time, this led to the departure of an individual employer organization, moreover, a separate country. A supranational direction of social protection has been created.

Based on the analysis of published materials, we can conclude that social motivation is one of the potential types of material and moral motivation of workers in the world economy. It should include the provision of a social package. Competitive social policies point out that owners and management of enterprises should not only seek to maximize their own profits (only for their own benefit) but also to attach importance to the social provision of wage earners, the creation of decent working conditions, the preservation and enrichment of human capital, etc. That in the long run will contribute to the achievement of the strategic goals of

the organization, in particular, to maximize profits. Unfortunately, this is followed very weakly in Ukraine. The vast majority of enterprises (their owners) want to instantly enrich themselves, not caring about the future of their enterprise, about human resources.

The emergence of a social package as one of the methods of motivating staff is due to many reasons, the key among which is the shortage of highly skilled workers in the labor market. In the world economy it is rather difficult not only to find the appropriate specialist, but also to keep it in this particular organization due to hard competition in the labor market. That is why, by establishing appropriate wages, additional incentives should be offered, which will help to retain the employee in the organization for a significant period of time (preferably for entire career) (Melnikova, 2014). In addition, achieving a stable position in the enterprise, the employer is not able to infinitely increase the level of wages, while the social package can be expanded with new components (Tyazhelnikova, 2005). This will help increase labor productivity and optimize the costs of managing human resources of the company, etc.

As for Ukraine, during the crisis management of most energy companies practically forgot about the needs of their employees. It does not pay attention to the fact that in the conditions of a sharp increase in prices for all, including vital goods, services (in particular, utilities), employees have a rather difficult time.

In the absence of any other components (other than mandatory, envisaged (approved) Ukrainian legislation), the social package, not paying attention to the needs of their own personnel management of Ukrainian enterprises faced with a significant level of outflow of the best professionals to other enterprises (including foreign), where these components are effectively used. Given the European integration of our state, the facilitation of movement between countries (the elimination of barriers, in particular, the simplification or complete abolition of visa regimes).

Competitive companies (especially foreign ones) effectively use additional components of the social package, familiarizing them with potential employees will be able to easily capture the best professionals to themselves. At the same time, the cost of the social package is not extremely high (the only thing that holds back virtually all owners and managers of Ukrainian enterprises is that it is necessary to finance all expenses for the social package only from the profit of the organization). And although the costs of the additional components of the social package are not very high, they will ultimately be able to bring significant effect (including economic) from the implementation of the enterprise.

But if you think strategically, then these extra social package costs are investing in the future of the company, in its human capital, which is vital for achieving strategic goals and, of course, the mission of the enterprise.

Therefore, for effective work in crisis economic conditions, Ukrainian enterprises need to focus on employees, as one of the main and most important

factors of the internal environment and a productive component of the Ukrainian economy as a whole. This will reduce the staff turnover and thereby increase the level of economic security of Ukrainian energy companies.

Even though there are already among Ukrainian employers those who are fully aware of the importance of social and other benefits (components of the social package) for forming long-term partnerships with their employees, this does not apply to the country's energy sector.

Based on the analysis of published materials, so far there are many thoughts in Ukraine, but there is no single notion that clearly defines the essence of the social package, there is no unity among economists and practitioners as to the structure, list of payments, which must form a social package for Ukrainian corporate employees.

We propose to define a social package for energy companies (although it may also be applied to other industries) as a motivational tool, through the compensation provided by the employer to its employees in accordance with the norms of the current Ukrainian legislation, as well as in order to stimulate the work and commitment of employees, as well as guarantee social protection in the future.

Increasing the level of attractiveness of the social package will allow Ukrainian enterprises to attract and retain more highly-qualified professionals, that is, there will be competition between enterprises-employers in the labor market not only in terms of wages, but also in terms of content, volume of social benefits, etc.

As the study of the world practice of creating social guarantees for employees, the development of the social package was carried out in several stages (Rapetyacka, 2010, Tyazhelnikova, 2005, Melnyk, Kuzmin, Panaesko, 2012).

At the beginning of the 1970s, the system «Cafeteria» began to operate, which envisaged the valuation of each kind of material goods; for each employee a certain amount of points is set and an independent definition of a set of material goods is established. In the 1980s, the system was oriented on family values, in the 1990s, a system for optimizing the workplace, and in the 20th century, the lifelong guidance system was used as the most effective method of encouraging and retaining employees.

In order to improve the existing system of employee motivation in Ukraine, first of all, it is necessary to determine the baseline for the development, implementation and provision of a social package for employees of energy companies and organizations.

After setting goals and defining the baseline for developing, implementing and providing a social package, it is expedient to analyze the components of this package.

The conducted studies have shown (Tsimbalyuk, 2013) that the core elements (according to the hierarchy of importance for employees) are as follows:

1) medical insurance (health insurance) of the worker (full or partial reimbursement of treatment costs);

2) full or partial payment of training of an employee in higher educational

establishments;

3) payment for training of the employee at advanced training courses;

4) full or partial payment of food for workers during the working day (breakfast, lunch, dinner) in the company's dining room or the use of catering;

5) reimburesement of leisure travels for the employee and his/her family members;

6) providing with free of charge or discounted accommodation rental options;

7) preferential prices for products (for example, electric power), etc.

Ensuring an acceptable social package will allow the employer to achieve the following goals: to create a positive image (including as an employer in the labor market), to reconcile the strategic goals of the organization with the personal goals of employees, to increase the level of productivity and commitment of employees, to optimize the costs of personnel management and social compensation (not including the mandatory), improve the socio-psychological climate, improve the quality of work and the safety of the organization as a whole (including the economic first).

To sum up, it should be noted that Ukrainian business will sooner or later also be forced to move to civilized relations with its own employees. That is to develop a line of behavior in accordance with the adopted in a civilized world. And for this to happen, it's necessary to develop a strategy today. We are invited to introduce a competitive social package by Ukrainian employers taking into account the factors of the environment.

In addition, achieving a stable position in the enterprise, the employer is not able to infinitely increase the level of wages, while the social package can be expanded and complement all new components. This will help increase labor productivity and optimize the costs of managing the personnel of the enterprise.

Regarding the further directions of the research, it is advisable to draw attention to the involvement of employees in the formation of the social package in order to select the main criteria for evaluating the effectiveness of the package and optimizing the proportion of its components.

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OPERABILITY OF COMPANIES PERFORMING PUBLIC FUNCTIONS IN HUNGARY, CZECH REPUBLIC, UKRAINE AND ROMANIA

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To secure the sustainable management of business companies owned by local government, it is inevitable that these firms manage the assets of the local-governments efficiently and follow the principles of business continuity management anytime. It means they must not get so heavily indebted that debts endanger their further operation. The local govenments and their companies are expected to provide high-quality public services and public assets for the society. In our study, we analyze some Hungarian, Czech, Ukrainian and Romanian companies owned by municipilaties in due consideration of the corresponding figures.

Companies owned by municipalities perform the vast majority of public tasks, therefore their existence is very important for the business management of local-governments. As far as their management is concerned, companies owned by municipalities are run as public law companies, but their business management is

highly influenced and determined by the local-government owning them and the corresponding legislative provisions (Hegedűs – Zéman, 2016). If budget income and expenditures are efficiently synchronized, it can be assumed that the business management of these companies complies with the accounting principles (Lentner, 2017). In terms of national economy, it is indispensible that objective business management information are available about business participants running their business according to the budget procedure and their companies. These objective data give a fair view of the earnings, assets and financial position of business actors running their business according to the budget procedure and their companies (Lentner, 2014). Business participants conducting their business management according to the requirements of budgeting are obliged to carry out their business activities in compliance with the accounting principle of business continuity management because assets of local municipalities have to be considered as state properties and the companies in question perform their public tasks using the assets of municipalities (Lentner, 2013a; Lentner, 2013b). To secure the sustainable operation of local-governments and companies owned by them, it is necessary to establish an appropriate control system which enables to reduce risks related to the arising problems. Business operation of municipalities and their companies as well as the control system used by them determine asset groups financing, cost-effective operation, the corresponding design-analysis tasks and the support of decision-making (Zeman, 2017).

Material and method. When conducting the study, we analyzed the financial figures of Hungarian, Czech, Ukrainian and Romanian business companies owned by local-governments between 2014 and 2016. This research is based on the findings of the study conducted by Hegedűs (2016a, 2016b) where the capital structure and business management of business companies owned by municipalities were analyzed focusing on the period between 2010 and 2013. The main focus was on the business management and the operation of the companies as well as on the corresponding risks. Hegedűs came to the conclusion that the vast majority of risk factors are generated by profitability and capital structure issues. Consequently, it is not the liquidity that proves to be the most important risk factor. In this study, we also review the figures of Czech, Ukrainian and Romanian business companies owned by municipalities. We investigated liquidity and equity ratio of Hungarian, Czech, Ukrainian and Romanian companies owned by municipalities between 2014 and 2016.

Research findings.
Hungary

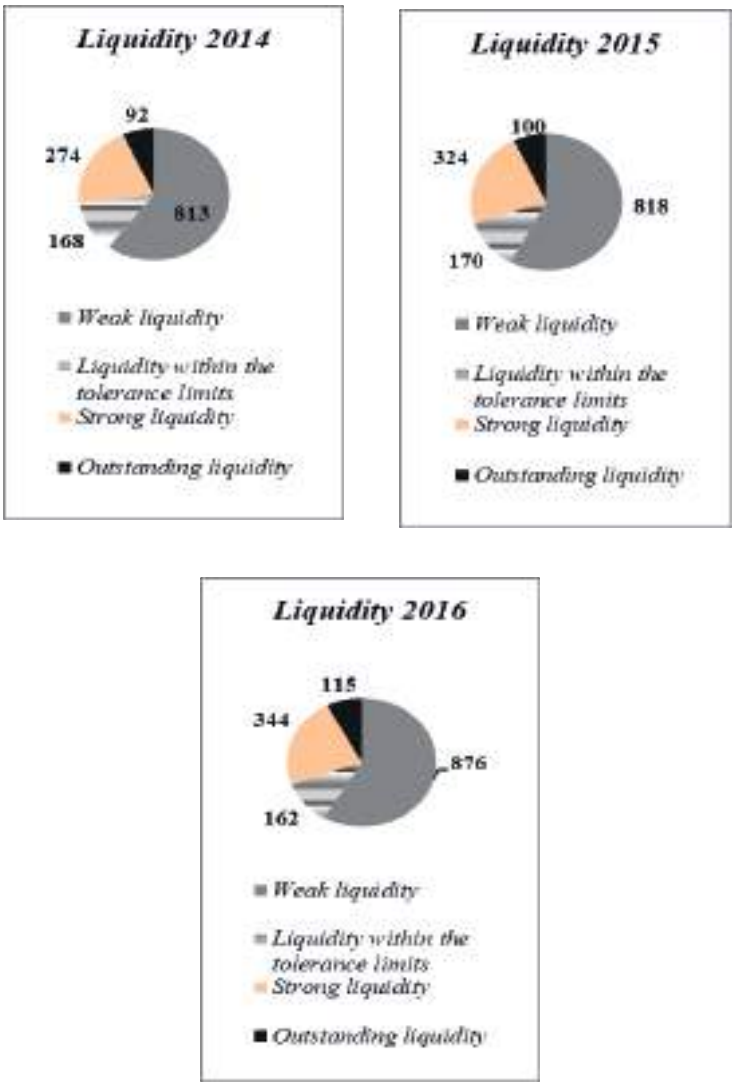

Fig. 1. Liquidity of Hungarian companies owned by municipalities between 2014 and 2016 (data in pcs)
Source: Own research according to SPSS output

In this study , we analyzed the liqudity of Hungarian companies owned by

municipalities between 2014 and 2016 (Figure 1). According to their liquidity, we divided companies into 4 groups. Companies have weak liquidity if their liquidity ratio does not reach the level of 1,3 which is acceptable according to the specialist literature. It means that the liquidity ratio is between 0 and 1,3. We assigned companies having a liquidity ratio between 1,31 and 1,8 to the group of firms with liquidity within the tolerance limits. When doing credit rating, credit institutes give especially high points to companies having a liquidity ratio of 1,8, therefore group 3 consists of companies with strong liquidity where liquidity ratio is between 1,81 and 5. Companies with a liquidity ratio of over 5, i. e. firms, which have considerably less short-term payables than current assets, were divided into the group of companies with outstanding liquidity. Of the 1701 companies examined 354 did not provide information about their liquidity ratio in 2014. In 2015, data of the liquidity ratio of 289 companies were not available. In 2016, 204 companies did not give information about their liquidity ratio. Figure 3 clearly shows that the vast majority of companies belong to the category of firms with weak liquidity. In 2014, the number of companies divided into the group of firms with weak liquidity was approximately the same as in 2015. The number of companies with weak liquidity increased in 2016. When you take a closer look at the other groups, you can see that this increment is not due to the fact that the liquidity of companies worsened because the number of companies of each group has risen, except for one group, but to the decreament of the number of companies in 2016 which did not provide any information of their liquidity ratio. Approximately the same number of companies was divided into the group of firms with liquidity within the tolerance limits in all three years. By 2016, there had been a slight increase in the number of companies with strong and outstanding liquidity. We have to highlight that this was not due to the liquidity enhancement, but to the fact that more data were available.

During the research, we divided the companies into 5 groups according to their equity ratio (Figure 2). The first group consists of companies that have negative equity. Companies with very low equity ratio (between 0 and 30%) belong to the second group. Companies with an equity ratio of between 31% and 50% belong to the firms with a low equity ratio. In the group with acceptable equity, there are companies with an equity ratio of between 51% and 70%. We qualified business companies with an equity ratio of between 71% and 100% as firms with a stable equity. Certainly like in the field of liquidity, there were companies the figures of which were not fully available. In 2014, in case of 397 companies, in 2015 in case of 286 firms and in 2016 in case of 198 companies, equity data were not available. In almost each group, we saw an increase in the number of companies in the years in question. Only in 2015, there was a backfall in the number of the companies with negative equity, but this number reached the level of 2014 in 2016. Equity values look better than liqudity values since we divided the vast majority of the reviewed enterprises into the group of companies with stable equity.

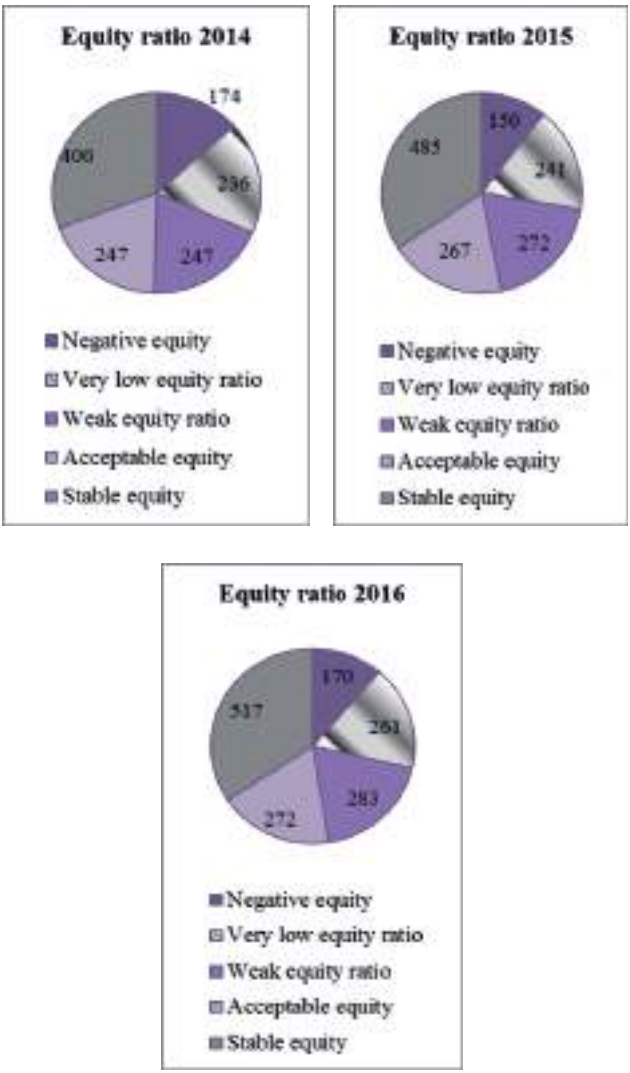

Fig. 2. Development of the equity ratio of Hungarian companies owned by municipalities between 2014 and 2016 (data in pcs)
Source: Own research according to the SPSS output

Czech Republic

The third figure shows the liquidity of enterprises in Czech Republic.

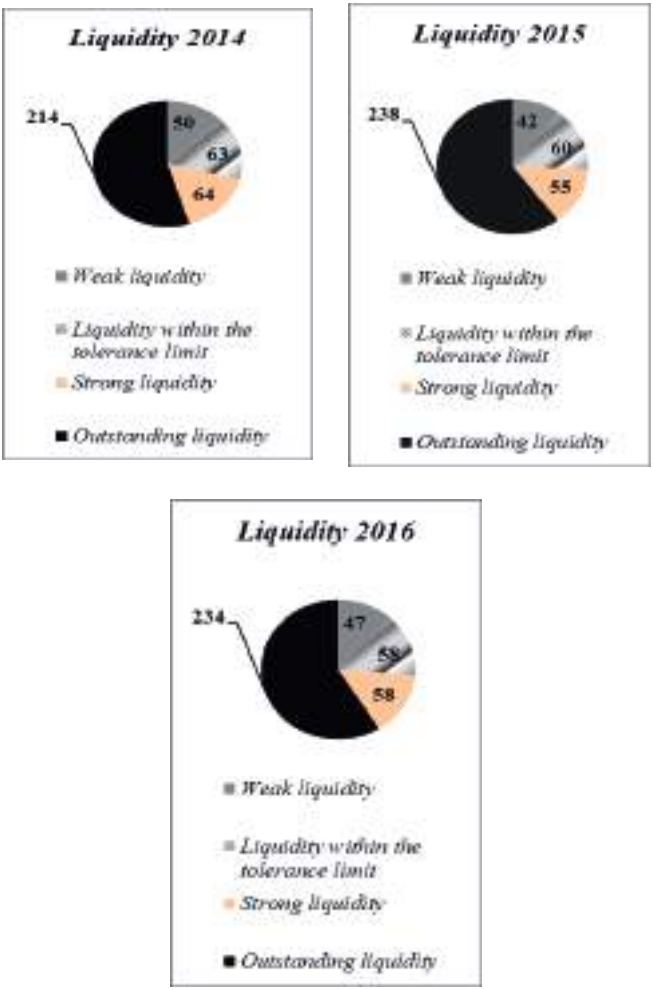

Fig. 3. Liquidity of Czech companies owned by municipalities between 2014 and 2016 (data in pcs)
Source: Own research according to SPSS output

During the analysis, the data of 426 enterprises performing public tasks were available for us. In the three years under investigation, by analyzing the liquidity ratios, we can say that more than 60% of the companies had a strong or outstanding liquidity, and it had not been changing over the years. Between 2014 and 2016, only 11-13% of companies could be considered having a weak liquidity (Figure 3).

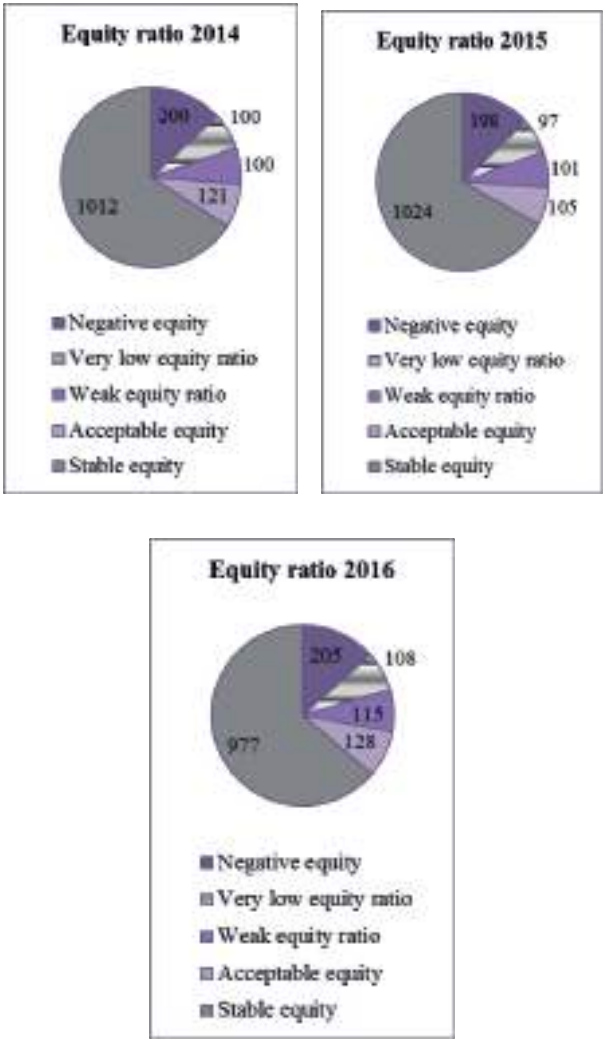

Fig. 4. Development of the equity of Czech companies owned by municipalities between 2014 and 2016 (data in pcs)
Source: own research according to the SPSS output

The situation is also favorable when it comes to capital structure (Figure 4), because 50% of the investigated companies are stable in equity and 20% of them have an acceptable equity ratio. Only 2-4% of the companies had negative equity in the three years under review. 22-25% of the companies had weak or very weak equity. Overall, between 2014 and 2016, there was no significant change in the

ratios of the enterprises.

Ukraine

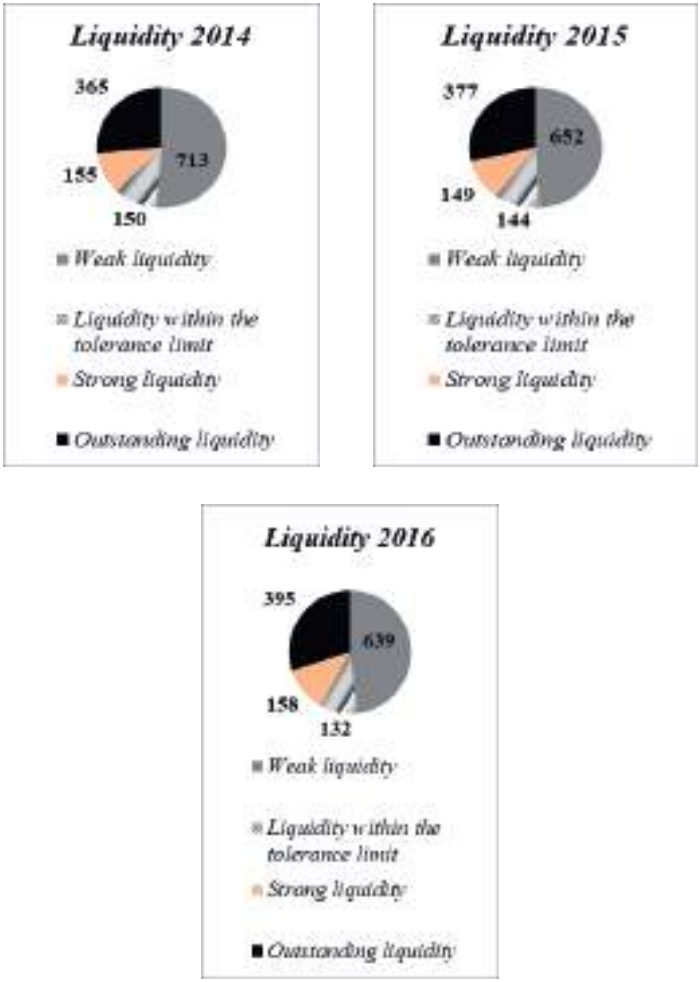

Fig. 5. Liquidity of Ukrainian companies owned by municipalities between 2014 and 2016 (data in pcs)
Source: Own research according to SPSS output

Almost 50% of Ukrainian corporates can be considered as weak in liquidity in 2014, and this value only had a minimal improvement in 2015 and 2016 (it achieved 48-49%). The number of companies with outstanding liquidity was growing in the analyzed period, while the proportion of companies with outstanding liquidity was

26,4%, and it was 29,8% in 2016. The proportion of companies with liquidity within tolerance was 10%, and the ones with strong ratio was 11% in every investigated years (Figure 5). All in all, it can be said that in the analyzed period the number of companies with strong and outstanding liquidity was growing, and the ones with weak liquidity was decreasing.

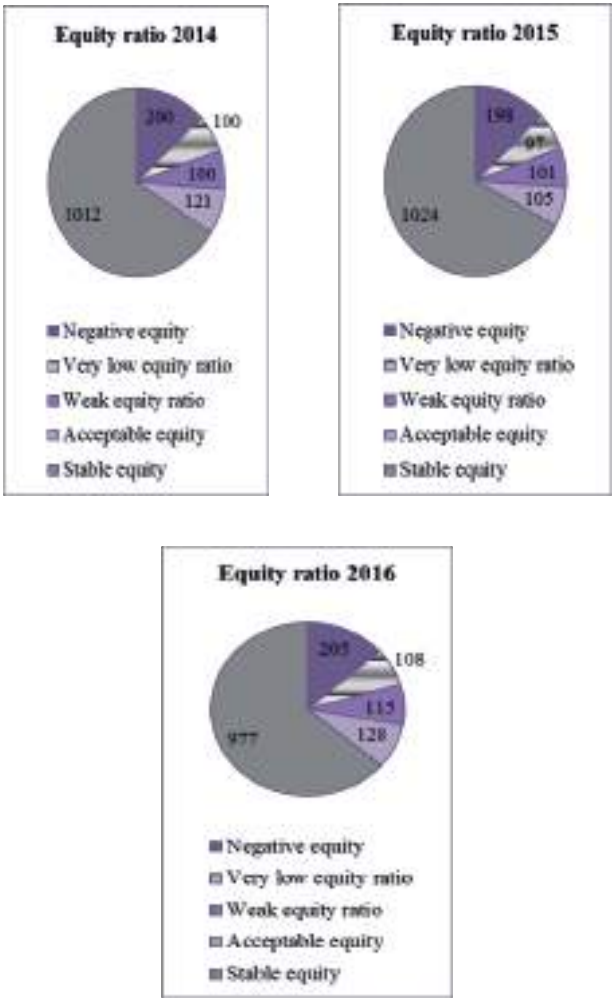

Fig. 6. Development of the equity of Ukrainian companies owned by municipalities between 2014 and 2016 (data in pcs)

Source: Own research according to the SPSS output

When it comes to equity, the picture is more favorable in case of Ukrainian

enterprises than the liquidity ratios (Figure 6). In the period of the investigation, the proportion of companies with stable capitalization was more than 60%. We cannot see significant change in this period, the proportion of companies with negative equity ratio was 13%, weak and very weak was 6-7%, and the proportion of acceptable ones was 7-8% in all of the three years.

Romania

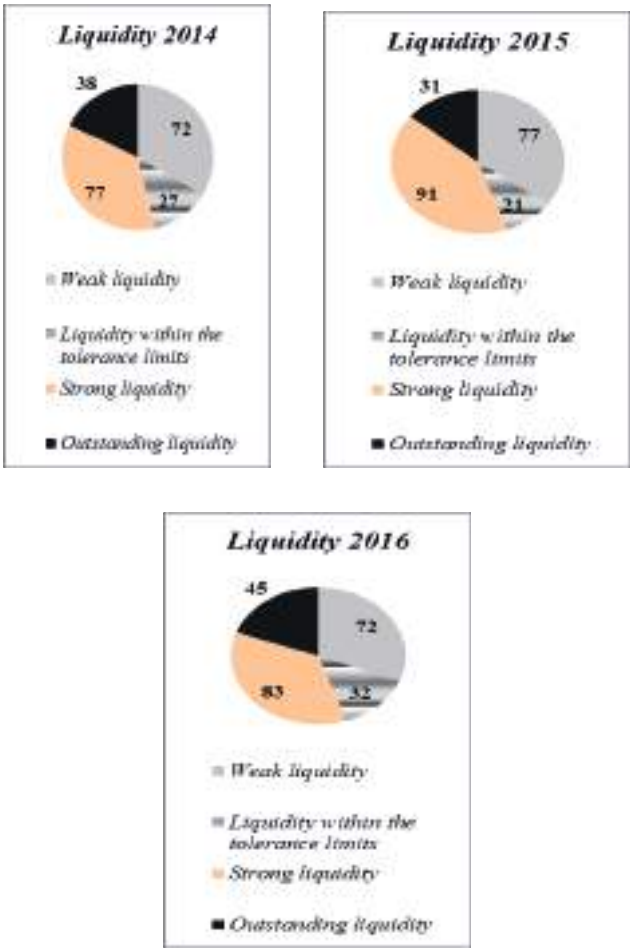

Fig. 7. Development of the liquidity ratio of Romanian business companies owned by municipalities between 2014 and 2016 (data in pcs)
Source: Own research according to the SPSS outputs

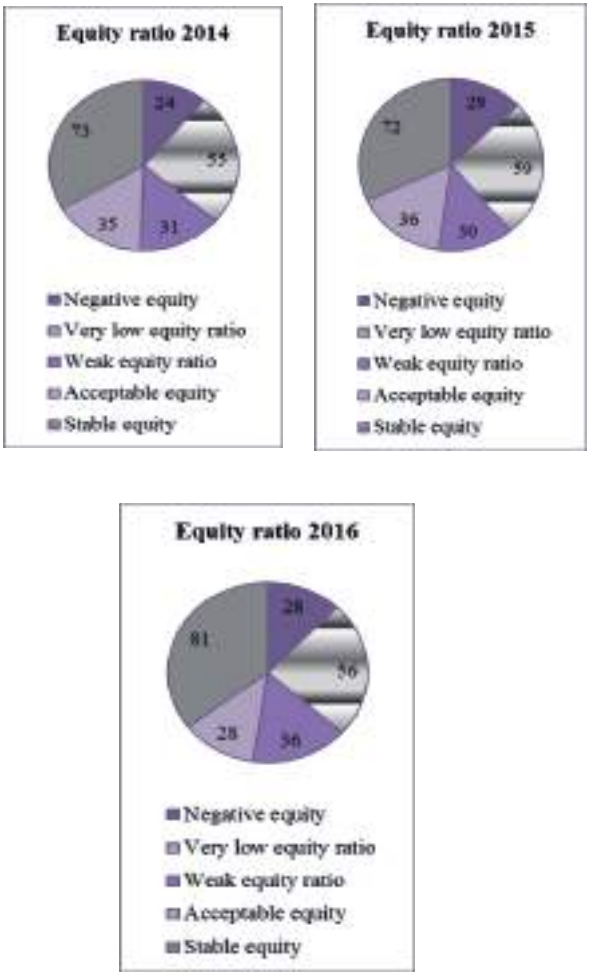

Fig. 8. Development of the equity of Romanian companies owned by municipalities between 2014 and 2016 (data in pcs)
Source: Own research according to the SPSS output

In Romania, there are considerably less companies (only 237 firms compared to the 1701 similar companies in Hungary and 1641 similar companies in Ukraine) which are owned by municipalities. The significant difference between the liquidity of Hungarian, Czech, Ukrainian and Romanian companies is that almost 50% of the reviewed Hungarian and Ukrainian companies were divided into the group of firms with weak liquidity while only 30% of the Romanian companies and Czech companies belonged to the group of the firms with weak liquidity in the reviewed

period (Figure 7). In each investigated period, the number of companies with strong liquidity was higher than the number of firms with weak liquidity. In the reviewed 3 years, we did not see a significant difference in the composition of the groups. All things considered, liquidity ratio developed better in Romanian and in Czech companies than in Hungarian and in Ukrainian companies.

Figure 8 shows the equity ratio development of Romanian companies owned by municipalities. If we take a closer look at how equity ratio developed in Romanian companies, we can not discover a significant difference compared to the Hungarian firms. In 2014, 38% of the Hungarian companies had an equity ratio of less than 50% and in 38% of them, equity ratio was higher than 50% (during the research, equity data were not available in 24% of the reviewed companies). By 2015, the only change that had occurred was that the number of enterprises with an equity ratio of over 50% rose to 44%. In 2016, 42% of the Hungarian companies had an euqity ratio under 50% and in 46% of the firms, equity ratio was higher than 50%. In 2014, 46% of the Romanian companies had an equity ratio of less than 50% and the proportion of companies with an equity ratio of more than 50% was also 46%. In 2015 and 2016, this ratio was 50-46%. All things considered, Romanian companies were not stronger than Hungarian firms, Czech companies and Ukrainian firms in terms of equity ratio.

Conclusions. In our study, we took a closer look at Hungarian, Czech, Ukrainian and Romanian figures of the business companies owned by local-governments. It is clearly recognizable that in order to improve efficiency, Hungarian and Ukrainian municipalities are more likely to assign their task of performing public tasks to the companies owned by them. The number of companies owned by municipalities proves it clearly because there are 1701 companies of this kind in Hungary, 1641 companies in Ukrainian, 426 firms in Czech Republic and 237 such firms in Romania. If we examine how equity ratio developed in the enterprises of the countries in question, we can not see a significant difference, only liquidity ratio is better in Romania and in Czech Republic. As far as Hungary and Ukraine are concerned, we can say that 47-51% of the companies owned by municipalities had weak liquidity in the reviewed period which endangers sustainable business management. In the reviewed 3 years, we did not see a significant difference in the equity ratio of the companies of the four countries.

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FUNDAMENTALS OF THE CORPORATE HEALTH MANAGEMENT

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In the current economic conditions it becomes quite evident that the problem of personnel efficiency and quality of performance in carrying out assigned responsibilities is gaining in importance. To date, most successful top managers have already realized that the ability to attract, develop, retain and use the full potential of employees is the determining factor for the success of any organization. In the process of human resource management, each manager comes to the understanding that the effectiveness of the work of the personnel depends not only on a correctly constructed system of motivation and rational organization of work of the employees and effective leadership, but also on the capabilities of each employee, in particular, his or her state of health. In this regard, the corporate health management, including a system of management activities aimed at ensuring and maintaining the physical and psychological health of personnel, is becoming especially popular.

It should be noted that in today's unstable and rapidly changing business environment, the management representatives of many domestic enterprises and organizations does not pay enough attention to the issues of health management of their subordinates. However, many years of experience of foreign and successful domestic companies proves that due to the formation of an effective system for managing the health of personnel, the top-level management representatives of modern enterprises can expect the obtaining of a positive economic effect, not only in the long-term period, but also in the short term, too. The health of employees is an area that equally interests both management team members and ordinary employees, so integration of efforts gives a pronounced effect.

The health management system of the modern enterprise can be described as follows (See Figure 1).

In general, the most important results of the successful implementation of corporate health management programs can be the following ones: the improvement of the behavior of employees in the workplace of an organization; decrease in the risk of morbidity of personnel; productivity growth; reduction of medical expenses of the enterprise; decrease in the number of requests for medical help to the doctors; decrease in the number of days of incapacity for work of the employees; high return on investment in employee health.

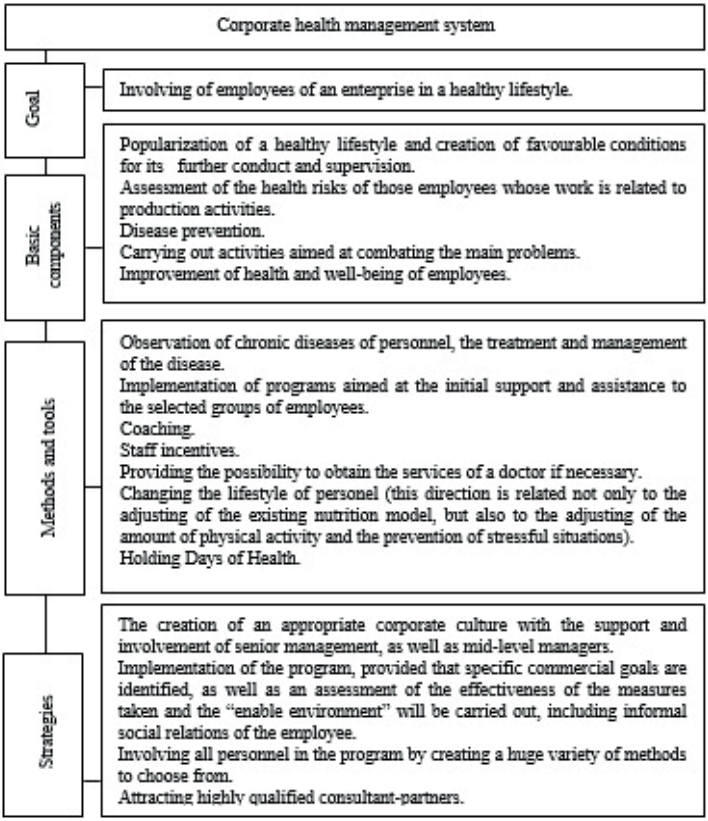

Fig. 1. Corporate health management system in an organization

During this study it was revealed that in the field of the revenue management the main results of an effectively functioning corporate health management system can be determined in the various ways. These are as follows: an increase in incomes due to the growth of labor productivity, work capacity and efficiency of employees of the enterprise; an increase in revenues by attracting more qualified personnel, as well as lower-qualified staff turnover and the decrease in the costs for professional adaptation of employees; an increase in incomes due to reducing stressful and conflict situations in the work collective, as well as an increase of the stress-resistance of employees and their loyalty to top-level management members of the enterprise; an increase in net profit of the enterprise, along with certain cost reduction strategies and the revenue growth; an increase in revenues due to improving the strong corporate image.

Table 1

Proposed topics of trainings (seminars and on-line courses) for employees of a modern enterprise

The topic name	Brief characteristics of the topics
1	2
Basics and practice of occupational health	The basic rules that employees must adhere to in order to work with greater efficiency and less fatigue
Primary practice of proper nutrition	Specific instructions about what exactly, how and when a person should eat to avoid not only chronic diseases, but also to increase the amount of energy and performance during the working day.
The fundamentals of preventing occupational diseases	Specific rules on how to avoid occupational chronic diseases, which are related to the relevant activity of employees.
Fundamentals of epidemiological safety	Clear instructions on how to behave during outbreaks of infectious diseases in order to avoid illness and reduce the number of days of temporary disability.
Basics and practice of preventive healthcare	Useful tips on how to apply the measures during the calendar year to reduce the risk of infectious and chronic diseases.
Fitness basics	Recommendations for those physical exercises and physical activities that should be performed to reduce morbidity and to increase the amount of energy, efficiency and performance.
Fundamentals and practice of psychological health in the work collective	The rules on how to deal with stress during the working day to save the personal energy and efficiency, and how to interact with the collective members in a certain way that does not affect the total effectiveness of work.
The practice of combating tobacco and alcoholism	Useful tips on how to overcome the harmful habits in order to reduce the total number of “smoke breaks” during the working day, as well as to reduce the days of incapacity for work because of the harmful effects of alcohol.

In the context of this study, we can argue that the management of corporate health basically involves training staff to take care of their own health, while forming a cohesive team with a high level of self-management.

In our opinion, managing health programs and projects at a certain enterprise should be different for the managers of all levels of management and their subordinates, because of the different specificities of employment.

That is why depending on the approved structure, the educational program for staff development may include theoretical and practical classes in one or more subjects (See Table 1).

In order to manage personnel effectively, the manager must first learn how to manage himself. At the same time, the life of a modern manager is accompanied by constant stressful situations that arise against the backdrop of physical, psycho-emotional and intellectual burden. Irregular nutrition, irregular working day and a

sedentary lifestyle create the ground for diseases and their progression to chronic conditions.

The educational program of corporate health management, developed especially for senior managers of any modern organization, enables not only to improve their physical health, but also contributes to creating conditions for overcoming their own weaknesses and ultimately brings great pleasure, thereby contributing to the strengthening of psychological health. Training programs for top managers and middle-level managers can have the following focus areas (See Table 2).

Table 2

Proposed topics of trainings (seminars and on-line courses) for top-managers and middle-level managers of a modern organization

The topic name	Brief characteristics of the topics
Individual coaching for a healthy lifestyle	Specific rules on how managers can save youth and energy, increase efficiency and productivity of their work for many years through the use of integrated healthy lifestyle techniques.
VIP on food intake	On the basis of the results of a special biochemical analysis, it is possible to obtain specific recommendations for adjusting nutrition to prevent chronic diseases, to increase energy, to reduce fatigue, and, finally, to increase a personal efficiency.
Stress reduction	Useful tips on how to get rid of mental and physical overstrain during the working day and after it is over, and also on how to work without any stresses or strains put on them.
Training in physiological time management	Within the framework of this unique program, the fundamentals of time management are adapted to the individual characteristics of the organisms of the persons, who are the heads of the organizations. At the same time the most effective and productive scheme of working activity can be proposed if needed.
Basics and practice of a healthy restoring sleep	How to restore strength and energy per one night only for the next full-time working day, as well as for the right management decision-making and increasing personal effectiveness.
Relaxation techniques	The given topic is related to the practical mastering of relaxation techniques, error analysis, training and correction processes.

In addition to the theoretical and practical training of managers for a healthy lifestyle, sport plays an important role in health management. Sports activities for a manager are not only rivalry and overcoming his own boundaries. Equally important is the influence of sport on the development of communicative competences. In many foreign companies, the time employees spend together on treadmills or cycling machines is much more popular than the traditional meetings with a cup of coffee and a cigarette. Meeting on the golf course is an ideal opportunity to learn about potential partners, clients and colleagues. This game contributes to concentration of attention and at the same time relaxes and relieves tension.

In the world of sports and business there is a common denominator – a model of

leadership. Work with subordinates can be compared to work in a sports team. The role of the coach in the team corresponds to the role of manager in the company. Such a model of management suggests the need to reduce the distance between the boss and the workers and establish a deeper relationship, which can develop in various ways.

This in turn is possible only if there are qualities of the real leader (See Figure 2). Being a leader means being yourself and thoroughly knowing yourself. As a rule, people want to follow a strong personality, not an executor of a role, an official representative of any organization or a bureaucrat.

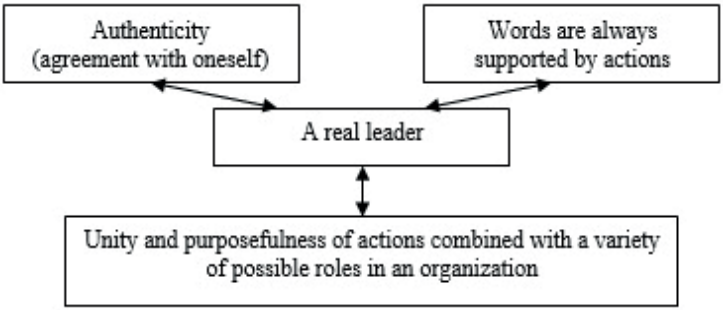

Fig. 2. Personal qualities of a real leader in an organization

In this context, we consider it necessary to emphasize that the qualities of a real leader are first, innate, and secondly, educated and developed, through daily work on themselves and an effective self-management. The development of leadership qualities and self-improvement is greatly facilitated in the presence of strong physical and, especially, psychological health of a person. In a modern, unstable external environment, there is often an increase in the instability of the mental performance of the manager, which affects not only his / her mental and intellectual abilities, but also his general physical condition and behaviour.

In medicine, in particular in the prescriptions for the use of certain sedatives, there is a “manager syndrome”. So the principle of adaptability, which is appropriate to apply is an important aspect of the development of managerial potential, taking into account the main achievements of management psychology [1, p. 103].

The term “manager syndrome” has been used by doctors since 1984, referring to such manifestations as angina pectoris, increased anxiety, overweight and problems in family relationships, which are considered to be typical for managers of all levels of management in the modern organizations [2, p. 121]. Scientists claim that half of all causes of coronary heart disease are related to the psychological risk factors, which are determined by the way of life and the emotional response of the patient to different stressful situations [3, p. 34].

M. Friedman and R. Rozeman in their scientific works emphesized the need to distinguish between two possible types of human behavior. The first one, which is called as "type A", is characterized by impatience, haste, workaholism, perfectionism and rivalry, while the second type, also known as the type "B", is characterized by life satisfaction and stress-resistance of a person. When considering the results of analysis of various issues of health formation for future managers, A.N. Bolshakova came to the conclusion that a large number of students demonstrate either a developed behavior of type "A", or a tendency to develop it in the future (a mixed type of "A-B") during the period of study in institutions of higher education [3, p. 35]. In addition, according to N.V. Ivanenko, representatives of game kinds of sports (such as volleyball, table tennis, basketball and football) always demonstrate their sociability, goodwill, openness to communication, and collectivism to the society. The development of perseverance, patience, observation and purposefulness are the main characteristics for athletes, single tennis players and swimmers. Students who are engaged in general physical training, sports aerobics, shaping, a high level of self-organization, discipline, independence and critical thinking prevails [2, p. 122].

The aforementioned facts provide the basis for the need to promote healthy lifestyles, emphasizing the attention of future managers, even during their studies at the university, to the exceptional importance of good physical fitness for both personal and professional development. After graduation from any higher education establishment they will need to further develop and implement their own programs of corporate health management.

All the tools used to support the manager's culture can be divided into traditional (gym, swimming, walrus) and modern ones. Among modern tools for supporting the culture of the manager, it is necessary to highlight, first of all, the smart watches, which are popular among the young people. Working more often as an addition to an ordinary smartphone, smart watches can be used as a heart rate monitor, pedometer, and even a tonometer. Due to these useful options, smart watches have a controlling function, which is important in the context of self-management skills development.

The most popular gadget that can be used as a tool for developing the physical culture of a manager is a smartphone. With its help it is convenient not only to successfully solve various professional tasks, but also to maintain a healthy lifestyle as a whole. For example, it is possible to set alerts about the need for exercise, eating or medication routine. Among the mobile applications that can be used to maintain a good psychophysiological condition, it is necessary to pay special attention to those that can visualize fitness classes and help to make an optimal diet. Downloading and listening to relaxing music can reduce internal tension, distract from problems, calm down and get inspiration for new professional achievements.

The thing that yesterday seemed to all of us a real fantasy only, today is the newest technical device, and tomorrow it will certainly become a significant element of a person's daily life. Thus, for example, Israeli scientists at the "Rambam Medical Center" have developed an electrostimulation device that can be placed

on the arm and hidden under clothing. The device, which is known as the "Nerivio Migra", contains a computer chip, battery and rubber electrodes that are attached to the shoulder. The system provides several modes of electrostimulation, which the patient can adjust by using a mobile application. A special popularity among professional sportsmen and sports fans is gradually acquired by so-called "smart" clothing, capable of measuring the heart rhythm of a person. In addition to this, it is possible to receive information about whether the wearer of this clothing is suffering from heartbeat delay. Also, if it is necessary to provide medical assistance to a person, the mobile application can send some messages about this to other persons (relatives, the doctor, the personal trainer etc.).

In the modern world companies are implementing disease prevention programs. Many business entities not only successfully organize and manage various medical examinations and psychological seminars, but also create the amazing recreation and nutrition areas. It turns quite slowly, but this practice is introduced in Ukrainian enterprises too. Thus, in order to occupy leading positions in the team, to be an authority and an example for imitation by subordinates, to manage more and to cope with psycho-emotional stresses, any successful manager of the modern enterprise needs to maintain a good physical shape. At the same time, we should use a wide range of traditional tools and not abandon the latest information technologies, which in recent decades are firmly rooted in our personal and professional life.

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INTELLECTUAL CAPITAL MANAGEMENT STRATEGY IN ORGANIZATION

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At the present stage of economic development, the success of a company depends on the level of its intellectual capacity, which is determined by the efficient usage of intellectual capital as one of the main resources of modern enterprises. In addition, the development and intake of intellectual capital are inextricably linked to the information flows in the process of information exchange among the various elements of business management systems, as well as to the interaction of the company with its environment.

The specific feature of intellectual capital management is manifested in the fact that it is a product of intellectual activity and creative efforts. Information and knowledge are in its core. Knowledge can be defined as the information stock obtained in the course of training, research and by other means; this is in privacy of a person, company, and society as a whole. Intellectual capital can be expressed in monetary terms by determining the cost of intangible assets of the company, its product innovation. The ability to form the intellectual capital defines the intellectual potential of the company, and the knowledge appears as a result of the intellectual potential.

It has already been proved that the intellectual resource is the basis of socio-economic development at the macro level and enterprise levels. In the process of its formation, public information sources are used, and as a result of creative intellectual work an innovative resource is created that promotes the innovative state development [1; 2].

In a wider sense, intellectual resource is a resource of development, that is, both real and potential ability of a country to support the intellectual and innovation level in all spheres of activity - science, education, politics, business, and culture. Success and progressive development will always be the countries where the optimum proportions between creative abilities of the person and other resources will be ensured [3].

It is known that the concept of «intellectual resource» arose from the observation of the activities of high-tech companies (knowledge companies) operating in highly developed countries. Professor at the University of Berkeley (UK) David Teece and Swedish scholars Karl Eric Sveiby and Anders Risling became the founders of the research. The first started the study of profiting from innovations (Profitingfrom

Tecnological Innovation), and the second one - management knowledge [4].

The intellectual capital of the company is considered as a set of knowledge of human capital and its own intellectual information (knowledge) of the company, which can be converted into cost based on socio-economic results to participate in creating unique competitive advantages of the company [5, p.270].

Table 1

Approaches to Intellectual Capital Structure

Author	Classification
Skandia (1995)	Human capital. Structural capital. Customer capital. Organizational capital. Process capital. Innovation capital. Intellectual property. Intangible assets
Edvinsson, Malone (1997)	Human capital. Structural capital. Customer capital
Bontis (1998)	Human capital. Structural capital. Relational capital
Stewart (1997)	Human capital. Structural capital. Customer capital
Saint-Onge (1996)	Human capital. Structural capital. Relational capital
Sveiby (1997)	Personnel competences. Internal structure. External structure
Van Buren (1999)	Human capital. Innovative capital. Process capital. Customer capital
Roos et al. (1998)	Human capital. Structural capital. Relational capital
O'Donnell and O'Regan (2000)	People. Internal structure. External structure

Source: [5, p.273; 6; 7, p.266; 8;]

Today's best strategic thinkers are those who are strategically "bilingual" – able to think in terms of strategies that ensure the optimal, effective leveraging of the traditional tangible assets, and simultaneously the highly differentiated strategic deployment of the new intangible intellectual capital assets.

Progressive managers consider intellectual capital management and knowledge management to be vital for sustained viability. Recent practices support this notion and have provided important approaches and tools.

Intellectual capital focuses on renewing and maximizing the enterprise-wide value of intellectual assets. Knowledge management supports intellectual capital management by focusing on detailed systematic, explicit processes and overlap and synergy between. Intellectual capital management and knowledge management, and advanced enterprises pursue deliberate strategies to coordinate and exploit them. They create balanced intellectual capital portfolios that they implement with knowledge management approaches and tools. Progressive managers have recognized that the enterprise's viability depends directly on [9, p. 399]:

1. the competitive quality of its knowledge-based intellectual-capital and assets; and

2. the successful application of these assets in its operational activities to realize

their value to fulfill the enterprise's objectives. There is considerable overlap in the scope of intellectual capital management and knowledge management.

There are, however, major differences between their foci and perspectives, and this is not an artificial distinction. Intellectual capital management (ICM) focuses on building and governing intellectual assets from strategic and enterprise governance perspectives with some focus on tactics. Its function is to take overall care of the enterprise's intellectual capital.

Knowledge management (KM) has tactical and operational perspectives. KM is more detailed and focuses on facilitating and managing knowledge-related activities such as creation, capture, transformation and use. Its function is to plan, implement, operate and monitor all the knowledge-related activities and programs required for effective intellectual capital management. In particular, the two initiatives complement each other in addition to having important overlaps. As discussed later, they need to be closely integrated to prevent conflicts and to maximize effectiveness. Now let consider the process of ICM strategy selection (fig. 1).

The first step is Monitoring of the marketing environment. To spot trends and other signals that conditions may be in flux, marketers must continually monitor the environment in which their companies operate.

Next step – determination of the key priorities of company – means what goals have to be achieved. These goals might have already been strategically planned by CEOs (Chief Executive Officers).

After it, our key issues of ICM should be determined. It can be increase in profits, knowledge development, design of innovations, the formation of a positive image, increase market share, access to new markets, and so on.

According to these tasks, strategy selection occurs, taking into account the existing level of intellectual capital. Then we need to estimate IC assets. This may be accomplished by using different methods, for example, K.E. Sveiby's approach that distinguishes 25 methods, subdivided into four categories. These methods include qualitative and quantitative assessment [11].

It is important on this stage to identify unrealized opportunities, videlicet intellectual potential. If the company has it, it should be realized in strategies.

Strategy implementation is phased process. It is necessary to adopt the system used for the intellectual capital management of the organization on this stage. This system defines: what departments will be responsible for what, and what information systems are needed to monitor the implementation of the strategy, what retraining of employees will be required, etc.

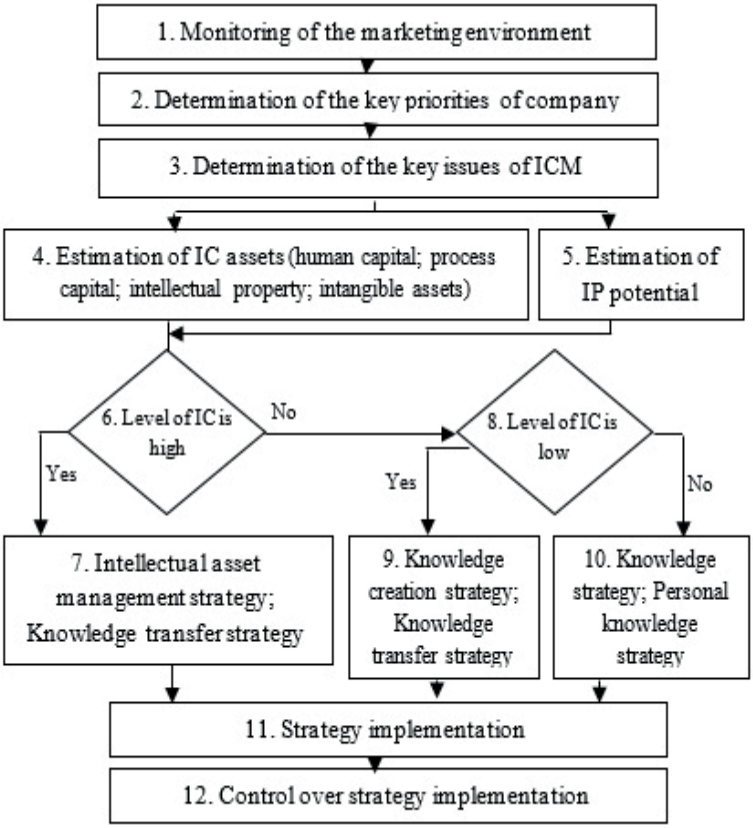

Fig. 1. The algorithm of selection of intellectual capital management strategy

And the last one, but not the least, is the control and strategy revision. The main objectives of ICM control as follows: definition of what parameters and how to check; assessment of the state of the controlled object in accordance with accepted standards, regulations or other benchmarks; elucidation of the causes of deviations, if any are be opened as a result of the assessment; implementing adjustments, if it is necessary and possible. By managing intellectual assets and knowledge appropriately, the employees, and the enterprise as a whole, will be in position to act intelligently-the basic requirements for sustained competitiveness, success, and viability.

Karl Wiig highlighted five basic knowledge-centered strategies (table 2):

Table 2

Types of intellectual capital management strategies

№	Strategy	Description
1	Knowledge strategy	as business strategy emphasizes knowledge creation, capture, organization, renewal, sharing, and use in all plans, operations, and detailed activities to provide the best possible knowledge available at each point of action.
2	Intellectual asset management strategy	emphasizes enterprise-level management of specific intellectual assets such as patents, technologies, operational and management practices, customer relations, organizational arrangements, and other structural knowledge assets. Management's task is to renew, organize, evaluate, protect and increase the availability and marketing of these assets.
3	Personal knowledge strategy	emphasizes personal responsibility for knowledge-related investments, innovations and competitiveness, renewal, effective use and availability to others of knowledge assets within each employee's area of accountability. The objectives are continually to build knowledge and to apply the most competitive knowledge to the enterprise's work.
4	Knowledge creation strategy	emphasizes organizational learning, basic and applied research and development, and motivation of employees to innovate and capture lessons learned to obtain new and better knowledge, which will provide improved competitiveness.
5	Knowledge transfer strategy	emphasizes systematic approaches to transfer (i.e. obtain, organize, restructure, warehouse or memorize, repackage for deployment and distribute) knowledge to points of action where it will be used to perform work. This strategy includes knowledge sharing and adopting best practices.

Source: [9, p. 400]

To pursue these strategies, organizations undertake specific programs and activities, provide supporting infrastructure capabilities, and sometimes create incentives to motivate individual employees, teams, and even departments and business units to cooperate with the new objectives.

A central pillar in the strategic management of human capital is the alignment of human capital strategies with agency mission, goals, and objectives through analysis, planning, investment, and management of human capital programs. Human capital planning is the method by which an agency designs a coherent framework of human capital policies, programs, and practices to achieve a shared vision integrated with the agency's strategic plan. Implementation of the strategic human capital plan is a key step in an agency's progress to build a highly effective, performance-based organization by recruiting, acquiring, motivating, and rewarding a high-performing, top quality workforce. The plan becomes the roadmap for continuous improvement and the framework for transforming the culture and operations of the agency.

Although the structure, content, and format of strategic human capital plans will vary by agency, there are certain common elements that should be included in a strategic human capital plan.

The following are five essential components of these strategies.

Table 3

Essential components of intellectual capital management strategies

№	Component	Component description
1	Clarity in Human Capital Goals	It is critical to understand the gap between an organization's current state and its desired state. This can help to develop human capital goals that would not only increase employees' overall efficiency, but also make them feel more attached on a closer level to the organization. Some examples of human capital goals include retaining dedicated and hardworking employees, continuously develop skills of the workforce, developing realistic induction programs for new hires, and only hiring the very best talent in the pool.
2	Clarity in Direction	This important component involves understanding an organization from the inside out. To do this, companies must collect data from employees, customers, and stakeholders to understand their expectations and needs. Discussing these issues will help define the entire vision of a company and its team. An effective analysis may involve analyzing current employees' as well as where they see themselves and the company two years down the road. This type of analysis can help organizations pinpoint any flaws or gaps in the system.
3	An Accountability System	No plan or process is successful until and unless it is managed well. It is critical to keep track of progress. An accountability system involves measuring the failure and success of an implemented plan. It also helps organizations to analyze the loopholes in the plan, if applicable, as well as ways to rectify the same.
4	A Foolproof Implementation Plan	An implementation plan includes the steps and actions required to implement human capital strategies. Successful implementation plans include allocating a responsible resource, allocating budgets, and setting a deadline or time frame for implementing the human capital plans. As is the case throughout each component of an human capital management plan, clarity is key. Create an implementation plan that clearly demonstrates the strategy and goal.
5	Strategies and Policies to Accomplish Objectives and Goals	Once an organization has set objectives and goals, it can design policies and strategies to achieve them. Human resource professionals must design long-term plans to ensure their employees are happy with their jobs. Satisfied employees are more likely to deliver their best, thus increasing the likelihood of a success.

Source: [10]

Human capital planning helps a company to design human capital policies, programs, and strategies to increase employee efficiency and help them to accomplish the already-defined objectives and goals of the organization. Implementation of the

human capital management plan helps to ensure that human resources professionals are hiring the right candidates, training them in the most effective way possible, managing them as employees, upgrading their skills when necessary, and retaining them as employees [11].

So, Intellectual capital, and knowledge are the most important assets of most enterprises – and managers are starting to realize it. These assets represent the enterprise's future potential. Intellectual capital elements appear in many forms. Consequently, there are numerous approaches to building and embedding these assets for further use and to capitalize on their value for the benefit of the enterprise. In all these situations, however, it is crucial to ascertain that the assets are used as intended-and particularly that they do not become 'dead assets'. In most instances, ascertaining sustained renewal and profitable use requires implementing supportive infrastructure capabilities and very importantly, targeted motivators and incentives. Only when these capabilities are in place will the enterprise capitalize effectively on its knowledge resources. Stimulation of knowledge economy development requires a special state approach. The algorithm of selection of intellectual capital management strategy can help CEOs to choose the optimal strategy and effectively leverage their intellectual capital. Further areas of research are the mechanisms of reproduction of intellectual capital.

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THE ROLE OF QUALITY OF ADMINISTRATIVE SERVICES IN THE MODERN HIGHER EDUCATION OF UKRAINE

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Higher educational institutions enter the market of educational services with their specific product – an educational product. If the educational product in the form of educational goods is clear, this is the educational material (textbooks, manuals, monographs, video discs, etc.) that have typical characteristics of the ordinary product, then how is the educational product offered in the form of knowledge, skills, experience students? This needs explanation due to the presence of important features.

Educational product in the form of knowledge, skills, experience is transmitted in the learning process by way of providing services (lectures, courses, seminars, events). Therefore, it should be borne in mind that the services, according to F. Kotler, are characterized by four characteristic features: insensitivity, inseparability from the source, inconsistency of quality, non-storage [1].

With regard to educational services, these four characteristics are explained in the scientific literature as follows:

- services can not be received by any perception channel until the moment

of purchase. To persuade a customer to purchase services, manufacturers seek to formalize the most important parameters for the buyer services and submit them as clearly as possible. Educational plans and programs are used in education; information on the methods, forms and conditions of service provision; certificates, licenses, diplomas;

- the service is inseparable from its source, its implementation is possible only in the presence of producers (teachers), providing them. Any change of teacher can change the process and the result of providing an educational service, and, consequently, change the demand for services. The peculiarity of educational services is that the process of their consumption coincides with the process of their provision. In addition, the very technology of providing educational services involves active interaction with their consumer-student;

- the quality of services depends on their producers, as well as on the time and place of their provision. This is primarily due to their inseparability from actors, as well as the impossibility and inadvertentness of setting strict standards for the processes and results of service delivery. The lack of quality of educational services has one more reason: the difference between consumers, that is, students;

- the service can not be stored for further sale or use. For educational services, first of all, this means the inability to prepare services in advance and store them as a material product in anticipation of an increase in demand.

The content of the educational product has a significant impact on the entire educational process, all its stages and all the processes associated with its activities: preparatory, creative, organizational, controlling, social, economic and educational.

The genesis of the educational product goes through several stages. Based on the division proposed in [2] we identified the following stages of creating an educational product:

The first stage - preparatory: definition of the needs of the labor market, society; choice of social partners; development of a strategic and tactical plan of action.

The second stage - at this stage, most of the educational services that lead to the creation of an educational product are provided.

The third stage is the stage of social verification of product quality:

- quality assurance through state licensing and accreditation of educational programs;

- participation in the ratings of higher education institutions;

- Accounting and analysis of the demand of graduates in the labor market;

- annual analysis of the competition for each specialty as a feedback to the community.

One of the important properties of an educational product is its dependence on technology and the organization of the educational process. The technology includes methodical techniques, means of control, communication as a mechanism of processes that create a favorable or unfavorable environment [1, 2], but the quality of premises, logistical facilities, adjoining territory, sanitary and safety indicators

are also of no less importance.

At this stage, at universities, the requirements for competence, professional skills, ability to study and develop, creative thinking, and ability to work in a team considerably increase, which serves as a guarantee of ensuring the required level of quality of implementation of processes. For the economically developed countries of the world, deep interpenetration of methods of personnel development and quality management systems is characteristic. This is especially true for services, in particular, in higher education.

Classification for analyzing the quality of work with students of the administrative vertical of the university - as a service business can be presented in the following form: Effectiveness is characterized by the quality of acquired skills and knowledge and the possibility of employment after obtaining a diploma.

Timeliness / timeliness is a total indicator of the timeliness and timeliness of the implementation of all operations that one way or another provide the educational process.

The accessibility indicator implies:

- the territorial approximation of the educational institution to the recipients of services (in Ukraine, students prefer to study in cities, although in other countries the university is often away from metropolitan areas);

- availability of transport links, index signs, access roads and parking places for vehicles;

- the possibility of receiving methodological materials, consultations, forms, forms, certificates, etc. via the internet.

The convenience indicator characterizes how interests and needs of recipients of services are taken into account. This indicator includes:

- the possibility of choosing a method of applying for consultation or administrative service to the dean's office or other departments of higher educational institutions (in person, by post, telephone, via the Internet);

- for the maximum number of problems introducing the principle of a «one-stop shop»;

- Establishment of departments of higher educational establishments for student admission schedules taking into account their interests;

- convenient forms of payment for educational services, preferably in the premises of the main building of the university;

Openness - free access to the necessary information related to admission to the university, the registration of all current documents that the student is engaged in during the training period. Information should be placed on convenient benches, sometimes in booklets and on the Internet.

In addition to ease of access to information, openness provides anti-corruption and personal bias of service providers in universities. In addition, it provides:

- availability of information regarding the procedure for providing the service, a list of documents for obtaining it with samples;

- clear information for the consumer about the persons responsible for providing one or another service;

- the possibility of receiving information by phone and e-mail, obtaining qualified advisory services on various issues.

Respect for the person - a polite attitude towards the recipient of educational services at all levels, provides:

- The readiness of the educational institution staff to assist in the preparation of documents;

- observance of the principle of equality of all citizens, employees of all levels of an educational institution should be equally friendly to all recipients of educational services;

- the same tasks and problems of recipients of educational services should be resolved in the same way, in the same time, with the same requirements, etc;

- provision of household amenities in an educational institution.

Professionalism - proper level of qualification of employees of an educational institution.

Fair value - a provider of educational services should not be misled; the value of each educational service must be established on the basis of the size of the actual costs of its provision and the mark-up (net income of the educational institution) in the common sense; it is logical to take into account the time for which the recipient of education will be able to «return» as a salary for this profession the money spent on its acquisition. This also includes the validity of the composition of education, the list of competencies, the correspondence of the curriculum for each specialty to the needs of the recipient of educational services, taking into account the economic situation in a particular country.

Today, in Europe and in the world, the importance of the role of auxiliary staff in higher education institutions is recognized. Thus, according to research [4], students' satisfaction with the quality of university administrative services determines 5.6 and 4.1 percent of their behavioral intentions to go to another university and recommend their university, respectively.

In Australia there is a site for independent anonymous assessment of universities according to various indicators by students [5]. Of course, one can not neglect the fact that any Internet voting can be «broken» by hackers; it is also known as a «winding up» of keynotes or dislikes. Nevertheless, considering these factors, such electronic resources seem to us to be very useful and relatively inexpensive in implementation, so we recommend the introduction of this method of assessing education in Ukraine.

On tabl. 1. We have placed two different ratings from this site, which characterize the availability of support staff and teachers outside the official schedule of classes (during working hours). For staff, the question was: «Is it easy to find university administrative staff and are they useful? (1 = difficult to access and / or not help, 5 = easy access and very useful) «. For the teaching staff: «Are teachers available when

you need them? (1 = rarely available, 5 = easily accessible) «. The number of voting participants is shown in brackets.

Table 1

Comparison of Australian University ratings on the availability and usefulness of auxiliary staff and the availability of teachers outside the classroom

Accessibility / utility of auxiliary staff		Faculty availability	
University	**Rating**	**University**	**Rating**
Bond University	4.04(192)	Bond University	4.58(192)
University of Wollongong	3.91(175)	University of Notre Dame	4.30 (63)
Flinders University	3.86 (90)	University of New England	4.26 (135)
University of Ballarat	3.84 (44)	University of Wollongong	4.13 (175)
University of Notre Dame	3.79 (62)	University of Ballarat	4.07 (45)
University of New England	3.77 (134)	Flinders University	3.99 (90)
University of South Australia	3.73 (75)	Australian National University	3.98 (197)
Monash University	3.73 (219)	Swinburne University of Technology	3.97 (227)
Edith Cowan University	3.68(136)	Monash University	3.96(226)
University of Western Australia	3.67 (99)	University of Western Australia	3.95 (102)
Swinburne University of Technology	3.63(227)	University of Sydney	3.92(101)
Southern Cross University	3.61 (83)	University of Melbourne	3.85(165)
Macquarie University	3.61(210)	Murdoch University	3.85(169)
Griffith University	3.61(208)	Deakin University	3.84(218)
University of Technology, Sydney	3.60(182)	University of Canberra	3.83(113)
University of New South Wales	3.60 (178)	Edith Cowan University	3.83 (138)
University of Queensland	3.59(122)	La Trobe University	3.82(243)
Australian National University	3.59 (193)	University of Southern Queensland	3.81 (102)
University of Sydney	3.58(100)	Curtin University of Technology	3.81(124)
University of Southern Queensland	3.57 (102)	University of Adelaide	3.80 (79)
Curtin University of Technology	3.51 (122)	Macquarie University	3.78 (216)
University of Adelaide	3.47 (78)	James Cook University	3.77 (74)
Deakin University	3.47(215)	University of Tasmania	3.76(123)
James Cook University	3.46 (74)	Griffith University	3.75(213)
Murdoch University	3.45 (167)	University of Queensland	3.74 (123)
University of Newcastle	3.44 (111)	University of Technology, Sydney	3.74 (184)

University of Melbourne	3.41(161)	University of the Sunshine Coast	3.70 (73)
La Trobe University	3.37(235)	University of New South Wales	3.66 (180)
Central Queensland University	3.37 (121)	Southern Cross University	3.65 (85)
University of Tasmania	3.36(121)	Australian Catholic University (ACU National)	3.62 (210)
University of Canberra	3.35(112)	University of South Australia	3.61 (76)
Australian Catholic University (ACU National)	3.29 (207)	University of Western Sydney	3.58 (212)
University of Western Sydney	3.27 (210)	University of Newcastle	3.54 (111)
University of the Sunshine Coast	3.24 (75)	Central Queensland University	3.54 (121)
Queensland University of Technology	3.04 (132)	Victoria University	3.34 (112)
RMIT University	3.03(232)	RMIT University	3.33(237)
Victoria University	2.97 (110)	Charles Darwin Univ	3.25 (53)
Charles Darwin University	2.79 (52)	Queensland University of Technology	3.18 (133)
Charles Sturt University	2.73 (264)	Charles Sturt University	2.90 (269)
Open Universities Australia (OUA)	2.18 (11)	Open Universities Australia (OUA)	1.83 (12)

It is possible to notice that universities occupy different places in the ranking according to these indicators, but the assessment of the activities of the auxiliary and teaching staff is almost the same: according to our estimates, the average assessment of the availability / usefulness of staff is 3.46, and the average assessment of the availability of teaching staff is 3.72.

In our opinion, it is better to divide the indicators of availability and utility of staff by interviewing because it should be revealed why it is considered less accessible, although it does not visit the couple, that is, it is in the workplace all day. It is possible that the availability of staff is higher than teachers, and in particular, the usefulness determines the rating result.

It should be noted that, in a broad sense, an excellent university is not just that having the characteristics of an excellent service provider. For example, the excellent provision of environmental education does not guarantee that the streets will be clean if citizens continue to throw garbage on the streets. It may be necessary to raise appropriate civic behavior at home for children in order to create a clean environment for citizens. In other words, the improvement of quality also requires responsible civil society. As a result, qualitative indicators should be directed not only to assess the quality of services provided by individual organizations, but also to the service system and overall quality of life in a particular region. In addition, university administration should not only increase student satisfaction with

education, but also increase trust in higher education through transparent processes, accountability and feedback.

To ensure the quality of education, clear, coordinated work of all departments of the educational institution and strict compliance with discipline by students, teachers and all employees is necessary.

The quality of the administrative verticals of the university has an impact on the choice of university students and affects the reputation of the university as a whole. The indicators of the quality of the work of the auxiliary departments of the university should be studied in the context of the development of representations about administrative services in general.

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PHILOSOPHICAL AND EDUCATIONAL FOUNDATIONS OF THE PERSONALITY DEVELOPMENT OF THE HIGHER SCHOOL TEACHER IN THE 21st CENTURY

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The article deals with the theoretical and culturological foundations of the personality development of the higher school teacher in the 21st century. The personality of the scholar-teacher is formed depending on the historical types of societies – closed or open, in which the atmosphere of creativity, democracy and free will dominates. The personality of a modern educator is characterized by the embodiment of professionalism, the talent of a researcher and the bearer of spiritual and cultural historical traditions.

Relevance of the research. The processes of reforming of the higher education in Ukraine are determined by the in-depth study and practical application of the latest advanced pedagogical technologies, deep understanding of the historical and culturological traditions of the formation of a national higher school and solving contemporary problems of integration into the European educational space. The most important component of the educational process is the study of the formation of the teacher's personality as a mentor of a youth and of a scientist-researcher. This is a task of the modern philosophy of education, which is capable to develop the ideological and methodological support of the model of the higher school teacher in the 21st century.

It is the philosophy of education that has to determine theoretical and culturological principles, development trends and the goal, in its broadest sense of a modern education, the essence of the free creative activity of a higher school teacher, which combines professional competence, talent of a scholar and a high culture of communication. The formation of a teacher's personality is largely determined by the level of openness and the degree of democracy development in society. Personality development of the higher school teacher depends on the general educational goal, scientific and theoretical foundations, the development of spiritual culture, which directly influences the formation of a holistic worldview.

The state of theme research. From the historical view of the formation of the philosophy of education, it is important to analyze the classical model of the higher education development and the place in it of the creative personality of a teacher with

a theoretical and cultural expression in the philosophy of I. Kant, I. Fichte, G. Hegel and V. von Humboldt. The classical idea of the university determined the principles of personality development throughout the 19th century. But in the conditions of growth of technics, technology and globalization processes of the 20th century the approach to using tools and the ultimate goal of the higher education radically changes. The principles of constant creativity, education throughout the human life and the continuous process of professional self-improvement are confirmed. This problem is the subject of sharp discussions of philosophers, sociologists, psychologists, and teachers, in particular, reflected in the works of eminent thinkers of the 20th century J. Ortega y Gasset, K. Jaspers, H.-G. Gadamer, K. Popper, J. Habermas, J. Derrida. In the modern Ukrainian philosophy of education, the philosophical and methodological aspects of the formation of a higher school teacher are the subject of the researches by Ukrainian scientists – V. Andrushchenko, M. Zubrytska, S. Klepko, M. Kultaeva, V. Lutai, M. Mikhalchenko.

The purpose of the study is to determine the indirect influence of philosophical and culturological foundations on the development of a holistic personality model of the higher school teacher in the 21st century, which combines the talent of the integrator of scientific knowledge and the conductor of the ancient traditions of the national and world educational culture.

The idea of subordination of the educational system to the tasks of constant development of a personality is the main philosophical reforming setting of the modern higher education system. This will be possible when providing comprehensive human development is coordinated with the practical achievements of modern education, with training of specialists for creative activity based on the principles of freedom and creativity. The objective development of the reform in a modern education of Ukraine calls for a radical revision of the ideological and methodological principles of the substantiation of educational activity, placing it on the forefront of the personality development.

The processes of higher education reforming can not be temporary, fast-moving, but are carried out on an ongoing basis. Reasons for reform are more likely to apply not only to the content of educational activity, but above all to the totality of social relations of the corresponding type of development of social reality. In the historical context, the reforms in education occur almost in different cultural and political eras, almost in every century, depending on the adoption of common purpose, idea, construct of university education.

Reform is always a creation of a new order. As it was argued in the 30-ies of 20th century by the Spanish thinker J. Ortega y Gasset, the need for reform arises for two reasons: «either because of a violation in the direct sense of the word, that is, through isolated cases of misuse of good rules, or because abusive occasions occur so frequently or permanently, and become so ordinary or approved that they can not even be called misuses» [4, 68]. Yes, it is against the latter that the reforms should be directed. But the process of reform in higher education will be sufficient itself, it

will find practical expression and universal approval in the case of a firm definition of the mission, the idea of a high school institution – University.

Significant contribution to the process of reforming of the higher education in Western Europe is an affirmation of the idea of Building ʾa (formation), or the development of a harmonious personality as a learning goal in the creative work and practice of the founder of the University of Berlin V. von Humboldt at the beginning of the 19th century. The idea of higher education was based on the unity of the educational principles, scientific research and the achievements of national culture.

V. von Humboldt imagined the university as a place where both the professor and the student dedicate themselves to science; an important factor of constant personal development is an independent, creative process of communication. The main task of higher educational establishments is a rational combination of «objective science with subjective education» and the implementation of the principles of solitude and freedom as the general basis for the development of personalities that can influence the fate of the country.

D. Newman, a theoretician of English higher education, believes that it is precisely such an institution as the university that it is «the place of communication, the circulation of thought across the whole country», and the principle of mutual learning is «one of the most powerful, continuous processes of mankind», especially when it has a predetermined purpose [3, 37]. D. Newman proves the need for the educational process of such an important factor as the culture of open communication between a teacher and a student. «No book will pass the delicate nuances of your specialty as quickly and confidently as a living dialogue will make through the eyes, look, emphasis, manner» [3, 39]. The ancient Athens gave the student more philosophical knowledge and culture precisely via communication, and not via reading and mastering wisdom from books.

Scientific authority was of great importance in the education in Ancient Greece, for example, the presence of Plato. «Even if the student didn't see anything, except Plato, who breathed and moved, didn't attend any lecture, he would still had received some measure of education and had something to tell grandchildren» [3, 61]. Genius and talent were the main criteria for selecting teachers in the Platonic Academy. The professor is «the home of wisdom, the light of the world, the messenger of faith, the alma mater of the young generation» [3, 44]. D. Newman further states that university education is characterized with a comprehensive study of truth, «a powerful intellectual diversity», the rule of intellect exclusively.

The revolutionary step in the entire history of educational activity was the «ingenious turn», begun by the French scientist J.-J. Rousseau and the Swiss teacher J. Pestalozzi. As it is known in the studying process – and generally in education – there are three components: the content of learning, or knowledge; the one who teaches, or a teacher; and the one who studies, or a student. The novation of J.-J. Rousseau and his followers were to move the emphasis of pedagogical attention in the direction from the knowledge itself and the teacher to the student and in

determining that a student is the only one that can point us the way to the realization of the educational goal.

The principles of openness in higher education historically combine professionalism, the ability to research and the culture of inner spiritual communication. Culture, according to J. Ortega y Gasset, should save mankind from a life catastrophe, «it allows a person to live in such a way that his/her life wouldn't become a senseless tragedy or he/she wouldn't grow unsociable» [4, 76]. In modern conditions, the catastrophic nature of the European situation in education is that «ordinary Englishman, ordinary Frenchman, ordinary German are ignorant people, they don't have a vital system of conceptions, relevant to time, about the world and man». Such an average character is «a new barbarian, retarded from the point of view of his era, archaic and primitive». But the «new barbarian» is, first and foremost, a professional, although «more ignorant» [4, 76].

Paradox is the fact that in the 21st century graduates of universities, having a lot of knowledge on only one subject, have no idea of the rest of scientific knowledge. Such result, as clarified by the Spanish philosopher, is the result of fragmentation, deconstructivism, which increasingly characterizes the «European man». According to J. Ortega y Gasset, it is necessary to stop the processes of differentiation and shredding of a scientific work, to cultivate and to form «integrative talents» – this is the fate of the progressive development of scientific knowledge.

When selecting the teaching staff of the institution of higher education, the talent of integrator and teaching talent will be influential above all things. The systematic unity of professional studies and cultural-oriented disciplines should prevail in the structure of the curricula for the training of specialists. The Spanish thinker proves the need for a thorough development of the methodology of higher education, which should complement the professional specialization of training specialists with «integral culture». In the presence of hypertrophy of the means of study, the atrophy of a given goal of university education remains. Therefore, according to J. Ortega y Gasset, «it is necessary to establish the science of education with its methods and guidelines» [4, 86].

Rather interesting philosophical view of the philosopher about the duration of scientific discoveries, their practical application and their perception by the broad educational society is the hypothetical statement that the best professors would live in the atmosphere of fifteen or twenty years ago. «Tragic backwardness» is inherent in anyone who doesn't seek self-improvement, doesn't create his or her own beliefs, and doesn't try to be original. The first generation, «radiating its spirit», creates meaningful values, leading ideas. Those who succeed this creative heritage have to wait until certain completeness and testing of the results of the scientific search are carried out. At the next stage of scientific development, «the forces of the predecessors will begin to weaken», and the new generation will «make its reform». Every generation, says the thinker, for fifteen years «fights for the implementation of their principles in life and for fifteen years they are valid» [4, 71]. Thus, the

process of forming of the integral personality has an infinite character, as well as the process of self-improvement of the mentor, the teacher, the manager of higher education.

The fall of university studies begins when it becomes mandatory to attend certain lectures, practical classes and general training regulations. «At this destructive path for the University together with freedom of studying, the life of the spirit is suppressed» – the creator of the philosophy of existentialism in the 20th century K. Jaspers warned. Curricula should correspond to «proposals that don't restrict the free progress of the student, but help with clarifications and the opportunity of choice» [7, 125].

The truth in philosophy has a distinct personal character, and scientific activity is always open and incomplete. Studying at the university can not be dogmatized, defined by the general scheme, it always has an individual form. The lesson, «oriented to the average general», is not at all like a lesson that is aimed at individual gifted personalities.

K. Jaspers, in order to consolidate his thoughts, gives the words of E. Rohde, that «ninety-nine of hundred listeners don't understand the lecturer, but a hundredth doesn't need him» [7, 124]. The student is usually not able to understand fully the contents and instructions of the lecturer, but he has the incentive, working intensively, to approach the personally-individual perception of the educational material and the appearance of new ideas. Personality of a lecturer is characterized by special individual features. The lecturer tries to make a transparent process of his thinking, his integrity and influence on listeners. The principles of autonomy and freedom of individual creative search are the goal of the formation of specialists in higher education.

The German philosopher is repeated by the author of a well-known work, «Open Society and its Enemies», K. Popper. The teacher should not impose his «measure of higher values to the disciples», but he must try to «stir their interest in these values. He must take care of the souls of his students». The general principle of education should be unquestionable trust and the principle – «don't do harm to students». «Do not hurt», that is, «give young people what they are in urgent need in order to become independent of us and able to make their own choices» [5, 300]. Independence and freedom are the highest values that contribute to the formation of independent ideological attitudes of the personality.

The difference, according to K. Jaspers, between the spiritually noble and spiritually non-liberal individual is as follows: the first one constantly thinks about his business and spends on it all his forces, and the second one always requires the separation of work and leisure. Aristocrat is inherent in selfless work, because simple labor seems to him spiritual laziness, which slowly exhausts creative forces. Therefore, true spiritual life, education, scientific search are carried out where there is a possibility of free realization of the unity of personality's creative efforts. The problem of creative freedom embraces various aspects of the individual's activity,

and in particular the professor of higher education.

Summing up, it should be noted that the process of forming of a model of a higher school teacher in the 21st century is based on the historical principle of educational activities. They are determined by the general development of national cultural traditions, the systemacy of natural and humanitarian researches, and embodies the necessary principles of integration as the basis of the overall goal of university education.

The formation of a teacher depends not only on the development of modern pedagogical technologies and psychological support, but above all on a certain type of society – closed or open and the level of development of democracy, creativity, and freedom of choice. This is the meaning of the ideological and methodological definition of the modern philosophy of education.

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ENTERPRENEURSHIP TRAINING: PEDAGOGICAL MANAGEMENT AS A MECHANISM FOR ESTABLISHMENT OF ADAPTIVE EDUCATIONAL ENVIRONMENT IN HIGHER EDUCATION INSTITUTION

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Ensuring the competitiveness of Ukraine in the global market for goods and services requires multifunctional, mobile high-skilled workers with leadership and entrepreneurial qualities, communication skills and teamwork. The domestic educational system, with numerous undeniable achievements and accomplishments, nowadays needs to be substantially updated in line with the needs of social development (Analytical report, 2017, p. 428) [1].

The relevance of young people's entrepreneurship training is due to the importance played by small and medium-sized businesses in the state's economy. It is well known that entrepreneurship is an integral attribute of a market economy, it influences the creation of new jobs, stimulates the business activity of the population, promotes the development of the middle class, is an essential lever of the entire national production of the state.

The problem of entrepreneurship development in Ukraine contains a wide range of theoretical and practical issues that are covered in various areas of scientific research: economic (U. Vatamaniuk-Zelinska [2], V. Heiets [3], Z. Varnalii [3],), managerial (N. Heorhiadi [4], I. Markina [5]), legal (R. Bank [6], M. Kozachuk [7], Yu. Krehul [6]), sociological (Yu. Pachkovskyi [8]), educational (O. Vahonova [9], O. Romanovskyi [10]).

It should be noted that each scientific intelligence examines the identity of the entrepreneur at different angles, while all studies are combined by understanding of the special role of entrepreneurship in the economic development of the state and objectively are of great importance for the modeling of the educational environment and the creation of appropriate pedagogical conditions in the process

of entrepreneurship training.

In the pedagogy, the problem of forming the readiness of future specialists for various types of professional activity has always been a great deal of attention, but in the last decade it has become strategically important as a result of Ukraine's accession to the Bologna Process. This is, in particular, the introduction of a European experience of professional practical training for future specialists, which involves the implementation of a competent approach in teaching and the formation of a new system of diagnostic tools that will evaluate the knowledge and skills of a graduate of an institution of higher education, but competencies and competence.

In the European project TUNING it was proposed that "... the concept of competence includes knowledge and understanding (theoretical knowledge of the academic industry, ability to know and understand), knowledge of how to act (practical and operational application of knowledge to specific situations), knowledge of being (values as inalienable part of the way of perception and life with others in a social context)" [11]. By the national qualifications framework, the term competence is defined as the ability of a person to perform a particular type of activity, expressed through knowledge, understanding, skills, values, and other personal qualities [12].

In the context of mentioned above, during the period of entrepreneurship training, the educational environment in the university should be designed in such a way as to provide students with individual trajectories of learning. Individualization provides the learner with an adaptive path that appeals to his/her level, needs, expectations, personal rhythm and his way of learning [13, 14].

Based on the analysis of western experience, the authors believe that the quality of the educational process and the learning outcomes depend on the ability of the higher the educational institution to provide an adaptive learning environment.

A characteristic feature of modern society is its human-centrist orientation, according to which the most important indicator of progress is the individual development of personality: his/her abilities, thinking, satisfaction of cognitive queries and needs, the provision of rights and freedoms, etc. This is also fully relevant to the educational system, that, through a set of pedagogical conditions, is intended to develop the personal qualities of future specialists, which will facilitate their successful socialization and adaptation outside the educational institution.

Modern educational process should be innovative and manageable, and the basis of the concerted efforts of the teaching staff of higher education institution should be the image of the future specialist in its unity and integrity.

The system of requirements for future entrepreneurs is stipulated by:

- ideological and socio-economic realities (Ukraine's entry into the European educational, scientific, economic and innovation space; development of the entrepreneurial sector of economy; need of society, production and business for skilled specialists);
- processes taking place in the professional environment (ensuring fair

competition in entrepreneurship; social and environmental orientation of economy; stimulating the scientific, technical and innovative activities of small businesses; encouraging the development of the export potential of the country);

- changes in educational policy (transition to a two-level training on the state educational standards of a new generation; the development of a strategic partnership of higher educational institutions with science, production, business, involving universities in solving the problems of regional development).

We are close to the idea of Yu. Pachkovskyi (2004) [8], who notes that entrepreneurship has a great potential, which, first of all, is related to the creative nature of a human being whose disclosure depends on the creation for all its proper political and economic development by society, ideological, socio-economic, socio-cultural and socio-psychological conditions.

We should note that searching the answers to the question of why and how to teach future entrepreneurs nowadays enhances the aspiration of scientists to comprehend the integral pedagogical process from the standpoint of the management science and to give it a scientifically substantiated character.

According to the concept of pedagogical systems, developed by N. Kuzmina (1980) [15], the pedagogical system consists of the following structural elements:

- the purpose as the most important element of any pedagogical system that determines the fact of its creation;
- educational information intended to be the subject of learning by subjects of study;
- means of pedagogical communication, with the help of which the activity of students is organized on the learning of educational information based on the goals of the pedagogical system;
- students are a certain contingent of people who need some training, education or upbringing;
- teachers who meet the goals of the system and have the training information, means of communication, are armed with psychological knowledge about the subject of pedagogical influence;
- the result is knowledge, abilities, skills, formed in the student before the end of the system's lifetime, that is, before the release.

The result, or the level of success of the system, can be considered a criterion for the effectiveness of its activities.

It is known that the traditional notion of managing the educational process is revealed in such characteristics as the purposeful influence of the subject on the object of management; the influence of the control system on the managed system in order to transfer the latter into a qualitatively new state; introduction of elements of the scientific organization of pedagogical work, etc.

Today, the philosophy of "influence" in pedagogical management is gradually changing by the philosophy of "interaction", "cooperation", "reflexive management", which leads to the emergence of pedagogical management new

theory, which is characterized by a humanistic view of the essence of professional specialist personality formation.

The basic idea of pedagogical management is that the teacher becomes the organizer, adviser, "coach, and not mentor" in the process of training, upbringing and developing the personality of a future specialist. The use of the theory of pedagogical management allows us to move from the vertical control system (subject-object) to the horizontal system of organizational-managerial cooperation (subject-subject), which provides students with an equal opportunity to interact with the teacher.

From the standpoint of pedagogical management, entrepreneurship education includes the following stages:

- definition of the system of requirements for entrepreneurs; allocation of factors influencing on the formation process of graduates' readiness for entrepreneurial activity;
- system of methodological principles' identification of organization of educational and cognitive activity, which provide didactic support for the process of training future entrepreneurs;
- substantiation of organizational and pedagogical conditions that facilitate the process of formation of readiness of graduates for entrepreneurial activity;
- definition of criteria and indicators of graduates' professional readiness for entrepreneurship.

Analysis of scientific research gives us the reason to assert that entrepreneurship training is a logical, purposeful, multicomponent, multifunctional and dynamic process, which today requires not only the introduction of a competent approach to learning, but also the mandatory organization of the subject-subject management of pedagogical process. At the same time, not only the content of education, but also the educational environment of higher educational institutions, the organization of educational process, educational technologies, including the independent work of students play an important role in the training of future specialists in entrepreneurship.

The question of how the learning process should be organized in order to be most useful for preparing future specialists for entrepreneurship is actively discussed in scientific sources and during scientific and practical conferences. Scientists appeal to historical sources, they study the domestic and foreign experience of the university, factors and conditions for the formation of motives of students' professional growth; and all of them agree that nowadays higher education institution is designed to form not only the carrier of certain knowledge, but also a creative person who can use the knowledge gained for competitive purposeful activity in any sphere of public life.

Consequently, the management of the process of students' professional training needs to take into account a set of factors that can affect the student, and as a consequence, the learning outcomes. These factors are often associated with the personality features of the student; with the educational environment of the

university; with the management of the process of professional adaptation of future entrepreneurs (Table 1).

Table 1

Factors influencing the process of future entrepreneurs training

Factors related to the personality features of the student	Factors related to the educational environment of higher education institution	Factors related to managing the process of professional adaptation
General education and the initial level of competence	Contents of the educational program	Monitoring of the process of students' adaptation to the educational and professional environment
Psychological readiness for educational activities	The complexity of the educational program and the schedule of classes	Involvement of students in scientific and innovative activities
Individual's ability to self-development and self-education	Type of interactions like "teacher-student", "student-student"	Implementation of educational and organizational innovations
Skills of independent work	Resource provision	"Higher education institution is a labor market (Enterprise)" form of interaction
Cognitive abilities	Forms of training	Work of employment services
Motives, interest in profession	Teachers' qualification	Professional orientation work
Character and temperament	Microclimate in a student group	The work in the curatorial direction
Emotional and volitional qualities	Availability of conditions for self-employment	The work of the Dean's Office

From the point of view of pedagogical management, there are important suggestions given by scientists to use innovative methods (active, problem-searching, game, projective) during the formation of professional competences, in which the student will play active roles, generate creative products (intelligence-maps), related to entrepreneurship, will simulate the elements of professional activity. It should be borne in mind that in order to achieve the positive results of future entrepreneurs training, timely correlation of the content of vocational education with the current economic realities of society is necessary.

Summing up the aforesaid we can conclude that the main subject, designed to solve the problems of education management, remains the personality of the teacher, and the high quality of educational services can only be achieved if teachers improve their skills continuously, and on condition of mobile response to changes that occur in society and in educational space.

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MANAGEMENT OF THE ENTERPRISE PERSONNEL SECURITY SYSTEM

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The personnel security system is one of the main components of economic security, the effective management of which allows to reduce the risks and threats of the company (enterprise). Besides, these risks and threats associated with poor staffing, low motivation level, lack of understanding of the strategy and tactics of the enterprise at the macro level and short-term goals within functional responsibilities of employees. In this connection, an urgent problem arises in the development of a personnel security management system that would allow monitoring, regulating and timely warning of threats, while using both static models for the current control of the situation and dynamic models for constructing the trend and calculating forecast indicators.

The purpose of the work is to improve the management process of the enterprise personnel security system through the development of a multicriteria decision-making model.

Issues of personnel security were considered in the following publications of the well-known authors.

Brugger P. [3], which wrote that humanitarian work, especially in conflict areas, was more dangerous and every humanitarian organization is affected by serious security problems, constituting a threat to their staff. The article has been outlines the general approach of the ICRC (International Committee of the Red Cross) to security issues and describes the pillars of the security policy it has adopted in the field to protect its operational staff.

Dhillon G. [4] connects researches in thus area with the informational security area as it has done the majority of other scientists in their own studies. At the same time, he thought that a majority of computer security breaches have occurred because internal employees of an organization subvert existing controls. While exploring the issue of violation of safeguards by trusted personnel. In a final synthesis, guidelines have been provided which organizations could use to prevent computer security breaches.

Montaquila and Godwin [7] claimed that social networking sites have become immensely popular not only in this time. The proliferation of the type and number of social media venues have well exceeded by the quantity of data they produce. While a recent literature review has suggested this data is increasingly used in background investigations, its analysis was appeared devoid of any standardized protocol. As a result, specific resources, techniques, and case examples have been discussed, and the federal security clearance process is provided as a recommended protocol for investigators.

Comparative analysis of the relevance of categorical apparatus. The research and comparative analysis of the relevance of categorical apparatus in the field of personnel security was carried out by the authors using the Internet-analysis method [9].

In this study, the volume of categorical apparatus was formed by the following categories (in general, 5 categories that formed a cloud of tags): «personnel security» (1), «personnel security system of the enterprise» (2), «countering insiders» (3), «staff security of personnel» (4), «personnel security management» (5). On the basis of the obtained evaluations it is possible to formulate the conclusion on the feasibility of further research and the relevance of the formed cloud of tags in the interval 1997 - 2016.

The use of the Internet-analysis method is based on the query language, taking into account its specifics, while this language is supported by all search engines. Thus, the dynamics of research is ensured. Input is: 1. A set of categories that have created a cloud of tags, $V = \{vi\}$, $i = 1 \div 5$; 2. Study period: 1997 – 2016: $G = \{gk\}$, $k = 1 \div 21$; 3. A set of search engines include the most famous. This set is sufficient to obtain a sample of results that is representative.

Then a set of averaged estimates, in relation to the selected tag shows: the area of activity in the chosen field of application, the relevance of its own use, quantitative saturation, the demand for research in this area, the application ranking in the world scientific community (Table 1, 2). In addition, the study was conducted using three languages of the query: in Ukrainian, Russian and English, according to which the data was averaged.

Fig. 1 shows linear positive dynamics of the change in the relevance of the tag «staff security of personnel» throughout the research period of time, indicating a sufficient demand for research in this area. The relevance of a tag refers to the number (or frequency) of information about the term under study, obtained by the method of Internet-analysis [9], in the form of the number of links that are published by search engines.

The overall trend in the graph is very positive (with an increase of 784% during the entire research period). Also, on the graph there is a sharp increase in the relevance of this category: in 2000 (9,36 times compared with 1999), in 2002 (12,24 times compared with 2001), in 2006 (2,47 times compared to 2005) and 2014-2015 (12,62 times compared to 2013). The sharp increase in relevance in certain periods

of time may be due to the fact that Ukraine has experienced low fluctuations of economic growth, the first signs of which were scheduled in the last quarter of 1999. In 2014-2015, a marked increase in dynamics could be observed due to well-known events in Ukraine.

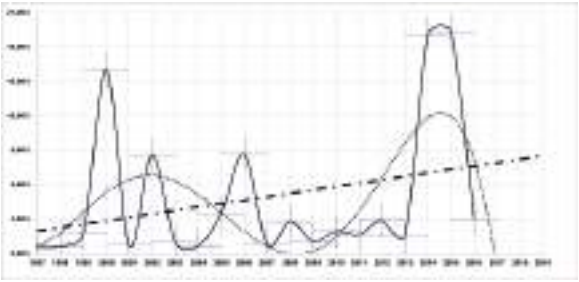

Fig. 1. Graph of distribution of relevance dynamics for the tag “staff security of personnel”: point line - forecast based on polynomial n-degree; point-dashed line is a linear trend that shows the general trend

The general trend of research and development in the selected cloud of tags can be seen in Fig. 2, from which one can observe general tendencies of changes in the plane of mutual influence of one on another tag.

Fig. 2. The general trend of research and development in the selected cloud of tags

Also, this presentation clearly demonstrates the peaks of demand or the sharp increase in relevance in the chosen field, from which it can be judged on its decline and periods of rapid growth. The analysis of trend distributions for all categories of tag clouds proved the following author’s conclusions: 1. Absolutely all categories of tags that make up the selected categorical apparatus of the study had a rapid increase in demand, i.e. the relevance of research in 2000, which confirms the fact of the impact of the wave of economic growth in the state and its impact on the innovative development of Ukraine. And this confirmation is from every tag;

2. Absolutely all categories of tags have a general positive linear trend (with the exception of “personnel security”, which has an almost neutral trend) over the entire period of time investigated. This testifies to the constant demand for new developments and research in the chosen field of modern science; 3. There is also a correlated distribution of relevance for the following categories, which have been identified in separate groups: “personnel security”, “personnel security system of the enterprise” and “personnel security management” – the first group, which has a synchronous growth in 2000 and smoothly steady growth in next time period; 4. According to the type of graphic figure received, the following groups were distinguished: 1. “clock” thickening group (which represents a clockwise arrow with some thickening of one of the arrows), which includes the tags “personnel security management”, “personnel security” and “staffing system” security of the enterprise “. included “personnel security of personnel” and “countering insiders”.

If we distinguish categories with the highest values: “personnel security system of the enterprise” - 16,81% “and” staff security of personnel “- 69,58%”, then their sum will make 86,4%. This is very similar to the distribution of interest on the Pareto principle (80 × 20) [1, 5], that is, it can be interpreted – 20 % of the funds in the selected two categories, which constitute the categorical field of the topic of research, will increase by 80% for the whole field of study, which will lead to significant cost savings for businesses and businesses. Then the authors constructed a matrix of correlation coefficients (which is diagonal) for all categories in order to check the level of influence of one category to another and to form a general pattern of mutual influence, which are given in Table 1 (for calculation of this data, authors have analyzed the following dimensions: 1000 requires by each term for 21 search engines during 10 years).

Table 1

Matrix of correlation coefficients for all categories by their numbers

	1	2	3	4	5
1	1,000	0,221	0,568	0,167	0,429
2	0,221	1,000	0,516	0,616	0,667
3	0,568	0,516	1,000	0,377	0,537
4	0,167	0,616	0,377	1,000	0,530
5	0,429	0,667	0,537	0,530	1,000

Further analysis of the results in Table 1 allowed to detect weak or correlation dependencies (less than 0,3 on the Chaddock’s scale [2]) in the following categories (Table 1 is highlighted by the corresponding light gray color): 1 of 2 - «personnel security» from the «personnel security system of the enterprise»; 1 of 4 - «personnel security» with «staff security of personnel». This allows them to be excluded from the generated cloud of tags because they do not affect or have a sufficiently small impact on the specified categories.

Proposed multicriteria model of decision making. The first threat to personnel security arises when an employee is employed. Approving the right decision directly affects the functioning of the personnel security system of the enterprise [1, 6, 8, 10-11]. The paper proposes a multicriteria model of decision making, which will aggregate the results of processing the input information about the subject by several methods described below and propose an integral index of a candidate for a position, which will be the final decision of the automated personnel security system.

The main components of static model of personnel security system are the following: 1. a database formed on the basis of enterprise statistics processing, expert assessments and international standards; 2. set of criteria by which the calculation of the final integral index of the subject of research will be carried out.

To assess candidates and decide on their compliance with the position, matrixes of characteristics of the corresponding position in the organization are developed - «Top manager», «Manager of the middle level», «Specialist of the department» dimension n × m, where n - number of alternatives (solutions), m - number of criteria (indicators of candidate assessment).

We introduce the symbols of the alternatives (Ai, i=n, n=5) and the criteria (Kj, j=1÷m, m=10). The set of criteria was obtained due to expert assessments with the pairwise comparison method. Saaty's [12] scale was used to obtain weights for each criterion. Whereas consistency coefficient does not exceed 0,1, the obtained set of criteria could be used in a model. The process of obtaining intervals for valid values consists of the following steps.

Step 1. A representative sampling is formed, which contains information about employees according to the relevant indicators. To construct interval series, the data is ordered and the scope of the variation R and the length of the interval l is calculated by the formulas 1-2:

$$R = Dmax - Dmin$$

where *Dmax, Dmin* are respectively, the largest and smallest sample size.

$$l = R / k$$

where R is the sampling rate, k is a number of intervals (k = 10).

Step 2. The law of distribution of each indicator is determined. To test hypotheses about the predicted distribution law, the Pearson criterion (criterion X^2) is used. The observed value of Pearson's criterion is calculated by the formula 3:

$$\chi^2_m = \sum_{i=1}^{m} \frac{\left(n_i - n_i^T\right)^2}{n_i^T}$$

where m is the number of variants or intervals in the variation series;

n_i^T is the theoretical frequencies are checked by the distribution law;

ni is frequency in the empirical distribution [10, 12].

The critical value χ^2_{∂} lies in the table of quantiles X^2 is the distribution of the given level of significance α and the number of degrees of freedom $v = m - 1 - k$, where k is the number of parameters of the distribution law, which are estimated by the sample.

Step 3. Calculate the numerical characteristics of the distribution law (for example, the mathematical expectation, the mean square deviation for the normal distribution law).

Step 4. Calculates the permissible interval for each indicator, which forms the matrix of the characteristics of the corresponding position.

To obtain the result on the basis of the formed matrices used 7 criteria, as well as the following methods: 1) the method of an ideal point; 2) the method of relative action; 3) the method of the main criterion [1, 5, 9]; 4) lexicographic method; 5) the method of successive maximization [8].

The result of applying each of the methods will be the choice of a better alternative, that is, a decision on the subject of the study.

Dynamic model of the enterprise personnel security system (EPSS), the main components of which are: 1. a knowledge base based on expert assessments, a system of production rules and a morphological model of EPSS, consisting of the black box model, the structure and structure of the system; 2. the fuzzy model of EPSS, developed according to the Mamdani algorithm [10], the result of which is the receipt of a dynamic indicator of EPSS.

Application in the complex of static and dynamic model in the enterprise personnel management system will allow to automate the decision-making process by personnel departments and the department of information security of the organization.

Results. The following experiment was conducted to analyze the model, depending on the sample size, 1000 matrices of output values were generated for samples ranging from 50 to 5000 entries in step 50 with the help of the developed model (programming language R). Calculations were made by 10 decision methods for each of the matrices. The total amount of research data is 50 000 entries.

As a result, the dependence of the percentage of optimal decisions from the number of generated candidate records on the set of possible solutions is obtained, which is represented by a logarithmic function with determination coefficient 0,79. This determination coefficient is interpreted as high according to Chaddock's scale [2]. Starting with 450 candidates board, the percentage of optimal solutions stabilizes in the range [93%; 99%]. Thus, we can make a conclusion about 96% confidence in finding the optimal solution from a set of possible solutions with the help of the proposed author's model. Dependence of the percentage of optimal decisions from

the total number of statements on the number of generated entries of candidates is functionally exponential with determination coefficient 0.58. This determination coefficient is interpreted as high according to Chaddock's scale [2]. Starting with 500 candidates board, the percentage of optimal solutions stabilizes on the value 20%. That is, from the general set of statements there is always a probability of 0,2 finding the optimal solution, and hence the choice of the optimal candidate. The volume of the sample of possible decisions has a direct linear dependence on the number of generated entries of candidates, confirming the determination coefficient, which is equal to one.

An experiment based on a sample of 50 000 records allows us to draw conclusions about the 96% ability of the model to choose the optimal solution from 20% of the possible optimal alternatives, which confirms the accuracy of the model.

Conclusions. Thus, the analysis carried out confirms the relevance of the selected categories research, which suggests the feasibility of the study, as well as the need for further research and development of new methods and approaches in the field associated with the formation of the theoretical basis of the enterprise personnel security system.

The scientific novelty of the work is an improved approach to managing the enterprise personnel security system by developing static and dynamic models that take into account both quantitative and qualitative indicators.

The practical value lies in the application of multi-criteria methods and technology of fuzzy logic to automate the decision-making process in the personnel security system of the enterprise. The prospect of the study is to develop a system of support and decision-making for intelligent human resources management at the enterprise.

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COMPARATIVE AND LEGAL ANALYSIS OF FOREIGN EXPERIENCE OF CREDIT AND STATE SUPPORT OF AGRICULTURAL PRODUCERS

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Loans for agricultural producers as a tool of state support for the agricultural sector has been and will always be the focus of the vast majority of states. Under these conditions, credit research experience rural producers gained special significance, and therefore determines its relevance. In practice, it is imperative to scientifically justify the attraction of sufficient credit resources to agricultural production on favorable conditions for them. After all, the current world trends of the permanent increase in the demand for agricultural products, caused by the growth of the population of the planet, the processes of urbanization and the constant reduction of sown areas against the background of reducing the fertility of the land, create the prerequisites for Ukraine with its agricultural potential and a real opportunity to become one of the leaders in world agricultural production.

Lending as a means of state support to an agrarian producer exists in most

industrialized countries, which spend considerable money on it. According to data provided by the Organization for Economic Cooperation and Development (OECD), which includes 29 countries (including the United States, the European Union, Australia, Canada, etc.), the costs of the seven recent years in supporting the agrarian sector through lending in these countries amounted to more than $ 1.07 trillion [3].

In the agrarian production of almost all developed economies, a specialized agricultural credit system, the characteristics of which should be briefly stopped, were created for a long time. It arose in the middle of the nineteenth century. in the form of credit unions in England in the town of Rochydette (1844), the initiators of their creation were local weavers. And in 1846 a credit union of cooperatives in Germany was created. Its founder, F. Raiffeisen, laid the foundation for the principle of mutual assistance among those for whom it arose. The Union functioned without equity and dividends, and members of credit cooperatives carried joint solidarity responsibility. The search for a proper credit system did not end there, and already in 1850 in the Prussian village of Delich G. Schultz, on the initiative of the middle class, he improved the system of credit unions and created a «loan association» (a loan association). This undertaking has become quite widespread in Germany. The structure of these associations approximated by its characteristics to joint-stock companies. On the principles of the Raiffeisen system, local agricultural cash desks were created in France [7].

The historical experience of credit systems in the United States shows that they were something other than an excellent way discussed above. It is the state acted as the initiator of the establishment of the credit system financial institutions. Thus, the US emerged System Federal Credit Banks (1932), the Federal Insurance Corporation (1934), Federal Savings Insurance Corporation (1934), the Federal Association of the mortgage loan (1938), Federal Bank lending telephone (1971) where farmers along with other citizens could obtain loans.

Especially for crediting farmers in 1916 was set up farm credit system, which includes a system of federal land banks, intermediary banks for lending to farmers' land banks, credit association production needs (1933) [7]. This credit and banking system lending preference to farming activities and working in modern conditions, which will be discussed later.

In the process of forming a market system of credit support for the real sector of the economy, all countries had difficulties in taking into account its sectoral differences. So that creates many problems for the credit system, there is a close link between the lending mechanism with high risk in the industry and low profitability of rural production. This system reduced the amount of lending, especially during periods of financial instability of the economy, when the industry needed especially additional financial resources.

An example of the development of agricultural credit commerce can be Holland. In this country, the first cooperative bank was established in 1896. Later, such banks

were united into the national RABOBANK, which is still in its much improved form today. The Bank brings together almost 600 local self-sufficient banks, providing a loan of up to $ 2.5 million [6].

But this is not the only system providing agricultural credit. Along with it, there is now a guarantee fund of the Ministry of Agriculture, which is to support agriculture uses grants the European Community. In the same direction, the system of commercial supply of the sector is also functioning by private banking structures.

Assessing the Dutch experience necessary to provide a positive example of an extensive system of providing credit assistance to support agricultural production.

Considering the financial and credit system of Ukraine in relation to the Dutch, in my opinion, it would be appropriate to borrow and apply some positive aspects of the mechanism of granting loans, but taking into account economic and other social relations that are inherent in Ukraine. This would contribute to the modernization of not only agriculture, but also the economy as a whole.

It is also interesting that, in order to create optimal conditions for the development of agricultural production for agricultural producers who can not be financed from their own funds or involved in the general conditions of capital, preferential lending is applied in many countries. Privileges are usually provided through targeted programs that reflect the priorities of public policy.

The basic principle of preferential crediting is partial compensation of the current interest rate from budget funds. However, the mechanism of its application in individual countries varies depending on specific conditions. Thus, in Austria, the size of the preferential rate of credit and budget compensation are directly dependent on the interest rate of the bank, in France the reduced rate is fixed, and the bank's rate only affects the amount of budget compensation.

French farmers are given six preferential loans with interest rates depending on the loan (from 3.75 to 8.25 years) with a maturity of 7-12 years for adverse environmental and environmental zones and 5-9 years for other districts.

For farmers in the Federal Republic of Germany, which is a participant in the Investment Promotion Program and the General Agrarian Program, preferential lending is made in the form of loans with a 1% annual interest rate, or by reducing the loan interest rate on existing loans by 4-7% [5].

In Ukraine, the issues of demand for credit resources and the real possibility of their return were very complicated. The main reasons include: excessively high fees for using loans, the tendency to provide mostly short-term loans, the absence of a regulatory framework for preferential lending regulation, which would include compulsory cases of such lending and responsibility for violating these prescriptions.

It should also be noted that in our country support is provided mainly to large agrarian enterprises. At the same time, farms producing the same or even larger amount of agricultural products receive less aid than large enterprises, and there is a lack of lending, subsidies, and extended support infrastructure.

Consequently, the current state of the Ukrainian farm sector requires a significant

increase in the volume of preferential lending and simplification of the mechanism for granting loans, in particular, within the framework of targeted programs, such as in Germany, where a fifth of the volume of medium and long-term loans of the German Bank of Germany is financed by the program preferential terms «Agriculture», «Young farmers», «Village renewal», etc.

Depending on the role of the agrarian sector in the economy of different countries and the peculiarities of the organization of economic relations, each country has created its integrated credit support system.

For example, the German system of credit support for the agrarian sector, as already noted earlier, now exists in such (due to history) composition: cooperative banks, savings banks, special banks, including Agricultural Rental Bank, mortgage banks, private commercial banks and European Fund for Reproduction.

The cooperative banking sector in Germany has a three-tier organizational structure. Its basis (lower level) is local co-operative banks.

The second level is the regional banks originally created by local banks, and now they are much wider than the previous range of activities.

To the third, upper, level of the cooperative banking sector belongs to Deutsche Gennessentaftsbank, the main shareholders of which are regional cooperative banks.

Local cooperative banks carry out all types of credit operations. Raiffeisenbank specializes in granting privileged, low interest loans to agricultural enterprises, most of which are involved in the trading of locally produced goods.

Until recently, the cooperative banks with preference for short- and medium-term, and later - and long-term loans. In addition to lending to the current activities of agricultural producers, cooperative banks finance investments in fixed assets and construction projects.

Agricultural loans are provided by the Agricultural Rental Bank, as well as other specialized, banks that are significantly smaller in their balance sheets. The Bank opens loans to all entrepreneurs engaged in agriculture, forestry and fisheries. When granting a loan, the bank takes into account the solvency of borrowers, the profitability of their households, liquidity, and the stability of performance. The criterion for determining the amount of debt repayment (interest and principal) is the amount of net profit.

The whole system of credit service provides the following types of loans: loans interregional, preferential, state and at the expense of the free capital market. The first three types of lending can only be carried out by the Agricultural Rental Bank.

Analysis of the practice of credit relations in Germany shows that preferential lending under the fulfillment of targeted programs and the use of targeted loans by specialized lending institutions, such as the Agricultural Rental Bank of Germany, promotes the development of agricultural production and the efficiency of using loans for these purposes.

No less interesting is the experience of Austria. Favorable lending covers the main types of agricultural activity, stimulating the development of the most

promising sectors and priority areas. In this country, up to 40% of the total amount of preferential loans is used to improve the organizational structure of farms, 27% - for the construction and reconstruction of residential and commercial buildings, 12% - for the mechanization of agricultural production, 5% - to promote the sale of products. In another country (Denmark) provides state guarantees for preferential loans to young farmers who bought their own economy [2].

A preferential loan for agricultural producers is also used in Japan, the US and other developed countries. Consequently, the feasibility of studying the experience of these countries and its introduction into the practice of farming in agriculture in Ukraine does not raise doubts. However, in my opinion, for the practical realization of such a task, first of all, it is necessary to establish preferential credit rates for loans granted to agricultural producers for production needs, taking into account the period of turnover of working capital on preferential terms. Since these interest rates will be lower than those set by the NBU, sources should be found to cover the difference between them and develop a legal mechanism that would correct this situation.

In the United States, lending is combined with a system of state financial support for the development of the agrarian sector of the economy based on common administrative and cooperative principles. Budgetary funds issued for agricultural programs are 80% controlled by the US Department of Agriculture through the Commodity-Lending Cooperation (CLC), the Farmers' Administration (FA), which was established in 1916, and the Farm Credit System (Farm Credit System) - the largest source of credit, as well as other financial and credit structures. The remaining funds are distributed through the state and local authorities [1].

CLC provides preferential lending to farmers who can not get borrowed funds without warranty obligations. Loans under the guarantee exceed 50% of CLC funds. She has more than two thousand representatives in the states and counties of the country. Decisions on the allocation of loans are authorized by these agencies after agreement with representatives of the local farmer community. They also control the effectiveness of the use of credit.

By the way, all expenditure on agriculture in the United States almost 60% are implementing targeted programs stabilize farm income. This Program, in turn, is divided into such programs as: «Price and Income Support», «Crop Insurance», «Agricultural Credit».The main group of credit institutions that make up the system of agricultural credit include: commercial banks, insurance companies, the Federal Credit System (FCS), Farmers' Administration (FA), Commodity Credit Corporation (CCC) and others, totaling more than 800 banks and associations [4].

Analyzing the experience of the leading countries of the world, it should be noted that at present two approaches to the role of the state in the economy are outlined. The first is represented by the concept of «limited state intervention in the economy», which involves conducting macroeconomic policies based on monetary methods. The second is the rather high active role of the state in transformations,

in particular, in the agrarian sector. Ukraine must finally decide which of them is the most favorable and necessary for it and for the development of agriculture, including its lending.

More reasonable and expedient is the latter, since, in my opinion, it only creates the necessary preconditions for the state to have an impact on the economy, including in the agricultural sector. This can be achieved through the implementation of such principles as the coordination of short-term and long-term goals in the adoption of regulatory and managerial decisions, fundamental and current tasks, mastering the mechanism of implementation of goals, ensuring the social orientation of all sectors of the economy and employment.

State regulation includes all actions of the state in the field of credit, pricing, subsidy policy, promotion of agrarian entrepreneurship and small business, active protectionism, protection and state support of the agricultural producer. Without this, one of the most acute and pressing economic and social problems will not be solved.

Investigation of quantitative and qualitative changes taking place in credit systems of foreign countries, as well as taking into account general tendencies and patterns of their worldwide development, will enable Ukraine to accelerate the path of the evolution of the agricultural lending system, which foreign countries have spent centuries since they have switched to market relations with this the credit system of the agrarian sector for centuries before our state.

A comparative analysis of the experience of highly developed countries of the world with Ukraine on the issues of credit policy is extremely necessary and useful in the context of the decision on the issue of Ukraine's accession to the EU.

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GAMIFICATION AS THE NEWEST WAY OF PERSONNEL MOTIVATION

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Motivation is considered to be one of the main functions of management aimed at motivating people to work effectively, as well as an essential condition for the success of an organization in the context of market economy and economic integration.

An organization can be successful as based, first of all, on the desire of its employees to work with high efficiency, secondly, on the higher level of organizational commitment of employees, and thirdly, on an increasing level of personnel interest in the high-end results of work and the desire to contribute to the achievement of the strategic goals.

Nowadays more attention is paid to the socio-psychological aspects of motivation, able to create the conditions for achieving high results of production and economic activity of an organization with minimal costs [9, p. 294].

For example, creative and intelligent people have a chance to become an "Apple genius" in the American multinational technology company "Apple Inc." There was a double benefit from realization of this idea: from the one hand, the head of the company emphasized that only brilliant people work in this company, while from the other, these employees were very proud of their high professional status and did their best to justify the trust of the top-management team [10, p. 30].

Recent research and practical experience has shown that along with application of traditional approaches, there is an objective need for the development and implementation of innovative models of personnel motivation. Among these models, gamification plays a particularly important role.

According to scientific position of Kevin Werbach [2, p. 24] "gamification is related to the use of game elements and clever use of game mechanics in a non-game context". At the same time, Gabe Zichermann [7, p. 35] emphasizes that "the process of implementation of gaming strategies in business is called gamification".

Due to gamification, it is possible to acquire the experience able to create the necessary sense goals and to strengthen the motivation of employees and customers. Any gamification project is aimed at the use of the available advantages of game mechanics, loyalty programs and behavioral economics to solve the existing critical problems and to increase the interest of employees in a better way".

In general, gamification is the newest way of personnel motivation, which allows converting the routine work into the special game process event [1, p. 49].

The desire to have fun is one of the strongest motivators that motivate a person to do something with enthusiasm and to work hard with full dedication. Therefore, as a result of the addition of certain mechanisms and elements of the game to the process of performing different kinds of work and the formation of game thinking among the organization's employees, it is possible to achieve a high level of their involvement and a corresponding level of enthusiasm in the process of carrying out work assignments. All this will allow to create a favorable educational environment in the organization, which is necessary for the formation of new professional experience and the search for new ways to solve various problems. Gamification includes three interrelated aspects that must be considered:

- formation of new experience;
- game interactions (i.e. objects and tools that form this new experience);
- game design (the practice of designing, implementing game elements into non-game processes).

In the present-day context, the interest of organizations in the use of gamification tools and methods in the system of personnel motivation is determined by a great number of factors, including, among others, as follows [3].

First of all, the game is a tool that demonstrates a high level of involvement. At the same time, according to the research results, people's involvement in games does not decrease with the appearance of new information technologies on the market. On the contrary, different games actively replace other kinds of leisure and are rapidly introduced into many traditionally non-game processes in various spheres of life of modern society. In this regard, the search for opportunities to adapt the potential of games to the solution of critical tasks in the field of personnel management can be considered as a means of increasing the organizational effectiveness as a whole.

Secondly, the symbolism of all spheres of our life leads to the fact that favorable opportunities to receive unforgettable impressions and unique experience are needed for personnel at all levels in organization. Therefore, the experience of implementation of gamification projects in many companies, like "Nike, Inc.", "IBM", "Cisco Systems, Inc.", "Microsoft Corporation", "Google Inc." proves once again that gamification is one of the most effective tools for corporate culture development and personnel motivation system improvement that can satisfy the sense of participation in achieving a common goal for each employee.

Thirdly, the various shifts that occur today in the structure of the personnel of many organizations can not but affect the management processes. Features

associated with the socialization of representatives of the new generation, their high involvement in new information technologies (primarily social media and online games) necessitate the introduction of new and more understandable elements of the management process.

Fourthly, there is a rapid improvement of information technology and their significant reduction in price for consumers. This factor significantly expands the number of enterprises and organizations that are able to introduce gaming elements and mechanisms into the existing personnel motivation system, since gamification is widely used not only in the activity of large business structures, but also in small and medium-sized enterprises, in start-ups, social organizations and government agencies of developed countries. Additionally, the scope of tasks that are expedient to solve with the help of gamification techniques, is also expanding. For example, the emergence of technologies that allow for tracking of personal data or personal achievements significantly improved the mechanisms of gamification and accelerated their integration into automated personnel management systems.

And finally, an important incentive for active use of gamification concept is the development of new online forms of interaction and teamwork. Consequently, any crowdsourcing project necessarily includes the game elements, as well as the game mechanisms to support participants' drive strategy, to determine their personal and group ratings and to create a competitive environment for solving various types of tasks [3].

Scientists have proved that using gamification to motivate personnel in an organization, it is possible to significantly increase the efficiency of employees' activity. To do this, one only needs to use the following forms of gamification [8].

To start with, it is a competitive form of communication, based on the motivation of employees through various competitions, the main topics of which are closely related to urgent problems or goals of an organization. This form provides for the creation of various contests and competitions, within which the important tasks can be solved.

For another thing, it is the victory form of gamification, which is based on the interest of employees in the game process, within the framework of which it is envisaged to perform certain tasks of the organization. The main difference of this form of gamification is that at the end of the game process all employees will be the winners. At the same time, the socio-psychological climate and the general atmosphere in the organization will be rather positive and conductive to coordinated work of employees in the organization.

And thirdly, it is the aesthetic form of gamification, which is based on familiarizing employees with the main goals and tasks of the organization. By the way, these goals and objectives should coincide with the interests and desires of the employees of the organization. As a clear example, here we can cite the typical situation when any employee can get a medal, a letter of commitment or a small gift for overfulfilling a sales plan [8].

When implementing this method of personnel motivation in modern organizations, it is possible to apply all three forms of gamification, as well as one of them only. However, as the foreign practice shows, the maximum effect can be achieved only by combining all three forms of gamification.

In addition to the above-mentioned forms of gamification, Western experts identify some mechanisms for using this promising new approach to personnel motivation. These mechanisms can be described in the following way [6]:

- rating of the winner – this forces players to come back again and again to the computer game and to replay its levels to improve the achieved position in the ranking;
- status, which plays an extremely important role in computer games, therefore, a player can not leave the game without achieving the highest status and rating (in modern organizations this can be the status of the best or most disciplined employee, or even the indispensable recognition by other employees;
- achievements in the form of tangible and intangible reward;
- behavioral impulse.

Despite the benefits provided by the use of gamification in the system of personnel motivation, its implementation is rather slow. That is why nowadays a small part of enterprises abroad (17 % only) are engaged in the use of gamification opportunities. In Ukraine, the percentage of the use of gamification in the personnel motivation system is even lower. According to the latest sociological survey of HR specialists [5], only 6 % of respondents are well acquainted with the specifics of gamification and actively use its tools in their professional activities. During this survey, another 17 % of respondents stated that they know about the existence of gamification in the workplace and the rest 77 %, who make up the majority of this sample, answered that they first heard about such a concept.

According to the last research of recruitment companies in Ukraine, during which 400 employees and 108 heads of companies from different regions of the country were interviewed, 27 % of Ukrainian employers have never heard of gamification before, and 60 % of the respondents have never encountered it in their workplace [4]. Thus, the potential of gamification in the field of personnel management is underestimated by both domestic and foreign specialists. According to Gartner's prediction study, by the end of 2018, about 50 % of foreign companies will use various gamification tools in their business processes [5].

It should be borne in mind that the use of gamification tools and techniques in the work with personnel requires an understanding of human psychology, as well as some new knowledge and skills of using specific gaming techniques in a non-gaming context. In this regard, we believe that in the near future enterprises and organizations will require managers with relevant competencies.

In general, gamification can become an effective alternative to the traditional tools of personnel motivation system in the coming years, as it can create unique experience of employees, provide additional sense and direction of their activities,

increase motivation and involvement of employees in the work process and generate profit for an organization.

Taking into account the results of our research of gamification, its forms and mechanisms of use, we consider it expedient to highlight the following advantages and disadvantages that will occur in organizations when this new method of personnel motivation is used directly.

For example, the main advantages of using the tool of gamification tool in an organization include the following ones [3]:

- replacing the routine work by the game process;
- the ability to involve all employees in the main business processes of the organization in order to find the best ways to solve certain problems;
- the possibility of developing creativity and extraordinary thinking among employees;
- the possibility of self-realization of employees;
- increasing the level of employees' interest in solving certain tasks;
- the possibility of increasing the cohesion of the work collective in the joint solution of important tasks of various fields;
- the ability to visualize the achievements and progress of employees.
- In turn, the main shortcomings of the implementation of this process in the activities of the organization are as follows:
- a superficial character;
- the concept of gamification does not take into account the fact that the use of this method of organizing activities in the workplace may not be appropriate for some persons;
- short-term effect;
- the development of competition between employees, which can lead not to the achievement of the organization's goals, but to the weakening of the corporate spirit as a whole.

Thus, summing up, it can be said that gamification is really one of the latest methods of personnel motivation, which can give the desired result for the top-management team of the organization, if certain requirements are met.

The practical application of this method largely depends on the age structure of personnel, as well as its basic needs. Only a deep understanding of employees' wants, needs and motivators is able to determine the possibility and necessity of implementing this method in the existing system of personnel motivation.

However, taking into account the experience of European and American leading companies, as well as the emergence of a trend towards the rejuvenation of personnel, it must be emphasized that the nature of gamification development and the variety of its forms will undoubtedly improve the efficiency of all employees and the efficiency of business processes as a whole.

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APPLYING THE US EXPERIENCE TO IMPROVE ECONOMIC EDUCATION IN UKRAINE

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Economic education within a market economy is very important for the training of competent specialists. Today, national education is in the period of being reformed and looking for ways to improve. Studying foreign experience is one of the ways of developing your own approach to improving the education system, implementing and adapting the most advanced and effective approaches to education.

In this regard, the economic education of the United States cannot fail to attract attention, for today it is the most economically and market-developed country, the

country that in a short time, having absorbed the best experience of the «old world», built up its own system of education, which is able to provide post-industrial economy with highly skilled specialists.

The analysis of current research has shown that foreign experience in higher education is studied mainly in relation to the retrospective formation of the education system (T.N. Bokova [2]) or its management (V.E. Luniachek [8]), or is analyzed by scholars mainly in the shere of training only pedagogical staff (Ya.M. Belmaz [1]). That is, the foreign experience of organizing higher learning is studied mainly by teachers and, accordingly, attention is focused on the training of teachers in foreign universities, the United States, in particular.

A number of authors describe the general peculiarities of higher education in the United States.

For example, R.P. Soloviova and Yu.M. Soloviova [13] highlight the essence of the educational process in the USA, characterizing the main features and advantages of the American education system.

O.V. Tarasova [14] provides a general description of US higher education: she singles out the most well-known universities, the state research support program, the distribution of higher education institutions, etc.

O.A. Ihnatiuk [6] gives an overall record of the main directions of the education system of the United States, defines key aspects and innovations, describes the interdisciplinary approach and individualization of education.

Theoretical analysis of the peculiarities of master's education in the USA, without regard to a particular specialty, is submitted by O.M. Zinovatna [5].

As regards the study of the peculiarities of the organization of economic education in the United States, we consider it necessary to highlight the research of the following authors:

O. Naboka [10] presents an overview of the peculiarities of higher economic education in different countries of the world, including the United States, distinguishing the advantages and disadvantages.

O. N. Voinarovska [3] and L.V. Ohnivko [11] focused their attention on training of bachelors and masters of economics in the USA. The works are relevant as to the selection of the field of education and a certain stage of getting higher education.

However, despite a number of modern studies, the problems of practical training of economists in the United States and its application for the development and reform of higher education in Ukraine were not covered as a separate subject of research.

One of the peculiarities of all higher education of the United States is lack of a unified state education system, which results in the diverse structure of American universities.

Investigating the system of American education L. B. Ohnivko [11, p. 135-136], separates the following structural elements:

- institutions of post-secondary education of different types and semi-professional

schools with programs lasting from 1 to 3 years and issuing a certificate of low levels. Education of short duration results in getting a certificate of certain professional skills; education of longer duration leads to obtaining an Associate Degree, which gives the right to perform the work on the level of technicians and to enroll in the third year of colleges with bachelor programs. This stage is an intermediate stage between finishing school and receiving a bachelor's degree;

- community and junior colleges with two-year programs, the completion of which provides access to the third year of «bachelor» colleges and obtaining an Associate Degree or Occupational License;

- Liberal arts colleges being an essential feature of the US higher education system, which teach almost exclusively general disciplines such as history, chemistry, economics, etc., and award a bachelor's degree with a dominant academic and minimum professional content. However, there is a tendency to include a four-year program and professional courses in the final stage, which expands the capabilities of graduates. But for individual specialties, for example, medicine and law, in order to obtain a professional qualification, a student must also master a program of postgraduate professional training in order to achieve a master's degree in university schools;

- comprehensive colleges awarding a bachelor's and master's degree (programs include developmental professional components and extend professional component parts). Most of these establishments train teachers, businessmen, professionals whose activities require a master's degree;

- independent professional schools with a bachelor's (often master's) level of diplomas in the fields of technology, arts, etc. Having a program content close to those of the institutions of the first group, these schools hire much more qualified staff with university training;

- universities with all the training cycles belonging to the most prestigious group of universities and with the right to train doctors. These include colleges of a bachelor level, schools for training of masters and doctors. This group is often differentiated according to other parameters, for example: according to the level of scientific research (the number and thematic variety of doctoral theses presented each year); the volume of scientific financing; the presence or absence of a medical school with an experimental clinic; spectrum of faculties; finally, the number of teachers and students and the relationship between them.

Such an extensive structure of higher educational institutions contributes to a greater practical orientation of education and training of qualified specialists.

Although the main form of academic studies is a lecture that is presented to a class sometimes numbering up to a thousand students, this form differs significantly from the lecture in our understanding. Students do not make notes of a teacher's monologue - the notes are distributed to them, while thematic videos, presentations in PowerPoint, economic examples of existing companies, and dialogues are an integral part of lecture classes. In addition to lectures, students are required to attend

discussion sessions (seminars), and students of science faculties and schools should also spend some time in laboratories. During the semester, a student is required to turn in several written papers.

O. N. Voinarovska examines the peculiarities of training of bachelors of economics in higher educational institutions of the United States, emphasizing the combination of four approaches: pedagogical, informative, methodological, and definitive.

The pedagogical approach consists in the obligatory direct participation of students in the very process of teaching, the so-called active learning, which not alone destroys the barrier between a teacher and students, but promotes and encourages students to form their own attitude to the matter in hand using the knowledge they have already acquired.

The essence of the informative aspect of economics teaching in US universities is the use of such models that not alone reproduce the purely economic aspects of modern life, but illustrate their connection with political and social events, which are an integral part of the problem. It enables students to prepare for a comprehensive study of an economic problem.

The methodological approach used by American educators is to combine introduction of students to the realities of the economic world and to teach them methods of analysis and interpretation of these economic phenomena. Again, this approach emphasizes the feasibility of combining teaching economics with social, political and cultural backgrounds, thereby expanding students' horizons and their political and social competence.

The definitive approach to teaching economics in the United States relates, first of all, to the definition of economics itself. If the classical definition of economics is the science of the distribution of limited resources in accordance with unlimited needs, in today's American higher school, economics is defined as a science of the interaction of people in order to provide themselves and society as a whole with goods and services. This approach provides an opportunity to consider economic mechanisms from the social aspect of our lives [3].

Thus, we should note that while training bachelors of economics in US universities, there is a direct link between studying and the realities of life, the past experience of students, and what they can face tomorrow or in half a year; the focus on the formation of a specialist of the definite (partly narrow) profile; mastering the experience of the future profession even while studying; use of active learning methods and information technologies.

Analyzing master's programs of US universities, O.M. Zinovatna distributes them depending on the general purpose and the organization of the educational process into the following types: ancillary types; types of career advancement; types of apprenticeship; community-centered types [5, c.83].

The second and third types are of immediate interest for our study.

Master's programs of professional growth meet the requirements of students

to be competitive in the labor market by providing the qualified training necessary for career growth in a professional, rather than academic environment (emphasis added by the author.) Unfortunately, today the master's degree in any field of study in Ukraine is mostly oriented to increase the theoretical knowledge and pedagogical skills of students, it has a predominantly academic meaning – analysis of the master's degree curriculum in the specialties « Management» and "Entrepreneurship, trade and exchange activities" shows that half of the subjects are of general theoretical and research nature, which does not contribute to the further development of students' professional skills). They are primarily characterized by a direct connection between theory and practice, by the use of various workshops and interactive activities: situational studies, group projects and presentations, compulsory and optional internships, practical training; inviting freelance and visiting lecturers so as to give students specific professional experience; provision of educational services in consumer-friendly forms, for example, evening classes, weekend or summer classes, the use of the Internet technologies, etc.

Master's programs of professional apprenticeship are based on the idea that students can acquire the competencies they need only during practically oriented training under conditions close to real ones, overcoming the limitations of traditional classroom activities. In such programs, an active approach to learning is widely used; the collegial relationships between program participants and the training of professional ethics in practice are widespread, since it is important not only to transfer knowledge but also to form communicative competences. Such programs provide students with the opportunity to acquire knowledge in a different way, creating a mini-community that is united by solving common problems.

Special attention is given to organizing training in US business schools. Although business schools have spread all over the world recently (they also appear in Ukraine and Russia), about 60% of the leading business schools in the world are concentrated in the USA. Prestigious business education, for example, obtaining an MBA diploma in the United States, is usually a guarantee of a successful career [4]. The first business school appeared on the basis of Dartmouth College in the USA back in 1900 at the initiative of William Tucker. V. Tucker laid the foundation for training a qualitatively new generation of businessmen and managers who had to master deep understanding of the importance and role of business, he managed to combine theoretical training with the practical experience of businessmen. For this he received the nickname «The Great President.» Today Dartmouth Business School remains one of the world leaders in business education and is an arbiter of fashion in this field; its experience was adopted by many European countries [7, c. 42].

Among the most popular American business schools one can single out (according to the data from global ratings Forbes.com, Businessweek.com): Stanford University GSB, Harvard Business School, University of Pennsylvania: Wharton, Columbia Business School, Chicago GSB, Northwestern University (Kellog), MIT

Sloan, University of Michigan (Ross) and others.

All of them competing in the educational services market are most effective in improving methods and developing efficient learning approaches.

The research method of Chicago Booth School of Business, the second oldest one, founded in 1898, is based on independent research for publications and activities of corporations on specific issues conducted by students, followed by the discussion of the outcomes and conclusions, and by making suggestions on how to make appropriate decisions in companies. Students are given the right to independently choose a topic of research, as well as a scientific supervisor, and a plan for mastering disciplines within the limits of the established learning logic. After completing a series of studies of corporations and literature on different disciplines, students acquire skills not only in consulting activities, but also in the ability to collaborate with various employees of the company.

The approach of the University of Oklahoma is to attract business experts having certain teaching capacities and some experience in teaching . The thing is that there are not always enough teachers who can teach the discipline in the light of modern business development trends. Therefore, integration of theory and practice is carried out here through an active and thought-out combination of teaching work on the basis of involving management personnel of leading companies, who have graduated, as a rule, from the leading US business schools and have an MBA degree.

This Californian approach to business education is based primarily on the training of specialists in training centers of companies, focusing, first of all, on the firms' own experience. However, teachers for such centers are trained on a centralized basis in Oxnard Institute (college) of management [9].

The most popular in the pedagogical activity of American business schools is the case-method. It was launched at Harvard Business School by Dr. Copeland in 1921, although it was only actively used it in the postwar period. This method brought world-wide glory to Harvard Business School.

A distinctive feature of this method is the creation of a certain problem situation based on facts from real life. The case method illustrates real life, due to which it is very widely used.

From the pedagogical point of view, the case-method is effective due to the following reasons: the use of elements of problem learning in the educational process; formation of skills for solving problem situations and tasks; realization of imitation of the applied decisions in real life situations; the formation of teamwork skills when discussing training problems and conducting presentations, press conferences, etc.

The analysis of the experience of teaching economists in colleges and universities in the United States, the peculiarities of the educational process in business schools has shown that interactive learning methods prevail in teaching aimed at effective training of future competitive specialists. The effectiveness of the use of such methods is especially vividly demonstrated by modern business schools in the

United States. It is in business schools that a practice-oriented approach, widespread use of interactive methods and modern information tools are most developed and continue to evolve and improve for the purpose of training of effective managers.

The experience of business schools in the United States has the prospect of being adopted not only for the development of domestic business schools, but also for the improvement of the system of higher economic education in Ukraine. Today, training of economists is in need of a greater practical component. When using interactive teaching methods, it becomes more efficient and effective.

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INCREASING COMPETITIVENESS BY INCREASING EMPLOYMENT SATISFACTION IN HUNGARIAN MUSHROOMING SECTOR

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Human resource management differs significantly from other resources management. Its positive attribute is that it's a special kind of resource, which has a long lifespan, and has a possibility to increase its productiveness as the time goes by.

Furthermore, this is the resource which is capable of renewing itself. Its danger, however, is that it's not the possession of the company, therefore, it can freely decide if it wants to leave the organisation, or does not. The possible reason for leaving is either the low rate of motivation, or the offer coming from another place (Magda et al., 1998). Lentner (2018) Lentner (2016)

familiarise ourselves with characteristics of different attitudes and values. Staw and Ross' (1985) research results show us that employee contentedness is a firm attribute of people which can be replaced with extreme hardship only. We can only gather information on it through the behaviour of employees.

Kieser (1995) stresses in his book that Smith, Kendall and Hulin differentiated the importance of wages, the kind of work done, the possibilities of promotion, colleagues, and leaders as important to the employees' contentedness.

Locke determined that employee contentedness is a positive sentiment which comes from evaluating their work experiences. Ladahl and Kejner thinks that burying oneself in work can be interpreted as the level the person can familiarise themselves with their work, and the importance of the work they're doing (Ladahl-Kejner, 1965).

Greenberg and Baron state that contentedness is the emotional and behavioural reaction of a person to their work. (Szlavik, 2010). Kieser says that until the XX. Century, nobody was interested in the fact that people can actually be content with their work (Kieser, 1995).

Bakacsi's opinion is that one of the most important attitudes related to work is employee contentedness. This relates to how much the employees find their work a challenge, and how advantageous they consider their wages earned for it, furthermore, how cooperative their colleagues are (Bakacsi, 2000). Klein stresses that employee contentedness is a general attitude, which comes from the following attitudes' mix: specific work factors, workplace group relations, and unique characteristics (Klein, 2006).

According to Porter, being dedicated to the organisation has the elements of accepting the organisation's goals, initiative to reach the goals of the organisation with loyal work, and the wish of the employee to remain part of the organisation. He thinks that employees with high devotion will remain in the organisation even if they are sometimes unsatisfied with various aspects of their work (Porter, 1974).

Levy wrote that employees work for their livelihood, therefore, most of their time is spent on work. Employers have the obligation to reward people for this devotion (Levy, 2003). Dawis, Lofquist and Weiss created the work adaptation theory, according 87 to which there's a mutual abiding between employees and organisations. A part of their theory is motivational factors, human necessities, unique competencies and work requirements coming from work activities (Dawis et al., 1968). Juhász improved on this, and thinks that two processes of acceptance are conducted at the same time.

The employee's competence, personal characteristics, abilities and knowledge adapts to workplace requirements, which have to be kept. Furthermore, the employee's needs and wishes are satisfied by the organisation and the work (Juhász, 2006). Eskilden and Dahlgaard believe that when determining the motivational potency of a given workplace, the potential for change and importance of work tasks is added together, and their average value is what's really important. Even if one factor is missing, the employee's motivation won't necessarily decrease (Eskilden-Dahlgaard, 2000). Cohrs, Abele and Dette state that the attributes of workplace atmosphere, and the satisfaction of employees have a correlation, which is higher for people who have a higher development demand.

They believe employees, who are content with their work, can evaluate their own work better than those who are not satisfied (Cohrs et al., 2006). Employee contentedness is significantly impacted by the quantity of tasks to do, as overwork will sooner or later make employees dissatisfied. Mello believes that employees have to be given work which won't make them overworked, but keep them motivated (Mello, 2006).

Greenberg and Baron think that employees are content with their work if they're neither overworked, nor given simple tasks (Szlavik, 2010). In light of Greenberg's and Baron's opinion, we can say that those having a higher position are more content, compared to those in lower positions. Furthermore, employees content with their work usually stay with their organisation for more time than their dissatisfied colleagues, who usually leave their workplace before they could achieve a promotion to a higher position.

Drafke's interesting argument is that employment affects the satisfaction level of employees. This means that some people are more content if they've been with their corporation for longer, whereas some people are exactly opposite, as after they reach their career goals, they can't find a challenge, and are almost bored at their work (Drafke, 2009) (Szlavik, 2010). If we take a look at Gyenes' and Rozgonyi's research, we can see that hierarchic relationships have a significant effect on employees.

The when and how of superior's intervention is a fundamental factor (Gyenes-Rozgonyi, 1981). Luthas stresses that as far as superiors' behaviour goes, we should analyse how much they consider the performance of their employees. Furthermore, he informs us that leaders have to include employees in any kind of large decision (Luthas, 1998).

Choo and Bowley concluded that training can only increase contentedness if the presenter aims participants of the postgraduate course, and has exceptional professional knowledge. We need training and education courses where employees can learn things they may implement during their operative tasks (Choo-Boweley, 2007).

Vaught and Pettit declared that if there's a strong connection between the employee and their work, neither vertical, nor horizontal communication has a strong effect on said employee. However, if the employee and their work has a weak connection, vertical communication coming from above has a stronger effect on performance (Goris et al., 2000). Milkovich and Newman believe that the wage system fundamentally affects if the employee remains in position, or chooses another workplace to migrate to (Milkovich-Newman, 1999). Fraser thinks that after a certain level of income, wages won't shape employee contentedness (Fraser, 1983). Poór believes that flexible wages are in selection and justice. When introducing cafeteria, one has to take the needs and requirements of employees into consideration (Poór, 2005).

Garai states that there are employees, whose work can also be their hobby.

Those challenging more work are most notably those of more knowledge and higher wages, and if they're rewarded by their performance, the market relationship between employer and employee is what's important (Garai, 2003).

Co-worker relations can be seen in information exchange during working, in cooperating with colleagues during work, and in personal interest in each other (Héthy and Makó, 1981). Group effort can affect contentedness. Wellorganised teams enjoy working together, however, if they work in a team where it's hard to cooperate for members, employee contentedness will not increase at all (Luthans, 1998).

Spector and associates analysed the conflicts of work and family, and they concluded that it has different effects in different cultures (Spector et al., 2007). Geurts and Mauno also prove that females have a harder time than males, because they have to make a better balance between work and raising children (Kinnunen et al., 2004). Work conditions have to be appropriate in order to do tasks efficiently, and generate contentedness. Such work conditions are the physical factors of the workplace, its technological level and used technological solutions (Bencsik, 2004).

According to Luthans, only extremely disadvantageous workplace conditions lower the employees' contentedness (Luthans, 1998). According to Levy, personal performance and contentedness is better, the higher position someone works in (Levy, 2003). Porter believes that the rewards of completed work are the key, because the employees will only be as content with their work, as possible it is for them to be, according to their wages (Porter, 1978).

The physical condition ofemployees, and their contentedness have a connection, of course. When taking a look at this, multiple instances of research support the view that this exists, and is important. Employees that are dissatisfied with their work usually have more health problems. Dissatisfaction may generate mental and emotional problems, and may appear as signs in f. e. worrying, which derails our concentration fromefficient work.

If dissatisfaction is paired with larger stress or higher workplace loads, sooner or later, physical illnesses may surface. In more serious cases,depression and burnout syndrome may happen (Rozgonyi, 2000). Being late shows negative attitude towards work, and dissatisfaction. If someone leaves before their work is over, we might want to suspect (Koslowsky, 2009). Sometimes, there are theft cases of employees in the organisation, which Kulas and associates consider a manifestation of dissatisfaction (Kulas et al., 2007). 89

Source and Method. The goal of our research is to analyse the given agricultural sector, and see how contented the employees are with their work, what motivates them, and how efficient their work is. Our research is structured as follows: we determine the topic of the research and out target goals, then create hypotheses for it.

As part of processing international and domestic expert literature sources, we conduct a secondary research, and during the primary research, we use an empirical

data collection to build a database.

We employ statistical methods to either validate, or invalidate our hypotheses. Sampling was non-representative. During the quantitative research, research target goals can be identified, where the research translates data to numbers, and using statistical methods, helps us evaluate them (Corbin et al., 2008). We constructed our qualitative primary data via questionnaire. The standardised questionnaire makes sure that data can be subjected to comparative analysis (Malhotra, 2001). The employee contentedness analysis was targeted at employees working in our domestic mushroom verticum, using random sampling. The questionnaire contained 25 questions for three topics, the results will be introduced in detail.

The questionnaire underwent a preliminary test with 30 participants, originally faulty questions were fixed. During the time period between September 2017 and October 17, a nationwide sample was collected. The programme used for data evaluation is the SPSS 15 programme suite. MORAKUSZI and associates (2015) deal with the research topic of consumer satisfaction, however, the statements they made are just as applicable to employee satisfaction.

According to their description, contentedness can best be measured by questionnaires, focusing on different areas. However, evaluating the data received can only happen if they're converted properly into the format of Likert's scale.

Results. We can see on the Chart that the generation and willingness to learn of the mushroom verticum's employees have a significant relation, as the significance level is below 0,05. Most of the 31-40 employees at 65,5% would like to learn at a training related to mushroom production, whereas 34,5% would not participate.

Fig. 1. Learning and training
Source: Own research 2017

The age of employees, and the effect their work has on the organisation's operation has no significant relation to each other, as the significance value is above 0,05. Based on our analyses, we determined that those employed in the Hungarian mushroom verticum don't know the actual value of their work, and are not clear on the fact that the competitiveness of the organisation is very dependent 90on the quality of their work.

One of the reasons for this is that in the mushroom verticum, physical labour are employed in the majority, and they have elementary education at most, therefore, they don't understand the connection between the work they do during their operative tasks, and the competitiveness of the enterprise.

During the questionnaire, we concluded that those employed in the mushroom verticum would like to learn at training related to mushroom production, thereby beyond production of healthy foodstuffs, mushroom production could also operate as one of the economy's pulling sectors.

Our hypothesis, which states that those employed in the Hungarian mushroom verticum have a need to participate in postgraduate training, which would help their everyday work, holds true. The ages of employees, and the importance of their work within the organisation has no significant connection, as the significance level was above 0,05.

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FINANCING ENERGY EFFICIENCY PROJECTS IN HEALTHCARE FACILITIES: BARRIERS AND MECHANISMS

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The medical sector in Ukraine is a multilevel functional managed system. The organizational structure of the healthcare system of Ukraine consists of three main levels: national, regional and local.

According to the data of State Statistics Service of Ukraine, there are 1700 hospitals and 10200 outpatient clinics in Ukraine as of 2016 [1]. Most of hospital buildings are in communal ownership and managed by local public authorities (rural, village, city councils and their executive bodies, as well as sub-region

and region councils, which are representing the common interests of territorial communities of villages, towns, cities). A small part of medical facilities' buildings is state-owned and administered by the Ministry of Health of Ukraine, Academy of Medical Sciences of Ukraine and other central governments.

The authority of state and local government in implementation of energy efficiency measures in hospitals relate to the ownership of buildings in which they are located.

The Ministry of Health of Ukraine and the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine do not have any consolidated statistical and analytical information about technical condition of the buildings of medical institutions, as well as their energy and constructive characteristics.

At the same time, the analysis of the information available on websites of local authorities allows to conclude that most of these buildings were built between 1950-s and 1990-s [2, p. 586]. Many of these buildings, especially in small towns, villages and amalgamated hromadas, require major repairs, and some of them are in emergency conditions.

Majority of buildings have low thermal performance, characterized by high energy consumption (2-2.5 times higher than allowed by current national standards). At the same time, a microclimatic regime in buildings does not always correspond to normative indicators. In addition, the staff of medical institutions is usually not motivated to ensure rational and economical energy consumption.

Despite the unsatisfactory technical conditions of a large part of medical buildings, neither the Ministry of Health of Ukraine nor the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine have a common vision on the way how to improve operational and thermal characteristics of these facilities.

Currently there is no centralized data source with organized and verified information about implemented energy efficiency measures in the facilities of healthcare institutions. This is also related to overall absence of the centralized database of public buildings. In the upcoming future, during the transposition of Directive 2012/27/EU this problem will be addressed. The possibility to expand such centralized registry and include the information about planned and implemented energy efficiency measures could be additionally considered.

At the regional level, funding of the energy efficiency measures in hospitals is envisaged within the framework of regional energy efficiency and energy saving programs, which contains separate sections on public buildings, including regional healthcare facilities. Unfortunately, their funding level is unsatisfactory due to the lack of available funds in regional budgets.

Municipal healthcare facilities are mostly financed via local budgets and subventions from the state budget of Ukraine. These costs cover only current expenditures and are used to pay salaries to employees, purchase medicine and

implement medical programs. At the same time, works on capital repairs or reconstruction of hospital buildings can be carried within separate expenditure of local budgets.

Also it should be mentioned that according to Ukrainian legislation, related capital expenditures shall be covered by the owners of the buildings, which are usually the local authorities. In this regard, municipalities act as responsible bodies to implement actions in order to improve operational and thermal characteristics of buildings of medical institutions.

In particular, according to Article 71 of the Budget Code of Ukraine [3], municipalities have the right to finance energy efficiency projects via planned capital expenditures of the development budget, which is an integral part of the special fund of local budgets. The decision for budget allocation for implementation of construction or reconstruction measures of healthcare facilities is made by the local council decision during local budgets approval. However, such funding usually does not exceed 10% of the total expenditures of the municipal health facilities budgets. Thus, the hospitals' administrations direct these funds to the current buildings' maintenance.

The adoption of the Law of Ukraine «On Amendments to the Budget Code of Ukraine on the reform of intergovernmental budget relations» [4] provided additional advantage to local budgets development. According to the Law, starting from 2015, the formation of local budgets takes place according to a new model of financial support and budget relations. Such approach increases territorial communities' development and motivates to grow revenues for their local budgets.

This becomes possible by transferring revenue from the state budget, implementing new payment types and expanding the tax base. In particular, over the past 3 years, local government received additional authorities from the central government, along with additional resources. According to the Independent Association of Ukrainian Banking database, introduction of new model led to significant increase of municipal revenues, which in 2017 reached 192 billion UAH [5]. Nevertheless, the minimum medium-term investment need for municipal infrastructure modernization amounts to 10 billion euros.

The expansion of municipal authority in the public sector, in conjunction with their mandate to plan the development of budget funds for construction and reconstruction of social infrastructure objects for the entire period of project implementation, significantly increases their financial capacity for the implementation of energy efficiency projects in budget buildings, including healthcare facilities. However, given the high project costs of buildings' holistic thermal modernization, it is clear that implementation of such projects requires additional funds from external sources, which may include state budget, private investors, international financial and donor organizations.

Today, the pending process of identification of building ownership is one of the reasons of absence of widespread energy efficiency practice in healthcare

facilities. This is due to non-clarity of upcoming steps and changes in frames of implementation of health reform. Local authorities are waiting for the finalization of the healthcare reform, which supposes to introduce a new management system for public healthcare facilities' administration and organization. Once the reform process is completed, the aspects related to property rights for buildings of medical institutions will become clearer.

Implementation of the healthcare reform will lead to a shifting of responsibilities for maintenance and funding of primary and secondary healthcare facilities. The responsibilities will be reallocated between municipal and regional authorities with the appropriate transfer of hospitals' facilities that are under their jurisdiction. Thus, today municipalities do not see feasibility of capital investments into their facilities, which soon might be transferred to other authorities.

According to the management of healthcare facilities, the development and adoption of a national energy efficiency improvement strategy for healthcare facilities will allow to implement financing mechanisms for energy efficiency projects with attraction of funds from local and state budgets, as well as financial resources of international finance and donor organizations.

In frames of this research, publicly available information about projects, implemented by municipalities with the financial support of international financial and donor organizations, was taken. The analyzed data indicates that total number of energy efficiency projects in hospitals is quite low compared to other sectors.

The implemented energy efficiency projects in medical institutions were financed mainly on the terms of co-financing from local budgets and attracted loan or grant resources of international financial and donor organizations.

It should be mentioned, that effectiveness of energy efficiency projects in healthcare facilities is influenced by the peculiarities of building operation. For example, quite positive results are achieved by implementing low-cost measures, primarily establishment of energy management system in hospital facilities. Still certain barriers arise, when we talk about the development and implementation of energy efficiency projects in healthcare facilities.

It should be noted, that limited financial resources are one of the main issues for municipalities regarding implementation of overall thermal modernization projects in hospitals. The budget reform has created conditions for growth of financial capacity of municipalities. However, it can be applied mostly to financing low-cost energy efficiency measures in healthcare facilities. Thus, municipalities have to look for opportunities to attract additional financial resources, when planning implementation of overall thermal modernization projects measures.

The most feasible financial conditions of energy efficiency projects in healthcare facilities could be with the following breakdown:

- local budget funds – 20-30%;
- state budget funds – 20-30%;
- international financing institutions (IFI) – 40-50%, including a grant component;

- private investors should be involved on conditions of 100% project financing.

Very often representatives from municipal sector completely excluded the option of attracting Ukrainian commercial banks financing, due to high loan cost, as well as significant credit relations risks. At the same time, analysis of the existing conditions for projects financing from public, private and international sources shows that the attraction of these funds for most municipalities is problematic. This is primarily due to the limited financial resources, as the investment demand in the energy efficiency sector of public buildings exceeds all available offers by several times. Additionally, it should be noted, that co-financing from international financing institutions and the state budget approach is quite complicated due to different procedures of money allocation, procurement, implementation control with involvement of external consultants (therefore increase the project costs), etc.

In particular, international financing institutions may decide on financing based on projects' pre-feasibility study, while applicant must necessarily have design documentation with the conclusion of the state construction expertise in order to receive funds from the state budget. It means, that the time interval between the decision of the international financing institution and the decision of the state authority on project financing will exceed 1 year, which may negatively affect the project development.

Municipalities can rely on partial support for energy efficiency projects from the state budget in the form of various types of subventions. Today, the Law «On the State Budget of Ukraine for 2018» [6] provides 7 types of subventions, but only one of them [7] has a specific purpose, which is the healthcare development in rural areas. It provides opportunities to finance energy efficiency projects in rural healthcare facilities.

The adoption of the Law on performance-contracting with ESCOs [8] in 2015 created certain framework conditions for attracting private investments for financing of energy efficiency projects in public buildings. However, currently, most of private investors offer municipalities only low-cost investment measures due to the lack of sufficient amount of their own funds and fail to finance projects of overall thermal building modernization. Until now there aren't any examples using of public and private partnership for energy efficiency projects. In this regard, it should be considered, that the law on public-private partnership is not working. Moreover, due to the legislation gaps, even the indicated low-cost measures are not always effective and, in some cases, lead to unforeseen results for customers.

Currently, opportunities to attract credit resources from international financial organizations are also limited for most municipalities.

European Bank for Reconstruction and Development (EBRD) and European Investment Bank (EIB) provide credit financing only to large investment projects in the amount starting with 5 million EUR (for EBRD). This means that the total investment into the project with the local contribution has to be at least 10-30% higher depending on the requirement of international financing institution.

Thus, such credit funds are available in fact only to large cities (with more than 100 thousand citizens). While such credits are not available at all to major part of small cities (up to 50 thousand citizens) and medium sized cities (50-100 thousand citizens), share of which is more than 90% of the total number of Ukrainian cities. In this regard, in Ukraine there are 45 cities with more than 100 thousand citizens and total population of 17.3 mln., that can easily attract credit resources.

The Nordic Environment Finance Corporation (NEFCO) provides quite attractive credit conditions for small projects for municipalities, but credit capacities of this institution are also limited, which does not guarantee a positive review of a project application.

Participation in pilot grant projects for most municipalities is also problematic, as such projects are rare. At the same time, municipalities' access to IFI credit resources might be improved as soon as the administrative-territorial and health reforms will be completed.

In particular, it will be possible to develop energy efficiency projects for several healthcare facilities, at the level of united territorial communities and hospital districts, which will increase the attractiveness of their financing with the EBRD and the EIB participation.

Over the past three years, Ukrainian government made high efforts in order to improve energy efficiency legislation, as a result of fulfilling Ukraine's commitments to the European Union and the European Energy Community. In particular, the adoption of the Law of Ukraine «On Energy Efficiency of Buildings» [9] and planned introduction of secondary legislative acts will significantly improve the framework for projects development.

However, there are certain issues related to budget allocation regulations. For example, the Budget Code limits budget expenditures planning by only one year, which complicates the financing of energy efficiency projects as they require longer time to planning and implementation [3].

The budget planning procedure does not take into account peculiarities of the energy efficiency project process. As a result, there are widespread cases where the expenditures planning for energy efficiency projects are carried out only on the basis of the formal fact of project documentation availability, but without consideration of need for pre-financing measures for buildings technical inspection and carrying out energy audit.

Implementation of projects in healthcare facilities is also complicated due to the old state construction norms (DBN), which establish construction and reconstruction requirements of healthcare facilities. In particular, according to the existing standards in medical institutions it is prohibited to implement ventilation systems with recuperation, as well as LED lamps. Unlike European practice, in Ukraine, it is forbidden to use foam polystyrene for insulation of fencing structures and it is allowed to use exclusively mineral wool materials. These restrictions lead to inability of implementation of modern energy efficiency solutions in hospitals

and their unjustified cost increase.

A poor quality of the city's project proposals is also a general problem, first of all due to the lack of energy efficiency experts.

In particular, there are numerous cases where applications are prepared without consideration of buildings' technical conditions. Attention is drawn to the low quality of energy audits previously conducted for public buildings by cities in order to include them to project applications. Based on energy audits' results, reports do not reflect information about buildings' technical conditions and proposals for their additional construction examination. Most of energy audit reports do not include comprehensive analysis and assessment of different types of energy resources consumption. Reports often offer a template package of measures for heating systems or envelope insulation without proper justification of certain solutions, equipment and materials. At the same time, they lack proposals for modernization of ventilation systems (at least installation of minimal number of heat exchangers or air valves into windows), lighting, energy-intensive equipment replacement, water consumption optimization, as well as implementation of automated energy consumption management systems.

Most of energy audit reports do not take into account a need to finance preparatory and rehabilitation works, without which it is impossible to carry out an overall thermal modernization.

Poor quality of design documentation is related to the problem of skilled developers' involvement. In some cases, designers are limited by budget requirements for an application of the lowest possible prices for materials and services during further projects implementation phases. This leads to the fact that, on the one hand, the quality and effectiveness of a project is reduced, and on the other hand, it does not cause an interest of skilled construction and installation companies to participate in such projects implementation. At the same time, there are rare cases when construction companies, that won tenders on projects implementation, can not perform work within the established budget and are forced to resort to deception in such situations, playing on the price and quality of materials and equipment.

Along with this, procedure of permits obtaining from the State Architectural and Construction Inspection also need to be improved at the beginning of construction works. Such procedures and requirements to energy efficient project developers should be as simple as possible and shortened in time.

A common problem is also the lack of skilled workers during a construction phase. In addition, there are cases in which contracted companies are not able to provide skilled workers for the construction process.

According to the Sustainable Development Strategy «Ukraine-2020» [10], ensuring energy efficient energy consumption is one of the state priorities. In pursuance of this Strategy, local authorities have developed and implemented regional and municipal programs that, among other tasks, include energy efficiency measures for buildings in the budget sphere, including health facilities. Based

on these programs, each local authority during the budgeting period foresees the financing of specific energy efficiency projects.

Information about such projects is not summarized or systematized at the national level, so currently it is not possible to determine the total amount spent by local authorities on improving energy efficiency of healthcare facilities.

At the national level, there is neither state program for energy efficiency increase in healthcare facilities, nor a target article in the state budget of Ukraine for financing energy efficiency measures in the healthcare sector. The National Health Reform Strategy for Ukraine for 2015-2020 [11] does not provide financing measures in order to improve the energy efficiency of buildings of medical institutions.

At the same time, the state budget of Ukraine provides several items of expenditures, which are directed for financial support of regions and territorial communities, and chief controllers of which are the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine and the Ministry of Finance of Ukraine. The procedures for using these funds are determined and approved by separate acts of the Cabinet of Ministers of Ukraine, which enable local authorities to use part of these funds to improve technical condition of healthcare facilities and increase their energy efficiency.

In particular, the Law «On State Budget of Ukraine for 2018» [6] provides expenditures in the form of subventions and via State Fund for Regional Development, mainly managed by the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine. Thus, the State Budget of Ukraine for 2018 provides more than 15.57 billion UAH for the regional support. However, which proportion of this amount can be spent for energy efficiency projects implementation in healthcare facilities depends entirely on decisions of local authorities.

During the preparation and implementation of energy efficient projects in medical institutions, municipalities should be guided by the requirements of current legislation, to take into account the existing practice of similar projects in public buildings, as well as conditions to attract financial resources.

In order to attract financial resources for energy efficient projects, municipalities first of all should carry out a number of steps that can be divided into several stages.

The first stage is preparatory, which should define the following:

1) Monitoring of energy consumption in buildings.

2) Preliminary assessment of the energy saving potential including rough estimation of saving of energy and funds; cost of the project; payback period.

3) Elaboration on the options of possible funding of the project, as this will define the type of documents that need to be prepared.

The second stage is pre-project, which should foresee technical and financial aspects.

Technical aspects should include:

1) Selection of service providers for technical examination and energy audit or setting up internal team for this task.

2) Assessment of the building:

- collection and verification of data on operational characteristics;
- evaluation of the technical condition of structures and engineering systems;
- energy audit conduction.

3) Calculation of the forecasted reduction of energy consumption and monetary savings.

At the same time, financial aspects should contain:

1) Calculation of the tentative cost of energy saving measures.

2) Involvement of project financing:

- analysis of available sources of project financing;
- preparation of information on conditions of financing from different sources.

In order to implement energy efficiency projects successfully, a specific action plan should be developed, which should include the following:

1) selection of appropriate energy efficiency, water conservation, and renewable energy measures;

2) creating project partnerships to implement these measures;

3) exploring possible financing opportunities and involving needed financial resources.

After that a detailed feasibility study should be conducted, which should cover the estimation of energy and cost savings, that can further allow to verify planned efficiency measures in an appropriate, cost-effective priority.

Summing up, it should be noted that implementation of energy efficient measures on the basis of project-oriented approach could reduce significantly the negative impacts of energy use on the environment and increase the accessibility of primary energy reserves. It is important to shift the emphasis in energy efficiency projects' portfolio development into the direction of the intensive usage of renewable energy in order to reduce the amount of greenhouse gas emissions, and thus minimize anthropogenic pressure on the environment.

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GROUNDING OF DIRECTIONS AND INSTRUMENTATION OF COMMUNITY PARTICIPATION IN THE DEVELOPMENT OF THE TERRITORY

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The CLEAR conceptual system demonstrates that effective community participation is possible: all key factors that it determines and which enhance

participation are open to the influence of government officials and politicians (Table 1)

Table 1

Components of diagnostic tools CLEAR

Key factor	Key variables	Aims of policies	Local assessment (min 1 – max 5)
Can do	Level of education, job security, demography, resources, skills / knowledge	Capacity building, training and support for volunteers, leadership development	2
Desire	Identity, homogeneity, trust, citizenship	Community development, social partnership, development of a sense of citizenship and self-identity	3
Powers	Types of public organizations, events, public infrastructure	Investing in the development of public infrastructure, improving communication channels between the authorities and the community	3
Invitation	Various forms of citizen participation	Forms of participation, strategy, coverage of different categories of the population	2
Answer	The authorities are capable of responding to the expectations of citizens - through special events, ongoing training and feedback	Hearing, Prioritizing Activities, Feedback and Education	2
Average value			2,4

Source: [1]

Understanding these factors is the key to developing a policy that is, in its substance and substance, democratic, community-based, and the well-being of its inhabitants. We will comment on expert-defined points on the local evaluation of these factors. The average value of 2.4 is slightly lower than the average level, therefore, the state of development of civic participation as a systemic phenomenon in the development of the territory of the Ryabinovsky Old-Russian district is unsatisfactory. It should be emphasized here that somewhat higher scores, compared with other factors, were derived from factors such as «desire» and «authority». In our opinion, the presence of a successful community on the territory of the district, as well as the fact that its members are 22% of the county's population (that is, every fifth resident), testifies to the desire of residents to nevertheless participate in the development of the territory and create the future of the community by yourself. This is also emphasized by the results of a survey of the population of the community — where more than half of the respondents (56.1%) in one form or another are prepared to take part in various socially significant events in the

settlements of the Ryabinovsky Starostinsky District. It also shows a high level of cohesion and trust among the residents (the latter, in particular, shows the positive experience of payment of membership fees within the framework of the community, which are directed at various activities initiated by the organization). At the same time, one can not ignore the fact that the population of the district is heterogeneous, with just over a quarter of the population not officially registered in the district, which to a certain extent affects the interrelationships of the community. Therefore, the estimation by the factor of «desire» is slightly higher than average — 3 points out of 5.

The active activities of the Lumen community is the developed cooperation of this organization with local self-government bodies and regional authorities (as evidenced by joint participation in the development, implementation and financing of projects), the membership of local self-government officials in the association, as well as the active participation of these commuities in international projects explain the higher than average rating by the factor of «authority», but lack of infrastructure development for the development of other forms of civic participation predetermines a general view of assessment — 3 out of 5. Lower then average estimates are explained due to other factors:

- The general level of education and employment, the availability of resources and opportunities for the development of civic consciousness (low level), but softened by a significant proportion of youth aged 18-35 years (27% of the population);
- Underdeveloped forms of public participation, inadequate activity (and openness) of residents revealed during public opinion polls, insufficient representation of interests of all categories of the population in community activities (projects implemented mainly for young people and children);
- The poor assessment of the inhabitants of the deputies, which indicates that the authorities are not able to fully respond to public requests and satisfy the needs of the population, etc.

On the other hand, using the approach used to calculate the community sustainability index (Table 2), we can identify the strengths and factors that hamper the development of various forms of civic participation in local self-government.

Consequently, assessment of the conditions and preconditions for the development of various forms of civic participation in local government and communities using the CLEAR diagnostic tools and the Sustainability Index makes it possible to identify, on the one hand, the readiness of residents (and existing conditions) for more active involvement of the public in the development of the territory, on the other hand, an environment for the realization of this activity (i.e. the activity of the communities and its results on the establishment and development of civic participation in the territory, on the basis of which it is possible to identify the strengths and weaknesses the parties to the development of forms of public participation and communities (Table 3), which will allow to further identify the future directions of action in this area and the corresponding mechanisms.

Table 2

Indicators for assessing the community sustainability index

Key indicator	Description (components)	Local assessment (min 1 – max 7)
Legal environment	Registration	2
	Operations	2
	Administrative obstacles	2
	Taxation	2
	Local legal capacity	6
Organizational capability	Local centers, distribution	5
	Strategic planning	2
	Internal management structure	3
	Personnel support	6
	Technical support	5
Financial capacity	Local support	6
	Diversification of resource sources	6
	Fundraising	6
	Income received	6
	Financial Management Systems	4
Protection	Co-operation with local and central authorities	3
	Policy initiatives on protection	5
	Lobbying	5
	Local initiatives for legislative reform	6
Provision of services	A range of services and products	5
	Responsibility to the community	4
	Reach the population	6
	Coverage of expenses	6
	Government perceptions and support	4
Infrastructure	Resource Centers and Medium Support Organizations	6
	Grant Providers Local	6
	Coalition	4
	Teaching	6
	Cross-sectoral partnership	4

Public reputation	Coverage of the media	5
	Public perception of communities	5
	Government / business perception of communities	4
	Public relations	5
	Self-regulation	5
Average value		4,6

Source: [2; 3]

On this basis (Table 3), it is possible to identify promising directions of action to promote public participation in the development of the territory of the Ryabinovsky Starostinsky District of the Kirikivska regional territorial community:

1) Development of the potential of public participation (human and social capital);

2) Creating a proper legal field at the local level and the information environment.

At the same time, it should be taken into account that decentralization processes significantly change the powers of local self-government bodies, their levels, representation, etc. So, in place of the executive committee of the village council in the framework of regional territorial community the institution of old age comes. Under such conditions, on the one hand, the question arises of the need to strengthen public participation in the issues of internal communities, and on the other hand, the question is raised about the legal basis for such participation, their correlation with the role and powers of old age. The latter is determined by the Laws of Ukraine, as well as detailed in the subordinate acts of the local level — the Statutes of the regional territorial communities, as well as the Regulations on the head of state (see paragraph 2.1). Thus, according to the Law of Ukraine «On Local Self-Government in Ukraine» [68], the head of state (Article 54-1), in particular:

• participates in the preparation of a draft local budget on the financing of programs implemented in the territory of the relevant Oldostinsky district (item 6);

• makes proposals to the executive committee of the village, settlement and city council on issues of activity in the territory of the relevant Old City district of executive bodies of the village, settlement, city council, enterprises, institutions, communal property organizations and their officials (item 7);

• contributes to the formation and activities of bodies of self-organization of the population, organization and holding of general meetings, public hearings and other forms of direct participation of citizens in solving local issues in the respective village, settlement (item 12).

Consequently, the question of the development of various forms of local democracy, the promotion of self-organization of the population, and encouragement of its civic activity in accordance with the Law «On Local Self-Government in Ukraine», is also assigned to the authority of the village elders.

Public organizations, bodies of self-organization of the population, general

meetings of the population and public hearings, the procedure for which is regulated, in particular [4; 5; 6; 7; 8; 9] appear as an effective, legalized by the current legal acts mechanism for the implementation of public participation in the development of the territory .

Table 3

Strengths and weaknesses in terms of ensuring public participation in the development of the Riabinovsky Starostat

Strengths	Weaknesses
Availability of active communities (communities, Association)	Underdevelopment of other forms of direct democracy (the bodies of self-organization of the population, low coverage of the processes of studying public opinion), other communities
Coverage of a sufficiently large number of population (membership in the public organizations has 22% of the population of the old town)	The lack of proper local legal support for activities and the development of forms of direct democracy
Interaction and cooperation of pubic organizations with local self-government bodies, state structures	Insufficient representation of public organizations (not all groups are covered)
Availability of skills and experience in preparing projects and supporting their implementation	Dissatisfaction with the work of local governments
Assistance to the local self-government body of the public organization	The need of citizens to increase their involvement in addressing issues related to the development of territories
Trust and public participation in public organization activities	Insufficient technical and personnel support for public organization activity, low level of employment and education of the population, low level of access to modern communication channels
Funding of public organization by membership fees and financial assistance from local governments and government bodies	Not enough wide range of products and services of public organizations (mainly projects focused on young people and children of a social nature)
Efficiency of internal structure of public organizations, financial transparency, efficiency of management	Insufficient opportunities to finance and cover the costs of communities activities, etc.

Source: author's development

Guided by the provisions of the current normative legal acts (Law of Ukraine «On Local Self-Government in Ukraine», «On Public Associations», «On the bodies of self-organization of the population», subordinate legal acts), as well as the Charter of Kirikiv settlement, we can characterize promising forms of public participation in the development of the Ryabinovsky Old City district and the necessity (as well

as possibilities) of their local legal settlement (Table 4).

Table 4

Comparative characteristics of various forms of public participation in the development of the territorial community

Criterion	General meeting of citizens, meeting (conference of citizens' representatives at the place of residence	Bodies of self-organization of the population	Public Hearings	Public organization
1	2	3	4	5
Legal basis	Resolution of the Cabinet of Ministers of Ukraine «On Approval of the Provisions on General Meeting of Citizens at the Place of Residence in Ukraine»	The Law of Ukraine «On the bodies of self-organization of the population»	The Law of Ukraine «On Local Self-Government in Ukraine» (for example, the Statute of the regional territorial community)	Law of Ukraine «On Public Associations»
Status	Form of direct participation of citizens in solving local issues.	Representative bodies created by inhabitants; may acquire the status of a legal entity; is an integral part of the system of local self-government	Form of direct participation of citizens in the formation and implementation of policies; are mandatory in relation to certain issues specified by the Law	Voluntary association of individuals for the realization and protection of rights and freedoms, satisfaction of public interests
General goal (tasks)	Protecting and protecting the interests of the inhabitants of the territory through discussion of the most important issues of local life	Creation of conditions for participation of residents in solving local issues; satisfaction of social, cultural and household needs of the population; participation in the implementation of socio-economic, cultural development of the territory, other local programs	Involvement of citizens in participation in the management of state affairs, creation of opportunities for their free access to information on the activities of executive authorities, ensuring transparency, openness and transparency of the activities of these bodies.	Defined by the organizations themselves in the Statutory Documents
Coverage	Population living in a certain territory	Population living in a certain territory	Population living in a certain territory	Voluntary participation of the population irrespective of territorial character

Compe-tence	More than half of citizens residing in the territory (two-thirds in the case of convening a meeting of representatives (conferences)	More than half of the total stock	Participation is voluntary, the authorized membership is not defined	Regulated by the Statute
Decision	The decisions of the meeting are obligatory for the bodies of territorial self-organization of citizens, all citizens who live on the corresponding territories; are taken into account by local self-government bodies in their activities	The body of self-organization of the population on issues assigned to its powers may make decisions organizational and administrative nature	Minutes of the meeting; proposals are subject to mandatory review by local government bodies	They are not endowed with powers other than those provided for by law
Rights regarding the realization of citizens' rights to participate in the develop-ment of territorial issues	To address proposals to the relevant Soviets, state bodies, other bodies of local and regional self-government, heads of enterprises, organizations and institutions; receive public information	Participate in meetings of relevant local councils and their executive bodies related to their activities, as well as in considering issues initiated by the body of self-organization of the population, with the right of an advisory vote; receive public information; to make proposals to local self-government bodies; making proposals to the Social and economic development projects and programs, and draft local budgets	May be initiated by citizens (initiative group), are mandatory in relation to certain issues specified by the Law	To apply to bodies of state power, bodies of local self-government with proposals; receive public information; to participate in the development of projects concerning their sphere of activity and important issues of public and public life; to participate in the work of advisory, advisory and others, subsidiary bodies in power structures.

Competence / functions	Consideration and discussion of any issues related to local self-government, listening to information (reports); making appropriate proposals; the election of public committees and councils, the establishment of their composition and number, approval of the costs of their functioning	Issues attributed to the authorities of local self-government; representative, organizational, consulting, controlling functions, information, assistance in the work, etc .; own and delegated authority	Consideration and discussion of any issues related to the exercise of local self-government, within the limits of the Constitution and laws of Ukraine, hearing of information (reports); making appropriate proposals	Participation in the process of formation and implementation of state policy, solving local issues (consultations, participation in drafting legal acts, participation in consultative and advisory bodies)
Property and financial basis / organization of work	Funded by the budgets of the respective councils; the organization of work is carried out in accordance with the national programm	May be in operational management of property and finance to carry out their activities; proper property and finances; organization of work in accordance with the national programm and its own decisions	Funded at the expense of the budgets of the respective councils, the central government, the state budget; organization of work in accordance with the national programm	May have their own property and finances; the organization of work is carried out in accordance with the Charter

Source: author's development

So, commenting on the data in the table 3.4 we note that comparing such forms of public participation as the General Meeting of Citizens at the place of residence, the bodies of self-organization of the population, public hearings and the activities of the Public organizations, it can be concluded that the largest «legal personality» is owned by the bodies of self-organization of the population and communities, as their activities envisage making specific decisions that are to be implemented (and can not be considered only as a proposal).

At the same time, the communities' activity is not related to a specific territory, it does not ensure the representation of all residents of the community. It should also be noted that the body of self-organization of the population is, by definition, a representative body and a component of the system of local self-government (and, accordingly, the form of the exercise of direct democracy).

Comparing «territorially bound» forms, such as the General Meeting of Citizens at the place of residence, it should be noted that the General Meeting is a kind of basis for the establishment and operation, while the latter is an instrument for implementation of the decisions of the General fees.

Consequently, in the pastoral districts a special role should be given to bodies of self-organization of the population. Indeed, the «strong» funds are not only a reliable partner for the village elder in the exercise of their powers, but also a resource that will help them to strengthen the influence of the entire united community.

In addition, they can be a means of public control from the community of the village or communities of villages belonging to the Old Town district, where the elected headman, for his current activities.

In 2015, some Ukrainian cities (Chernihiv, Cherkasy and Poltava) introduced public budgets for the first time in Ukraine, and respective working groups were created by the decisions of city mayors. By the end of 2016, 18 cities of Ukraine had already been covered by this process, of which 3 were in Sumy Region (Romny, Sumy, Trostyanets). In the end, in 2018, 18 initiatives of the Sumy citizens will be implemented within the framework of the public budget. For their implementation in the city budget 2018 provided 9 million UAH (UAH 5.4 million for local projects and UAH 3.6 million for all-city projects) [10; 11; 12].

The reason for such an active development of participative budgeting in Ukraine is to a certain extent that if the controlling function of citizens (and relevant institutions) in relation to the budget is stipulated by current normative and legal acts and is traditional (but not sufficiently effective and implemented in practice), the party's budget somewhat changes the functional role of public participation in the budget process — citizens appear as co-authors of budget proposals and applications, which allows directing financial resources precisely at those events which, in the opinion of the community is the most problematic. Thus, the party's budget appears as one of the most developed forms of interaction and cooperation between authorities and citizens, in particular, in the budget process.

The party's budget (hereinafter PB) is a democratic process that involves providing citizens (in particular those who formally have no citizenship) the right to distribute part of the funds from the local budget or other budget that concerns them. The participative budget is a relatively new phenomenon in the democratic practice of the territories. At the same time, it has already been proved that municipalities with participating programs improve the lives of their citizens [10; 13]. The main advantages of the participative budget are: increasing the participation of citizens in resolving issues of distribution of funds from the state and local budgets; increase of the level of trust of inhabitants to the authorities, avoidance of social conflicts; increasing trust in local authorities; effective budget management; solving the problems that are most worrying residents of the city, region or country.

The participation budget is an important step towards democracy and the growth of social activity, since it allows residents to develop their own projects and control part of the state and local budgets.

Today, for the exchange of experience between Ukrainian cities on the introduction of the public budget, a specialist group has been set up in the social network Facebook «Public Budget», and relevant information portals are available.

At the same time, it should be pointed out that the introduction of a unified approach to the implementation of the practice of budgeting in cities and rural areas is difficult, given the: technical capabilities (different levels of Internet availability); demographic characteristics (the age structure of the population and the difference

in its educational level determine a significantly different level of the share of PC users in urban and rural areas, the activity of residents on the Internet, etc.); financial opportunities (limited resources of rural budgets on the implementation of an information campaign, creation and support of the functioning of relevant information systems-portals); organizational capabilities (due to the limited financial resources are the complexity of the allocation of specialized organizational structures or at least persons from local government officials responsible for organizing and conducting an information campaign, registration and control of proposals, ensuring the functioning of the information system); the peculiarities caused by the organization of the budget process, the formation and distribution of financial resources in the united territorial communities; peculiarities stipulated by the rights and powers of individual officials, as well as separate components of the system of local self-government bodies in the united territorial communities regarding the representation of the interests of the domestic communities regarding the budget. Please comment on the last one. Thus, according to the current legislation, the interests of the internal communities within the united territorial communities are represented by the village monitor. The range of his powers in accordance with the Provision on the village elder of the Kirikiv territorial community, in particular, with regard to the budget, includes: «participation in the preparation of a draft budget of a territorial community in terms of financing programs implemented on the territory of the respective settlement» [14]. Consequently, the participation of citizens in the budget process (participation in the development of budget proposals) can be implemented: directly, as a rule, advisory and control functions; through the village monitor (by submitting proposals to him); through the body of self-organization of the population — to its own powers, in accordance with Art. 14, item 3 of the Law of Ukraine «On the bodies of self-organization of the population» includes «the introduction in accordance with the established procedure of proposals for projects of local programs of socio-economic and cultural development of the corresponding administrative-territorial units and projects of local budgets». These proposals can be made by the appropriate decision of the community.

Thus, leaving the undeniable need for attracting citizens to participate in the budget process, we consider it expedient to implement organizational measures for the implementation of the practice of the participatory budget in the internal communities of the united territorial communities on the basis of the relevant organizational and administrative decisions of the body of self-organization of the population.

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