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# ECONOMIC SCIENCES

UDC: 338.43

**Samborska O.**

*Candidate of Economic Sciences, associate professor,  
Department of administrative management  
and alternative energy sources  
Vinnytsia National Agrarian University,  
Vinnytsia, Ukraine*

**Kolesnik T.**

*Candidate of Economic Sciences, associate professor,  
Department of administrative management  
and alternative energy sources  
Vinnytsia National Agrarian University,  
Vinnytsia, Ukraine*

**Pronko L.**

*Candidate of Economic Sciences, associate professor,  
Department of administrative management  
and alternative energy sources  
Vinnytsia National Agrarian University,  
Vinnytsia, Ukraine*

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## RESEARCH OF INFLUENCE OF PRODUCTION ACTIVITY OF THE ENTERPRISES ON EFFICIENCY OF MANAGEMENT

### **Abstract.**

*The current state of the economy with the deterioration of economic results, transformational transformations is characterized by the lack of a system of management of the dynamics of growth of economic indicators due to the transition to innovative sources of economic development, which activates the issue of providing such changes in controlled character. The economic development of the region concerns not only financial revenues to local budgets, but also an increase in the overall welfare of the population, through prism of priority directions of development. The path to improving the life and economic development of the Vinnytsia region is possible taking into account transformational processes, but achieving this involves solving the complex of goals and tasks facing management bodies.*

*The current state, trends and problems of reproduction of the economic potential of sustainable development of Ukraine and its regions are investigated. An analysis of the ineffectiveness of enterprises of certain types of activities of the region's economy is carried out. The formation of the system of indicators of the development of regional socio-economic systems is proposed and a systematic and integrated assessment of the economic potential of the development of the Vinnytsia region is carried out. Considerable attention is bought to assess the economic potential of the region, prospects for modernization of social infrastructure and the formation of sustainable economic growth in the region. The basic and strategic directions of rationalization of resource use spheres are formulated on the basis of assessment of minerals, improving the management of the agricultural complex of the region as the main determinants of the effective use of territorial development of regional complexes. The SWOT-analysis of the Vinnytsia region has been conducted, the strengths and weaknesses of development and economic output of the region on cross-border markets and the world arena are characterized. The possibilities of the region are outlined, which will contribute to further competitiveness of the region at the level of other economic regions of Ukraine. Provided threats of development that arise under the influence of external forces that interfere with rapid and sustainable growth. The main problems and priority directions of development of the economy of Vinnytsia region are determined.*

**Keywords:** *development, efficiency, complex, potential, region, growth.*

### **Introduction.**

Economic development of the region is an important component of state development. Achieving higher results of economic and social indicators of development of the region, compared to previous years and determines the essence of economic growth. The development of each region within the country differs from each other, and the level of differentiation is quite significant in terms of public economic policy. Finding ways to reduce economic inequality between regions

and stimulate the development of the poorest of them, justification of new methods of managing the economic development of priority industries and the rational use of resource potential is the goal of economic regional development.

### **Results and discussion.**

Vinnytsia region is a region of industry and agriculture, with a research and production and mineral resource base. The territorial-administrative structure of Vinnytsia region was formed on February 27, 1932.

The territory occupied by the region is 26.5 thousand km<sup>2</sup>, which is 4.4 % of the total area of Ukraine. The population is 1.529 million people (as of January 1, 2021), including the urban population is 51.4 % and rural 48.6 %. There are 6 cities of regional significance, 12 cities of district significance, 6 districts, 29 urban-type settlements, 1328 rural settlements, 46 united territorial communities (42 of them are active). (Main Department of Statistics, 2019). The region is located in the central part of the right bank of Ukraine, along the middle reaches of the Southern Bug River and on the left bank of the middle reaches of the Dniester River. A total of 3.6 thousand rivers with a total length of 11.8 thousand km, they belong to the basins of the Southern Bug, Dniester and Dnieper, 74 reservoirs have been created on the rivers, 4 thousand ponds, the total area of which is about 32 thousand hectares. The length of the region from west to east is 196 km, from north to south - 204 km, it borders with Chernivtsi, Khmelnytsky, Kirovohrad, Zhytomyr, Kyiv, Cherkasy, Odessa regions.

The climate of Vinnytsia region is continental with mild winters and warm humid summers, average annual temperature in summer + 18.6 ° C, + 20.5 ° C, in winter -4 ° C, -6 ° C. The annual rainfall is 520-590 mm, of which about 80% falls on the warm months of the year.

The region is located in the forest-steppe zone, within the Podil and Prydniprovsk region. According to the State Service of Ukraine for Geodesy, Cartography and Cadastre, the indicator of agricultural area is over 76 % and is 2014 thousand hectares, of which almost 50 % - chernozem. According to the size of agricultural lands, the region ranks 9th among the regions of Ukraine. The total area of forests and forest areas reaches 379.9 thousand hectares.

There are about 500 deposits with 18 types of various minerals, dozens of peat deposits, as well as unique deposits of granite, kaolin and fluorite. Healing springs of mineral water have been developed and are operating, in particular with a high content of radon in the city of Hmilnyk, mineral waters called "Myrhorodska" have been discovered. This region is rich in kaolin deposits, which make up 44 % of Ukraine's total resources. Kaolin-enriched wastes are quartz sands that can be used in construction, glass, silicon carbide and fine ceramics, water treatment, and other industries. The region has unique decorative properties of granites, which make it

possible to produce facing slabs, window sills, monuments and other products, and the raw material potential of construction is represented by: rubble, stones, carbonate rocks for local binders, raw materials for coarse ceramics, sands, expanded clay raw materials.

Vinnytsia region has an extensive network of railways (1074.1 km) and highways of national and local importance (9518.5 km). According to the coefficient of transitivity of the territory, Vinnytsia region ranks first in Ukraine. The density of public roads is one of the largest in Ukraine and is 359 km per 1 thousand km<sup>2</sup>. 3 main gas pipelines pass through the territory of the region: Urengoy - Pomary - Uzhhorod, Soyuz, Dashava - Kyiv, 9.3 thousand km of gas distribution networks are used, as well as the Odessa-Brody oil pipeline.

According to the results of economic development of districts in 2018, Vinnytsia region entered the top five, taking fourth place. There are almost 70,000 business entities on its territory, of which 80 % are natural persons-entrepreneurs. As of 1 January 2020, there were 10,294 legal entities operating in the region, of which 94% were small enterprises (of which 79.6 % were micro-enterprises), 5.9% were medium-sized enterprises and 0.1% were large enterprises. 1). According to the table we see that during the analyzed period the total number of operating enterprises in the region increased by 6.0 %. The share of medium-sized enterprises increased by 12.6 percentage points. and was equal to 606, the share of small businesses also has a positive trend and reached 9673 units.

In the general structure of existing enterprises, the largest share at the end of the reporting period is small – 94 %, which is almost 2 percentage points. higher than in 2010. The share of medium-sized enterprises during the analyzed period decreased by 2 percentage points and reached 5.9 %. The share of large enterprises was only 0.1 % (Figure 1).

In modern conditions, the concept of market capitalization, which in essence determines the market price on the stock exchange of registered shares of the enterprise or all its shares, this is the value that can significantly exceed the value of assets on the balance sheet of the enterprise. This is due to the fact that not all assets that have value are included in the balance sheet of the enterprise, such as skilled workers, business reputation, demand for products, markets (Pronko, et.al. 2021).

Table 1

Number of enterprises in Vinnytsia region by size

Enterprise size	Years				
	2010	2015	2017	2018	2019
Number of enterprises, units	7982	9442	9187	9713	10294
Large enterprises	9	12	10	12	15
% to total	0,1	0,1	0,1	0,1	0,1
Medium enterprises, units	623	462	471	538	606
% to total enterprises	7,8	4,9	5,1	5,6	5,9
small enterprises, units	7350	8968	8706	9163	9673
% to the total number of enterprises	92,1	95,0	94,8	94,3	94,0
of which micro-enterprises, units	5933	7653	7329	7758	8189
% to the total number of enterprises	74,3	81,1	79,8	79,9	79,6

A significant share in the total number of operating enterprises are small enterprises in Teplytskyi (97.5%), Pohrebyshche (97%), Shargorod, Khmilnytsky, Kryzhopilsky, Zhmerynsky districts - more than

96%, in Yampil, Kalynivsky and Tyvrivsky districts - less than 90%.

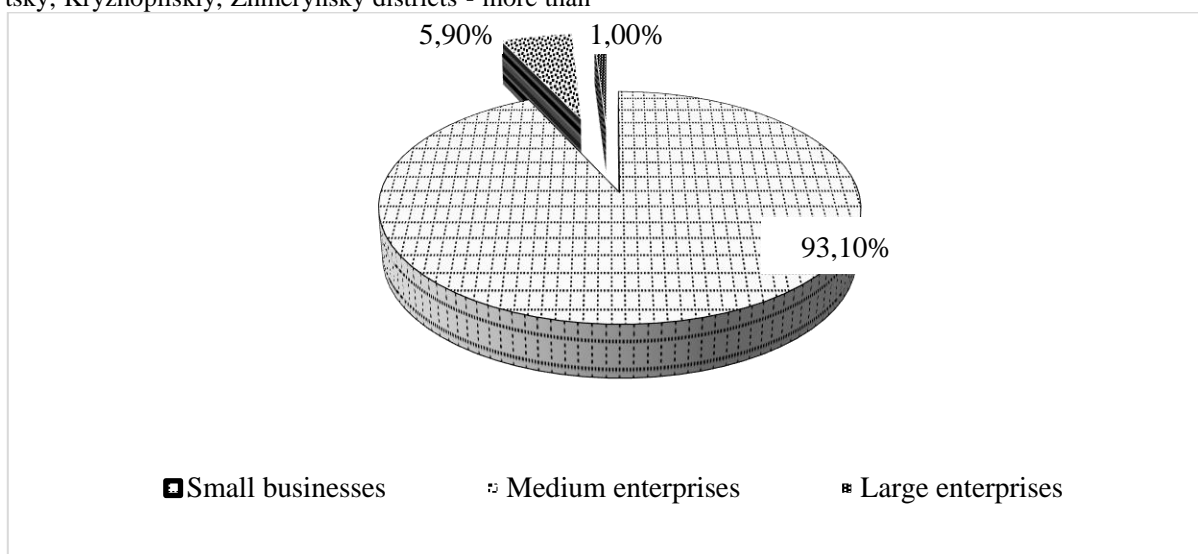


Figure 1. The structure of enterprises of Vinnytsia region in 2019, (%)

Per 10,000 people in 2019, there were 62 small enterprises, according to this indicator, the region ranked 13th among the regions of Ukraine, ahead of Zhytomyr and Khmelnytsky regions. Among the cities and districts of the region, this indicator is above the average in Teplyk district - 102 enterprises and in Vinnytsia - 115. In Yampil (19) and Trostyanets districts there were only 19 and 32 enterprises per 10 thousand people, respectively, which is much lower than the regional average equal.

By types of economic activity, the largest share of small enterprises are enterprises engaged in real estate transactions - 99.4 %, information and telecommunications (98.5 %), 98.4 % - among enterprises of professional, scientific and technical activities, temporary accommodation and food, the provision of other services (98.9 %), as well as small businesses include all enterprises of art, sports, entertainment and recreation. The smallest share is in small enterprises of health care and social assistance (52.8 %), in industry (87.7 %), transport, warehousing, postal and courier activities (87.9 %).

The share of small and large enterprises in sales is 26.2 % and 26.3 %, respectively. During the analyzed period, the share of sold products (goods, services) of small enterprises in total sales decreased by 1.7 percentage points, which negatively affected the rating indicators of the region among the regions of Ukraine - 13th place in 2019, 10th place - in 2018. The share of income from sales of products (goods and services) of medium-sized enterprises in 2019 increased by almost 1 percentage point, which provided the region with 14th place among the regions of Ukraine.

The total income (revenue) received from the sale of products, goods and services during the analyzed period increased from small enterprises by 6.4 percentage points, medium-sized enterprises - by 14.9 percentage points, large enterprises - by 16.3 percentage points,

which indicates the positive dynamics of business growth in Vinnytsia region.

Among the districts of Vinnytsia region, the predominant share is the income received from the sale of products, goods and services by small enterprises in Pohrebyshche district - 80.7%, more than 75 % - Chernivtsi district, a little more than 50 % - in Pishchansky, Shargorod, Orativ, Chechelnytsky, Trostyanetsky and Bershad districts. At the same time, in Tulchyn, Kryzhopil, Haisyn, Illinets districts the share of sales of goods and services by small enterprises in the total sales is less than 15 %. (Main Department of Statistics, 2019).

Despite the fact that more than 80 % of business entities are natural persons-entrepreneurs, the share of employees in sole proprietorships is smaller than their share in enterprises-legal entities (Table 2). Thus, in the reporting year, the enterprises of the region employed 176 thousand people, which is 11 % more than the base period.

A component of the system of social protection is the social guarantees of the state - the realization by the state of the constitutional rights of citizens to receive the most important social goods and services. They receive a profession, income, employment, continuous retraining and professional growth of workers to maintain their competition in the labor market, protection of fundamental human rights. Among the main social guarantees - the right of citizens to choose a place of work and professional activity, the minimum wage and pension. (Samborska O., 2020).

The structure of employment of regional employees in entrepreneurial activities in 2019, about 55 % of employees are involved in the activities of medium-sized enterprises. The share of employees employed in the products created by small enterprises is 30.7 %, which is 1.6 percentage points. lower than in 2010. The share of employees in large enterprises has a positive trend during the analyzed period (+4.4 percentage points) and is equal to 14.5 %.

Table 2

## Number of employees at the enterprises of the region

Number of employees, persons	Years					Deviation +,-
	2010	2015	2017	2018	2019	
large enterprises	16951	23689	19076	24312	25482	8531
% to the total	9,9	16,1	13,3	15,3	14,5	
medium-sized enterprises	99040	72532	72967	82454	96421	-26190
% to the total number of enterprises	57,8	49,2	50,9	52,0	54,8	
Small businesses	55371	51193	51375	51775	54116	1255
% to the total number of enterprises	32,3	34,7	35,8	32,7	30,7	
Of these micro enterprises	19911	20157	19878	20428	25388	5477
% to the total number of enterprises	11,6	13,7	13,9	12,9	14,4	
Total	<b>171362</b>	<b>147414</b>	<b>143418</b>	<b>158541</b>	<b>176019</b>	<b>46570</b>

The positive trend of increasing sales from business activities of enterprises of various sizes and forms of management contributed to the growth of the region's share in the overall rating of Ukraine's economy (Table 3). The volume of sold industrial products in the

reporting year reached a little more than 3 %, which is 1 percentage point above the base year. A significant place in the structure of the country's economy, Vinnytsia region occupies agricultural products - 8.5 % in 2019.

Table 3

## The share of Vinnytsia region in the structure of Ukraine's economy

Indicators	Area share, %					
	2014	2015	2016	2017	2018	2019
Gross regional product (in actual prices)	2,8	3,0	3,1	3,1	3,19	3,2
Volume of industrial products sold	2,2	3,0	3,0	3,1	3,1	3,1
Production of agricultural products	7,9	7,6	8,4	8,2	8,4	8,5
Scope of construction work performed	2,3	2,7	3,4	3,0	4,1	4,2
Capital investment	2,6	2,7	2,3	2,6	3,0	3,8
Volume of exports of goods and services	1,4	2,2	2,7	2,8	3,0	3,0
Volume of imports of goods and services	0,8	0,7	0,8	0,8	1,0	1,1
Volume of retail turnover	2,3	2,4	2,2	2,1	2,2	2,9

The share of the volume of construction work performed increased by almost 2 percentage points and was equal to 4.1 %, the share of capital investment in the reporting year reached 3.4 %, which is 1.2 percentage points exceeds the value of the base period. The amount of revenues from exports and imports of goods and services in the Vinnytsia region also increased and provided a share in the structure of the country's economy in 2019 of 3.0 and 1.0 %, respectively.

In general, the gross regional product in the general structure of revenues of the country's economy during the analyzed period increased by 0.3 percentage points. and amounted to 3.1 %.

Among the regions of Ukraine, the agricultural sector of the region in 2019 ranks first in terms of gross agricultural output per capita, in terms of production of cereals and legumes, sugar beets, potatoes, meat and milk, the number of cows and poultry (Tabl. 4). The average yield of grain crops at the enterprises of Vinnytsia region is 47 hundredweight/hectare. The highest yield in 2020 was obtained at the enterprises of Zhmerynsky, Kalynivsky, Litynsky, Nemyrivsky, Tulchynsky, Tyvrivsky and Barsky districts - 57.5-63.7 centner / ha.

Table 4

## Production of grain and leguminous crops at enterprises of the Vinnytsia region as of 01. 12. 2020

Cities of regional significance	Harvested hectares	Production volume (gross fee) in the initially credited mass, hectares	Yield, from 1 ha of the collected area, hectares
Vinnytsia region	<b>585482,6</b>	<b>29402683,2</b>	<b>50,2</b>
Vinnytsia	–	–	–
Zhmerinka	1634,0	79240,0	48,5
Kazatin	–	–	–
Ladyzhin	–	–	–
Mogilev-Podilsky	–	–	–
Khmelnik districts	–	–	–
Barsky	20545,8	1181173,3	57,5
Bershadsky	31408,3	1226197,2	39,0
Vinnytsia region	16715,8	1195263,9	71,5

Gaisinsky district	25561,6	1103215,5	43,2
Zhmerinsky	25386,9	1549373,3	61,0
Ilinetsky	21640,9	1038439,0	48,0
Kalinovsky	25459,7	1581323,6	62,1
Kazatinsky district	28994,8	1646478,9	56,8
Kryzhopolsky	19337,0	759590,6	39,3
Lipovetsky	28186,0	1485061,7	52,7
Litinsky district	17452,4	1111013,3	63,7
Mogilev-Podilsky	19140,7	727787,7	38,0
Murovanokurilovets	17524,9	742048,2	42,3
Nemirovsky	25340,7	1509988,2	59,6
Oratovsky	24012,0	1120673,3	46,7
Peschansky	12136,6	393070,0	32,4
Pogrebishchensky	35160,4	1390588,7	39,6
Teplitsky	20237,8	848201,0	41,9
Tyvrovsky	16447,8	964740,8	58,7
Tomashpolsky	18806,2	972525,7	51,7
Trostyansky	15756,9	813913,9	51,7
Tulchinsky district	20806,1	1193180,5	57,3
Khmelnitsky	22067,4	1577083,9	71,5
Chernivtsi	17144,1	613169,0	35,8
Chechelnytsky	14935,7	625199,3	41,9
Shargorodsky	24183,0	1236294,0	51,1
Yampolsky	19459,0	717848,7	36,9

The livestock industry at the enterprises of the region during the analyzed period also has a positive trend (Table 5). In 2020, the farms received a total of

653 thousand tons of animal meat, 728.4 thousand tons of milk and 868.5 million eggs.

Table 5

**Production of main types of livestock products by categories of farms in January-December 2020**

Products	January -December 2020	% by January -December 2019
<b>Farms of all categories</b>		
Meat (sold for slaughter of farm animals in live weight), thousand tons	653,0	102,9
Milk, thousand tons	728,4	95,4
Eggs, millions	868,5	93,0
<b>Enterprise</b>		
Meat (sold for slaughter of farm animals in live weight), thousand tons	606,5	103,6
Milk, thousand tons	212,3	104,8
Eggs, millions	369,7	91,9
<b>Farms</b>		
Meat (sold for slaughter of farm animals in live weight), thousand tons	46,5	94,9
Milk, thousand tons	516,1	92,0
Eggs, millions	498,8	93,9

In the context of individual categories of enterprises, we note that the share of volume of animal meat production in 2020 increased by 3.6 %, milk - almost 5 % and equaled 606.5 and 212.3 thousand tons.

Vinnitsia region uses an innovative-investment model of development. In 2017, 24 enterprises in the region have implemented innovative activities and provided an innovative product worth more than UAH 454.7 million.

An important indicator characterizing the level of development of the region's economy is the gross re-

gional product (GRP), the size of which during the analyzed period increased more than 2.5 times and amounted to 111 498 million UAH. (Figure 2).

The growth of the indicated indicator is due to an increase in it in the gross domestic product of Ukraine. At the end of the reporting year, the gross domestic product was 3.1 %, which is 0.3 percentage points above the basic period.

Such changes contributed to an increase in the amount of gross regionally product of Vinnitsia region per person (Figure 3).

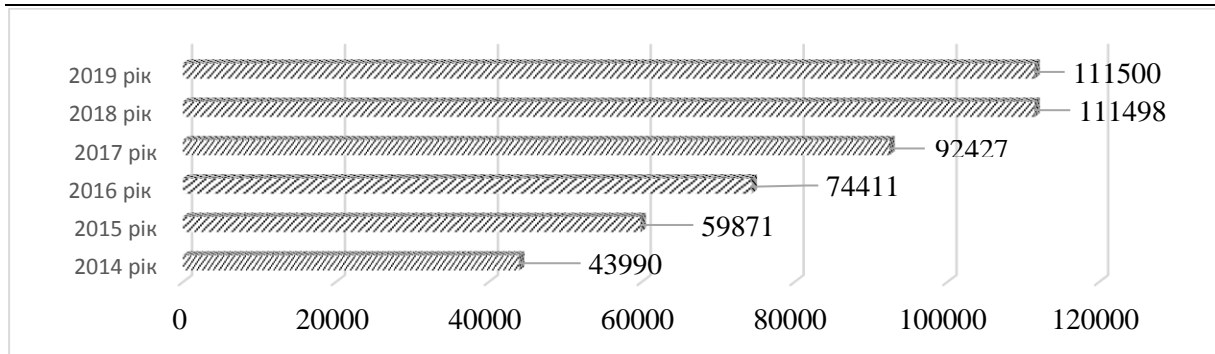


Figure 2. Gross regional product of Vinnytsia region 2014-2019, UAH million.

For the period of 2014-2018, the gross regional product based on one person increased more than 2.5 times and amounted to 71 104 hryvnias. After 2018, we observe a sharp decrease in the volume of the gross regional product (the rate of change of 190 %). Thus, at the end of 2020, per person received 37569 hryvnia of the gross regional product of the region.

The main factors that influenced the growth of gross value added are an increase in the volume of industrial production, the production of consumer goods, providing various types of services and the production of gross agricultural products.

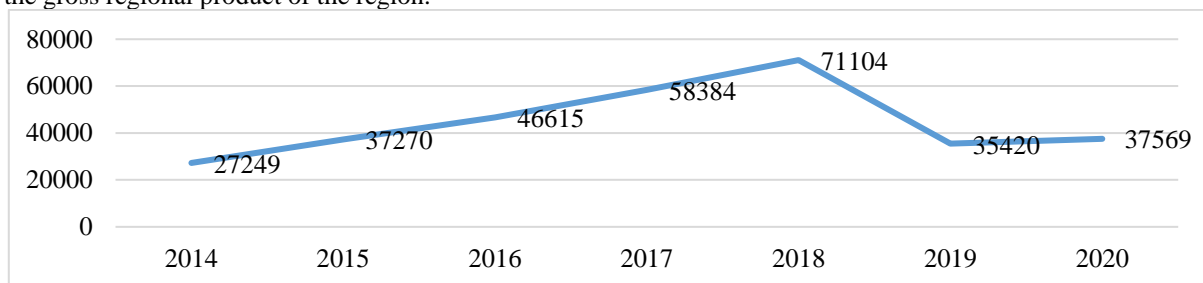


Fig. 3. Gross regional product of the Vinnytsia region per person in 2014 -2020, (UAH.)

The growth of the share of industrial products in the total volume of aircraft is 3.2 percentage points. Influence was to increase the volumes of the processing industry (from 13.3 % to 16.6 %). At the same time, it should be noted the decline in 2017 by the share of agriculture, forestry and fisheries (by 0.6. Compared to 2014 and 3.7 - from 2016).

The share of transport services, information and telecommunication services increased by 1.3 percentage points and 0.8 percentage points. Accordingly, when reducing the share of all services by 2.6 percentage points. The volume of realized industrial products by type of activity in 2014-2020 in Table 6.

Table 6

**Volume of realized industrial products by type of activity**

Indicators	Volume of industrial products sold (goods, services) without VAT and excise duty	
	thousands of hryvnias	in % of all products sold
Industry	78081297,6	100
Mining and processing industry	65952594,2	84,5
Mining and quarrying	1813716,9	2,3
Processing industry	64138877,3	82,2
Production of food, beverages, tobacco	49819782,5	63,8
Production of clothing, leather, and leather goods	284504,2	0,4
Production of wood products, paper production and printing activities	3402549,8	4,4
Chemical production	2078490,7	2,7
Production of pharmaceutical products and pharmaceutical preparations	1119770,1	1,4
Production of rubber and plastic products	1738133,4	2,2
Metallurgical production, production of finished metal products	2123204,7	2,7
Mechanical engineering, except for the repair and installation of machines	2552866,2	3,3
Supply of electricity, gas, and air conditioning	11513180,8	14,7
Water supply, sewerage, waste management	615522,6	0,8

Vinnitsia region has a multi-sectoral industrial complex (Figure 4), more than 1.3 thousand enterprises of different forms of ownership, which produce and process industrial products operate in the region.

Among the industrial production branches, the main place is occupied by the food industry (61.9 %) and supplying electricity, gas, steam and air conditioned air (17.1 %).

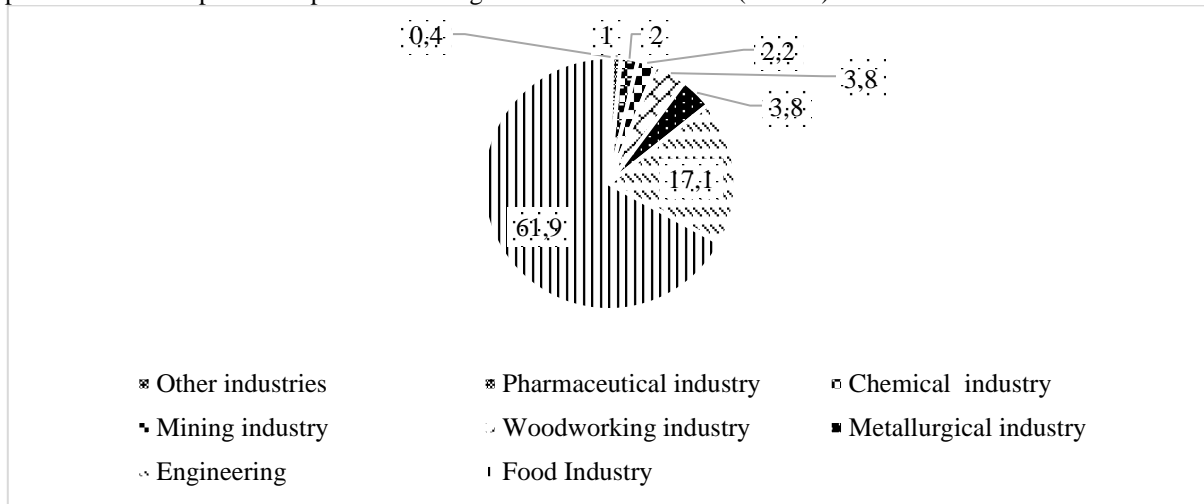


Figure 4. Structure of industrial production of Vinnitsia region, (%)

Source: [1]

Other industries occupy 0.4 % (light industry) to 3.8 % (woodworking industry, production of finished metal products) from the total volume of sales. The share of the chemical and pharmaceutical industry in the overall structure is only 2 %, indicating a low level of development in the region.

The development of the region's industrial sector is confirmed by the index of industrial production (Table 7), which by the end of 2019 was 113.5 %, which is almost 10 percentage points higher than in 2015.

The national rating in terms of sales of products indicates the intensification of the work of industrial enterprises in the Vinnitsia region. Thus, due to the creation of new industries, the share of Vinnitsia in the national volume of sales in recent years has a positive tendency to change. In 2019, the Vinnitsia region became a leader in the volumes of sales of industrial enterprises.

Table 7

Industrial Product Index of Vinnitsia Oblast 2015-2019, %

	Years					Deviation in %
	2015	2016	2017	2018	2019	
Ukraine	95,7	102,8	100,4	101,6	98,2	0,97
Vinnitsia region	104,0	105,3	108,2	99,2	113,5	0,91
Place of the region among the regions of Ukraine	2	13	7	15	1	-

In December 2020, compared to the previous month and December 2019, index of industrial products amounted to 101.0 % and 118.9 %, respectively. Industrial production in 2020 increased compared to the previous year by 5.4 percentage points, due to the growth of sales volumes in the extractive industry and the development of quarries (the rate of change is + 20 percentage points).

Negative is a decrease in the volume of industrial production in the processing industry (4.9 percentage points), due to the fall in textile production, the production of clothing, leather, leather products and other materials, in the manufacture of wood products, paper production and printing activity - by 4.7, in the production of food products, beverages and tobacco products - by 1.0 percentage points.

In the structure of sales of industrial products, the largest share - 83.0 % accounted for processing indus-

try from which: 64.6 % - is the production of food products, drinks, 4.4 % - manufacturing of wood products, paper production and printing activity, 3.3 % - machine building, except for repair and mounting machines and equipment, 2.8 % - metallurgical production, production of finished metal products, except machines and equipment, 2.7 % - production of chemicals and chemical products, 2.3% - production Rubber and plastic products, other non-metallic mineral products, 1.4% - for the production of basic pharmaceutical products and pharmaceuticals, 0.4% - on textile production, production of clothing, leather, leather products and other materials. Enterprises for the production and supply of electricity, gas, steam and air conditioned air are sold 13.9% of products.

Positive dynamics is observed in the implementation of industrial products per person. So in 2019, excluding inflationary processes, this figure increased by 1.3 times compared to 2015 (Table 8).

Table 8

**The volume of realized industrial products in 2015-2019 per person, UAH.**

Indicators	Years					Deflection %, +,-
	2015	2016	2017	2018	2019	
Volume of industrial products sold per person	28113,9	33550,1	42344,0	49170,4	35251,1	+1,3

Thus, the turnover of retail trade, which includes data on retail trade of enterprises (legal entities and in-

dividual entrepreneurs), the main type of economic activity of which is retail, in 2020 amounted to UAH 33702.2 million, which is 4.4 % more than in 2019.

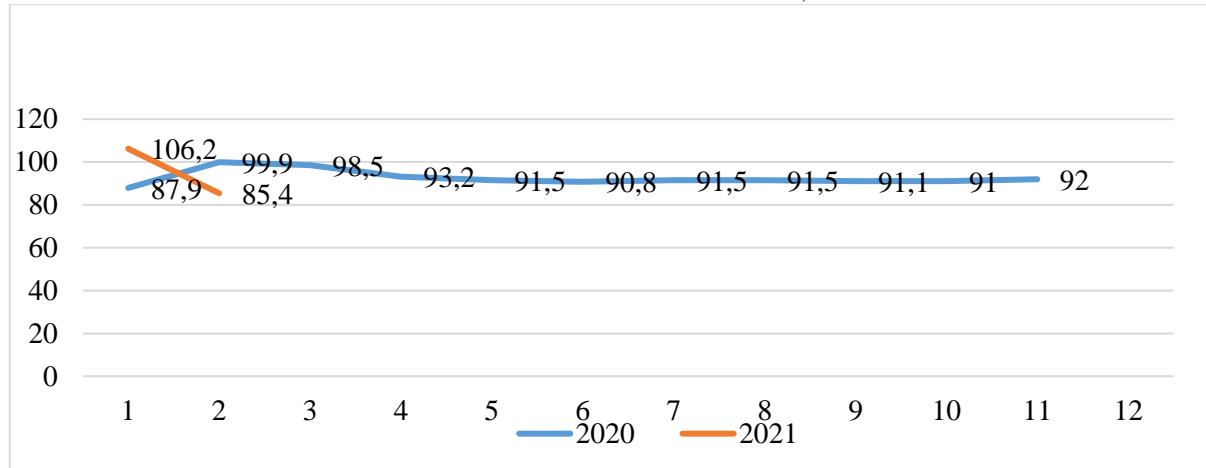


Figure 5. Index of industrial products of Vinnytsia region, %

Retail trade turnover of retail (legal entities) in 2020 amounted to 19835.6 million UAH, which is 6.8 percentage points exceeds the scope of 2019 (Main statistics management in Vinnytsia region, 2019).

The volume of foreign trade in goods in January-November 2020 amounted to \$ 1777.2 million. At the same time, exports and imports were, respectively,

1273.3 and 503.9 million dollars, indicating a positive tendency in the development of trading operations. The balance of foreign trade in goods of enterprises of the Vinnytsia region with foreign partners is 769.4 million dollars. During 2020, foreign trade operations Vinnytsia region was carried out with partners from 145 countries (Tab. 9).

Table 9

**Structure of foreign trade in goods in January 2021**

City	Export			Import			Balance
	thousand US dollars	in % by January 2020	in % of total volume	thousand US dollars	in % by January 2020	in % of total volume	
Austria	192,6	12	0,3	1097,7	16,1	2,8	-905,1
Azerbaijan	211,5	37,7	0,3	-	-	-	211,5
Belgium	791,5	129,4	1,3	201,2	155,4	0,5	590,2
Belarus	2463,1	37	3,9	1658,3	130,9	4,2	804,8
Denmark	186,0	527,1	0,3	201,6	379,1	0,5	-15,6
Palestine	447,0	173,9	0,7	-	-	-	447,0
Egypt	818,8	10,5	1,3	402,3	151,5	1,0	416,5
Israel	1317,1	70,9	2,1	109,0	437,8	0,3	1208,0
India	222,2	1,1	0,4	107,4	103,7	0,3	114,8
Spain	2658,9	23,0	4,2	619,9	95,3	1,6	2039,0
Italy	1183,1	14,2	1,9	681,4	67,9	1,7	501,7
Kazakhstan	452,4	67,6	0,7	197,8	45	0,5	254,6
Cambodia	-	-	-	513,0	232,2	1,3	-513,0
Canada	233,9	132,3	0,4	106,1	66,9	0,3	127,8
China	10095,4	59,6	16,0	7205,6	124,7	18,4	2889,8
Kenya	340,5	-	0,5	-	-	-	340,5
Kuwait	477,3	492,6	0,8	-	-	-	477,3
Lithuania	2994,3	341,4	4,8	166,1	62,7	0,4	2828,2
Netherlands	519,7	5,2	0,8	352,6	54,4	0,9	167,1
Germany	3230,6	141,0	5,1	5375,4	138,7	13,7	-2144,8
Poland	8000,4	61,7	12,7	4653,3	125,0	11,9	3347,0
USA	1578,3	42,1	2,5	3997,2	163,0	10,2	-2418,9
Turkey	3331,4	28,2	5,3	851,0	137,5	2,2	2480,4

Source: Constructed by the authors according to the Main Department of Statistics in Vinnytsia region

The main export articles are fats and oils of animal or vegetable origin (29.7 % of the total regional export volume), vegetable products (27.7 %), ready-made food products (14.5 %), wood and wood products (8,0 %), machinery, equipment and mechanisms, electrical equipment (5.9 %) and living animals, animal products (5.4 %).

In total imports of goods are dominated by machines, equipment and mechanisms, electrical equipment, chemical products and related industries, ground

transport, polymeric materials, plastics and articles of them, wood and products from it, non-precious metals and products from them, textile materials and textile products, vegetable products, ready-made foods occupy 86.8%.

In January 2021, the export of goods amounted to 63016.7 thousand dollars, or 35.9 % compared to January 2020, imports - 39164.9 thousand dollars (113.0 %). The export index of goods to the European Union countries in the month of 2020 is filed in Figure 6.

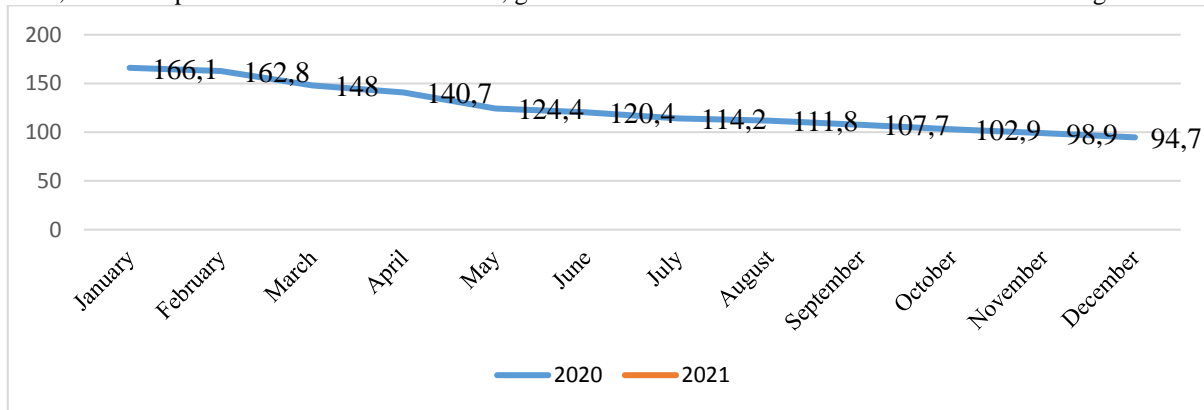


Figure 6. Exports of goods to countries of the world, (thousand dollars)

Source: Constructed by the authors according to the Main Department of Statistics in Vinnytsia region

Positive balance amounted to 23851.8 thousand dollars (in January 2020 it is also positive - 140 848.8 thousand dollars). The coefficient of coverage of imports was 1.61 (in January 2020 - 5,06).

Foreign trade operations were held with partners from 90 countries, the balance to the European Union countries in January 2021 - 9899.6 thousand US dollars, exports for the amount of \$ 29,788.7 thousand, and imports - 19889.2 thousand US dollars (Table 9).

The largest consumers of goods in January 2021 amounting to 2658.9 thousand US dollars was Spain, which reaches 4.2 % to the total volume. No less exports received from the export of goods to Belarus, namely, in the amount of 2463.1 thousand dollars. Among the leaders of the countries with which exports of goods in January 2021 are: China (10095.4 thousand US dollars), Poland (8000.4 thousand dollars), Turkey (3331.4 thousand US dollars).

In 2020, the transport complex of the region was transported 20.5 million tons. Cargo, which is significantly less than 5.3 % against 2019. The cargo turnover decreased by 11.2 % and amounted to 23.0 billion tons, among reasons forbidden to import certain goods to the territory of the European Union.

Railway transported 15.1 million tons of cargo, which is 7.5 % less than 2019. Motor Transport of the region (taking into account transportation executed by individual entrepreneurs) in 2020 carried 5428.9 thousand tons, which is 1.3 % more than the previous year.

In 2020, passenger transport was transported by 104.9 million passengers, which is 50% less than the 2019 indicator and passenger work with a volume of 2718.8 million passes. km, which has decreased by 59.7 % compared to 2019. Railway transported 3.9 million passengers in 2020, which is 60.3 % less than the 2019 figure.

Automobile transport services (taking into account transportation performed by individual entrepreneurs) in 2020 took 49.3 million passengers, which is 35.7 % less than 2019.

The electric transport area was transported by 51.8 million passengers, the total number of transports compared to 2019 decreased by 42 %. All types of transportation and their indicators are less than previous years for one reason, through the pandemic of the viral disease COVID - 19.

Another important indicators of the region's development indicating the prospects for economic growth is the index of agricultural production. According to preliminary calculations in 2020, the agricultural index compared to 2019 amounted to 83.9 %, including 81.4 % in enterprises, in households - 91.2 %, Figure 7.

In the farms of all categories in 2020, 653.0 thousand tons of meat were produced (realization of farm animals in a living mass), which is 2.9 % more than 2019, of which enterprises produced 606.5 thousand tons (more 3.6 %), Table 10.

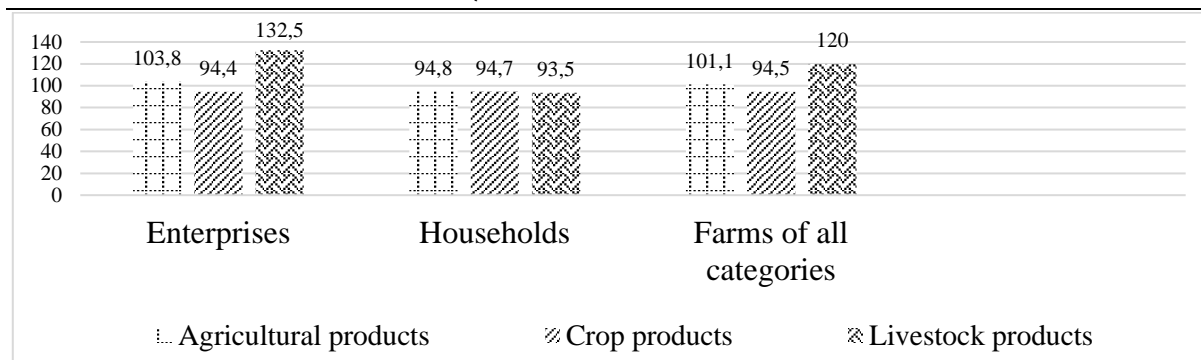


Figure 7. Index of agricultural products of Vinnytsia region in 2019,

Source: Constructed by the authors according to the Main Department of Statistics in Vinnytsia region [1]

As of January 1, 2021, the total number of cattle - 239.8 thousand (decrease by 2.4%), sheep and goats - 28.2 thousand (by 8.1% less), poultry of all kinds - 33.6 million (on 10.4% less), including cows - 120.8 thousand (4% less), pigs

Table 10

Number of farm animals in 2020

Animal category	Thousands of heads	In % by 2019
Farms of all categories		
Cattle	218,6	95,8
Including cows	125,1	95,7
Pigs	241,2	100,1
Sheep and goats	30,5	93,6
Domestic bird	37764,2	101,1
Enterprises		
Cattle	79,6	98,5
Including cows	30,5	100,7
Pigs	101,3	104,2
Sheep and goats	3,4	109,7
Domestic bird	29447,6	103
Population farms		
Cattle	139	94,3
Including cows	94,6	94,2
Pigs	139,9	97,3
Sheep and goats	27,1	91,9
Domestic bird	8316,6	94,7

Assessment of the results of animal husbandry indicates a positive trend in the development of the region in this area. Farms of all forms of ownership raised 218.6 thousand heads of cattle in 2020, which is 95.8% compared to 2019. No less volumes of poultry cultivation in households of the region's population - 8316.6 thousand, which is 94.7% more than in 2019.

The average selling price of milk in Ukraine in 2018 was 7602.4 UAH / ton, which is 368.4 UAH / ton more than in 2014. According to the regions, as of 04.01.2019, the purchase price of class 1 milk without VAT increased by 2% and amounted to UAH 8.71 / kg, the wholesale and sale price of milk with a fat content of 2.5% increased by 8% and amounted to UAH 6.08 / kg., butter – 9% - UAH 129.76 / kg.

However, purchase prices for Class II milk excluding VAT decreased and amounted to UAH 6.93 / kg, for Class II milk from households - UAH 5.06 / kg. According to the Ministry of Finance of Ukraine, the consumer price index of milk in January 2019 was 100.20 %. (Pronko et.al. 2020).

The volume of attracted direct investment (share capital) from the world's countries in the regional economy as of December 31, 2019 amounted to 236.7 million dollars this is 6.4 % more than the volume of investments at the beginning of the year, and per person of the population amounted to 153.2 dollars.

A 54 countries of the world invested capital, the vast majority of investments (83.7% of the total) came from the European Union - 198.2 million dollars, from other countries - 38.5 million dollars (16.3 %). The five main investor countries, which account for 74.2 % of total direct investment, include: Poland - 68.9 million dollars, Austria - 32.0 million dollars, Cyprus - 31.7 million dollars, France - 27.4 million dollars, Germany - 15.7 million dollars.

The top five investor countries, which account for 74.2% of total direct investment, include: Poland - 68.9 million dollars, Austria - 32.0 million dollars, Cyprus - 31.7 million dollars., France-27.4 million dollars, Germany - 15.7 million dollars.

Industrial enterprises remain the most attractive for foreign investors, with 1 186.1 million concentrated dollars (78.6%) of the total volume of direct investment

in the region, including processing – 167.8 million dollars mining and quarrying - 16.7 million dollars. On the enterprises of forest and fish agriculture the 19 million dollars of the USA (to the 8,0 total value) of direct investments are accumulated, in organizations that car-

ryout operations with the real estate is 9,3 million dollars (3,9 that operate in the field of administrative and auxiliary service is 8,5 million dollars (3,6 wholesale and retail trade; to repair of vehicles and motor cycles is 4,0 million dollars (1,7 %).

Table 11

**SWOT - analysis of Vinnytsia region**

Strengths	Weaknesses
Favorable transport and geographical position and high transitivity of the territory	In the structure of gross regional product, industries with low added value have the largest share
Leadership of the region in the agricultural sector and processing of agricultural products	Low level of capacity of communities to effectively and properly manage communal property, provide services to the population and ensure the availability of households and social institutions to the Internet
Developed infrastructure for business support and investment attraction	High level of depreciation of fixed assets in the economy of the region
Active positioning of the region in the field of international interregional and cross-border cooperation	Insufficiently realized potential for attracting investments from all sources of financing
High development of entrepreneurial traditions and competence	There are territorial disparities in the settlement of the territory
High potential for development of the extractive industry.	Imperfection of transport provision of the population and road infrastructure
High potential for the development of recreational services.	High level of plowing, degradation of agricultural lands
Opportunities	Threats
Stimulation of export and innovation activities at the national level	Population migration to more urbanized settlements and abroad
Increasing the investment attractiveness of the country, increasing opportunities to attract investment resources.	The growing global economic crisis, declining demand for some export-oriented goods
Raising funds for regional development projects	Constant changes in the legal framework due to the implementation of structural reforms and political changes at the national level
Increasing the financial capacity of communities,	Increasing the responsibility of communities and expenditures on socio-economic development as a result of the implementation of administrative-territorial reform
Development of information technologies, introduction of e-government, informatization of public authorities.	Low level of environmental awareness and responsibility of the population and businesses

Source: (Samborska O., 2020)

A significant share (60.5%) of foreign capital is concentrated in the city of Vinnytsia - 143.2 million US dollars. Also, significant amounts of foreign investment came to Kozyatyn district - 21.9 million dollars (9.3%), Vinnytsia - 9.4 million dollars (4.0%), Barsky - 8.7 million dollars (3.7%), Tulchinsky - 7.6 million dollars (3.2%), Tyvrivsky - 6.7 million dollars (2.8 %), Kalynovsky - 5.8 million dollars (2.4 %). Among other districts of Vinnytsia region where the most direct investments in terms of volume are the cities of Ladyzhyn, Kozyatyn and Lypovets district.

To develop the economic development of the region, it is necessary to consider the strengths and weaknesses that in the future will accelerate or have a negative impact on the implementation of the optimal scenario of economic growth in Vinnytsia.

Selective structural and technological policies can be the most important tool in this process. Prospects for dynamic growth of industrial production and increased exports of high-level goods directly depend on the pace of technological modernization of the economy. Only the transition to higher standards of world experience

can lead to progress in accelerating the competitiveness of the national economy (Kaletnik G., et. al.2020).

**Conclusion.**

The future scenario of Vinnytsia oblast development should be the implementation of the development program (Development Strategy) through full use of the existing potential, support of the oblast's strengths by internal and external opportunities.

Necessary state directions of realization of development of area are:

- increasing public confidence in state and local authorities;
- intensification of foreign trade cooperation, namely medium-sized businesses with countries, which will increase access of local goods to European and world markets;
- reduction of long-term loan rates, which will promote the development of small and medium-sized businesses and improve the financial capacity of enterprises.

One of the priorities of the region's development will be the rapid completion of administrative-territorial reform and regional development, including human resources development, creation of new high-tech knowledge-intensive and innovative enterprises in both industrial and agricultural sectors of the economy. Successful decentralization reform will contribute to the optimization of state and local authorities, the formation of financially viable territorial communities, the improvement of their social infrastructure, and the creation of new jobs in rural areas.

By developing the infrastructure of medical services, including through SMART - specialization, implementation of e-government, local communities are expanding the range of medical services on-line, thus creating a comfortable environment for the population. An important area of intensification of investment flows in the region is the development, promotion and implementation of investment and investment innovation projects.

One of the main tasks of the authorities was, is and will continue to support business development and production policy aimed at creating new innovative industries, increasing the competitiveness of enterprises, which will create new jobs.

Thus, in 2014-2019, 139 investment projects were implemented in the region, thanks to which 7,635 new jobs were created. In order to help the community and business to realize their innovative potential in the city of Vinnytsia created a municipal innovation and technology park "Crystal".

Investment and innovation infrastructure will be concentrated mainly in the city of Vinnytsia, where there is already an existing base: "Vinnytsia Industrial Park", Industrial Park "Vinnytsia Refrigeration Cluster" and Industrial Park "Winter Sport". Realization of the potential of the transport-geographical position of Vinnytsia region will take place through the development of infrastructure (transport, warehousing, logistics) within the international transport corridors: Go Highway - Odessa-Gdansk highway; Cretan №3; Europe-Asia and the transformation of Vinnytsia International Airport into the main transport hub of Podillya.

Given the strong resource base, favorable climatic conditions and a large number of productive agricultural lands, the region has every opportunity to take a dominant position in the development of priority for enterprises in the agricultural sector - organic production. The products of the enterprises of the organic sector of the region have potential and real opportunities to meet the growing public demand for environmentally friendly products.

Carrying out active educational work, introduction of the mechanism of stimulation of measures on energy

saving, creation of necessary conditions for introduction of energy efficient technologies, and also modernization of existing capacities with use of alternative energy and maintenance of transition to 100 % of renewable energy sources promotes increase of energy efficiency and reduction of energy consumption.

Growing interest of the population of Ukraine in domestic tourism (resort-recreational, ecological, rural green tourism) at a favorable geographical and logistical location with the available transport connection for freight and passenger transportation with the countries of the world, and also in the presence of the developed network of medical and sanatorium-resort institutions, including at the national level, helped open new opportunities for the development of resort areas and ethnic tourism in the region, creating conditions for the transformation of this area into a highly profitable industry, which was a significant factor in accelerating economic growth, employment, filling budgets at all levels.

Thus, the use of most opportunities and all the strengths of Vinnytsia region, provided the leveling or neutralization of the threats identified in the SWOT - analysis.

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*Ходирєва О.О.**Аспірант кафедри менеджменту інноваційного підприємництва та міжнародного бізнесу,  
Національний технічний університет «Харківський Політехнічний інститут»*[DOI: 10.24412/2520-6990-2021-17104-16-20](https://doi.org/10.24412/2520-6990-2021-17104-16-20)**ФОРМИРОВАНИЕ МЕХАНИЗМА СИСТЕМЫ УПРАВЛЕНИЯ НА ПРОМЫШЛЕННОМ ПРЕДПРИЯТИИ***Khodyrieva Oksana**Postgraduate Student, innovative entrepreneurship management and international economic relations department, National Technical University "Kharkiv Polytechnic Institute",  
Kharkiv***FORMATION OF THE MECHANISM OF THE CONTROL SYSTEM AT THE INDUSTRIAL ENTERPRISE****Анотація.**

В статті окреслені окремі моменти формування комплексної системи контролінгу на промисловому підприємстві, що в умовах нестабільного зовнішнього середовища є особливо актуальним. Проаналізовано роботи українських та закордонних вчених, які досліджували питання впровадження контролінгу на промисловому підприємстві. Проаналізовано та узагальнено принципи управління при розробці системи контролінгу промислових підприємств. Уточнено варіанти структури служби контролінгу підприємства та запропоновано їх комбінацію. Описано процес розробки і впровадження системи контролінгу. Розроблено модель алгоритму впровадження системи контролінгу на промисловому підприємстві, в якому запропоновано нову стадію: «мотивація інноваційної діяльності».

**Abstract.**

The article outlines some aspects of the formation of a comprehensive controlling system at an industrial enterprise, which is particularly relevant in an unstable environment. The works of Ukrainian and foreign scientists who studied the implementation of controlling at an industrial enterprise are analyzed. The principles of management at development of system of controlling of the industrial enterprises are analyzed and generalized. The variants of the structure of the controlling service at the enterprise are specified and their combination is offered. The process of development and implementation of the controlling system is described. A model of the algorithm for implementing the controlling system at an industrial enterprise has been developed, in which a new stage is proposed: "motivation of innovative activity".

**Ключові слова:** контролінг, система управління, фактори розвитку, економічна ефективність, мотивація інноваційної діяльності.

**Keywords:** controlling, management system, factors of development, economic efficiency, motivation of innovative activity.

**Introduction.** The constant development of enterprise management systems has led to the fact that the issue of priority of own resources and capabilities of the organization came to the fore. In market conditions with constantly changing external and internal factors, each company must adapt to the changes. Management of enterprises in today's dynamically changing environment requires a comprehensive solution to numerous problems caused by both external and internal factors. The lack of complete information about the current state and prospects of business development complicates the process of applying effective management decisions. In modern conditions, the process of enterprise management requires a comprehensive solution to numerous problems using new approaches to management. Currently, industrial enterprises as sufficiently isolated economic systems are of particular interest in terms of forming a controlling system, as they are characterized by a high degree of interdependence of management decisions, dynamic development.

**Analysis of recent research and publications.** The methodological basis for solving this problem is

the work of foreign economists who cover the experience of setting up controlling systems: - A. Idrisov, A. M. Karminsky, N. P. Olenev, A. G. Primak, S. G. Falko. A significant contribution to the adaptation of the theory of controlling to modern conditions of the domestic economy was made by: O. E. Shamkalovich, S. O. Khayluk, M. V. Tarasyuk, V. S. Rudnytsky, O. V. Prokopenko, J. M. Petrovich., J. V. Panas, E. A. Utkin, I. A. Markina and others.

**Presentation of the main material of the research.** The solution to the problem of forming a comprehensive controlling system, in our opinion, should be divided into several stages:

- determining the specifics of the conditions in which the management system is improved;
- development of an algorithm for the planning process within the controlling system at an industrial enterprise;
- setting boundaries and conditions for the model being developed.

It should be noted that currently large businesses give the controlling system significant functions. In this

case, the formation of the volume of implemented controlling functions is influenced by the following factors: the size of the business entity (number of employees, production volume); the level of diversification of production and range of industrial products; the state of competition in the market; qualification of management staff; qualification of employees of the controlling department; financial condition of the industrial enterprise; understanding by the company's management of the importance and usefulness of controlling functions. When implementing a controlling system at the enterprise, it serves as the main provider of information for enterprise management and covers all areas of the enterprise (investment controlling, marketing controlling, financial controlling, strategic controlling, etc.).

Controlling, being at the intersection of accounting, analysis, information support, control and coordination, orients the company's efforts towards achieving the set goals. It connects all management functions, integrates and coordinates them. At the same time, controlling does not replace the management of the enterprise, but only takes it to a qualitatively new level, being a kind of self-regulatory mechanism in the enterprise:

1) controlling, concentrating the goals of management, allows you to direct all the efforts of the enterprise in the future, to establish future changes in its obligations to employees, partners, investors [2];

2) controlling involves the search for "bottle-necks" in the enterprise [3];

3) controlling analyzes deviations from the planned strategic program [3];

4) controlling timely adjusts the goals of the enterprise in the system of indicators taking into account the relevant changes in the market [5];

5) controlling minimizes deviations in the achievement of current goals, helps to identify the causes of deviations of the actual performance of the enterprise from the planned and allows you to make adjustments to the plans [6];

6) controlling motivates the company to innovate.

The following options for positioning the controlling service in the organizational structure of the enterprise are most often offered:

1) is a part of divisions of the financial and economic block and is subordinated to the financial director;

2) remains an independent structure and is directly subordinated to the director of the enterprise.

In industrial enterprises, there are two main ways to create a structure of the controlling service:

1) In accordance with the functions of management. Each function is supported by a controller or group of controllers (Figure 1).

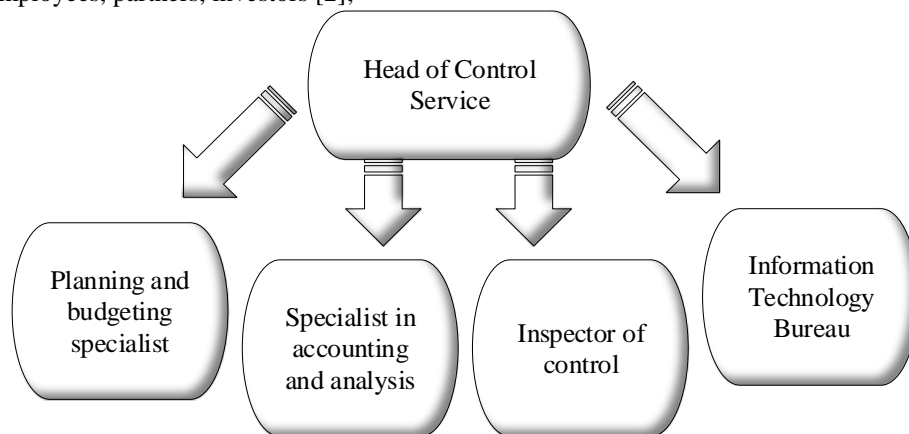


Fig. 1 The structure of the controlling service in accordance with the management functions

Source: formed by the author on the basis of [4]

2) in accordance with the functional areas of the enterprise (production, sales, procurement, finance). A controller or group of controllers is assigned to each sphere (Figure 2).

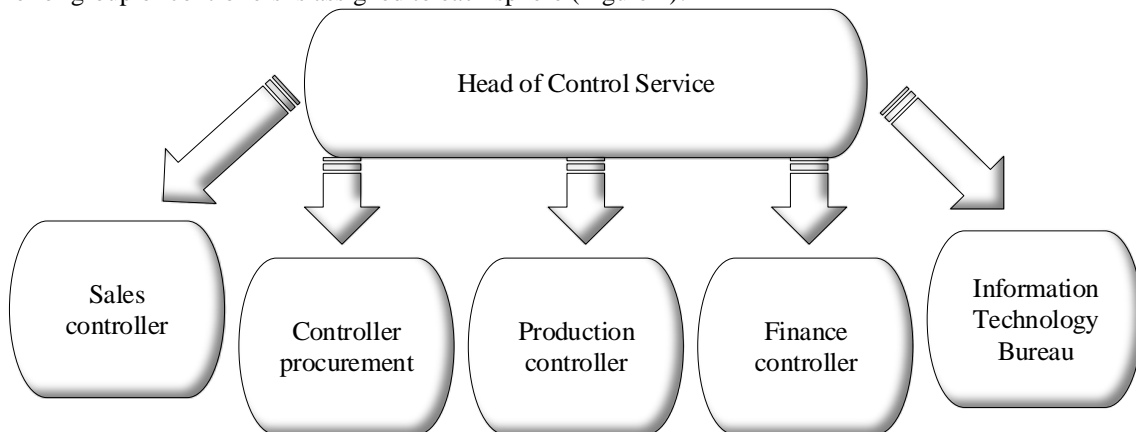


Fig. 2. The structure of the controlling service in accordance with the structure of the enterprise

Source: formed by the author on the basis of [5]

Sometimes it is appropriate to use a combination of these methods. Because in the case of choosing the option of structuring the controlling service by management functions will require specialists of a narrow profile, if the option of organizing a controlling service by functional areas is accepted, then specialists of a broad profile. Since modern controlling is based on information technology, the presence of such a structural unit as the information technology bureau in the controlling service is simply necessary. This significantly reduces the time for data exchange, reduces the complexity of accounting and analytical procedures, increase the amount of information processed. An important factor that must be taken into account when implementing a controlling system is the availability of financial and human resources. It is also necessary to take into account the psychological climate in the team, which is formed at the time of decision-making. It is much easier to start the process of developing and implementing a controlling system with a stable financial condition of the enterprise, and therefore at a favorable psychological point of view.

Analyzing and summarizing the views of well-known scientists [1, 4, 7, 8, 9, 10, 11] on the creation of a controlling system at an industrial enterprise, it should be noted that: when creating an effective controlling system it is necessary to determine the functional structure of the enterprise. information support systems. When developing a controlling system it is necessary to focus on the following management principles:

- integration of the controlling system into the general enterprise management system;
- systematic management decisions;
- control over the implementation of management decisions;
- use of experience of previous years and its implementation in modern practice;
- analysis of the main trends of development and possible impact of negative external and internal factors on the activities of the enterprise, which may affect the change of tactical and strategic goals of the enterprise;
- development of tactical and strategic goals of the enterprise and their compliance with each other;
- adequacy, correctness and timeliness of management decisions at the enterprise.

The process of developing and implementing a controlling system should be divided into several stages, the actual number of which is determined individually for each industrial enterprise. At the first stage the study and assessment of factors of external and internal environment of the industrial enterprise, efficiency of its functioning and revealing of problems of its social and economic development is carried out. it is, first of all, collection and analysis of data describing

the state of the main subsystems and elements of a particular enterprise: analysis of enterprise structure, leadership style, organizational culture, analysis of management methods, analysis of existing incentive system, personnel selection, labor potential assessment, analysis trade, financial, investment and other activities of the enterprise, analysis of external and internal factors influencing the formation of the controlling system. Then, based on the analysis, taking into account the problems and prospects of enterprise development, a system of strategic targets in terms of major subsystems is developed and agreed upon, targets characterizing the state of each subsystem of the enterprise and the enterprise as a whole and their quantitative values are determined.

The second stage sets the requirements, restrictions and criteria for the controlling system and the possibility of its implementation. Constraints vary and depend on specific situations, businesses and managers. At the third stage there is a choice of the optimal concept of the controlling system, taking into account the specifics of a particular industrial enterprise (with a focus on management accounting, planning control, improving the management system). At the fourth stage, an action plan for the implementation of the controlling system is being implemented. We are developing a system of integrated planning, improving the existing accounting and management accounting, forming the organizational structure of the controlling service, installing modern software and automation, information support, developing a system of benchmarks for the enterprise as a whole, responsibility centers, and others. At the fifth stage, control over the implementation of the action plan for the implementation of the controlling system, analysis and evaluation of the results of the measures taken. Depending on the obtained results, recommendations are developed for the modification of the controlling system and the industrial enterprise as a whole or the controlling system is considered to be successful. The figure shows a model of the algorithm for implementing a controlling system in an industrial enterprise. Due to cyclic verification and analysis of the obtained results of activities, this model, in addition to direct analysis of the industrial enterprise, constantly analyzes the controlling model itself, which allows to constantly modify the controlling system to the requirements of the industrial enterprise.

Basic information and preliminary research lead to a decision on the need to form and implement a controlling system in the enterprise. All of the above allows us to identify the stages of the controlling cycle in an industrial enterprise, expanding its conventional composition. The formation and implementation of a controlling system at the enterprises of the industrial complex is a system of organizational and economic measures, carried out in stages in the sequence shown in Figure 3.

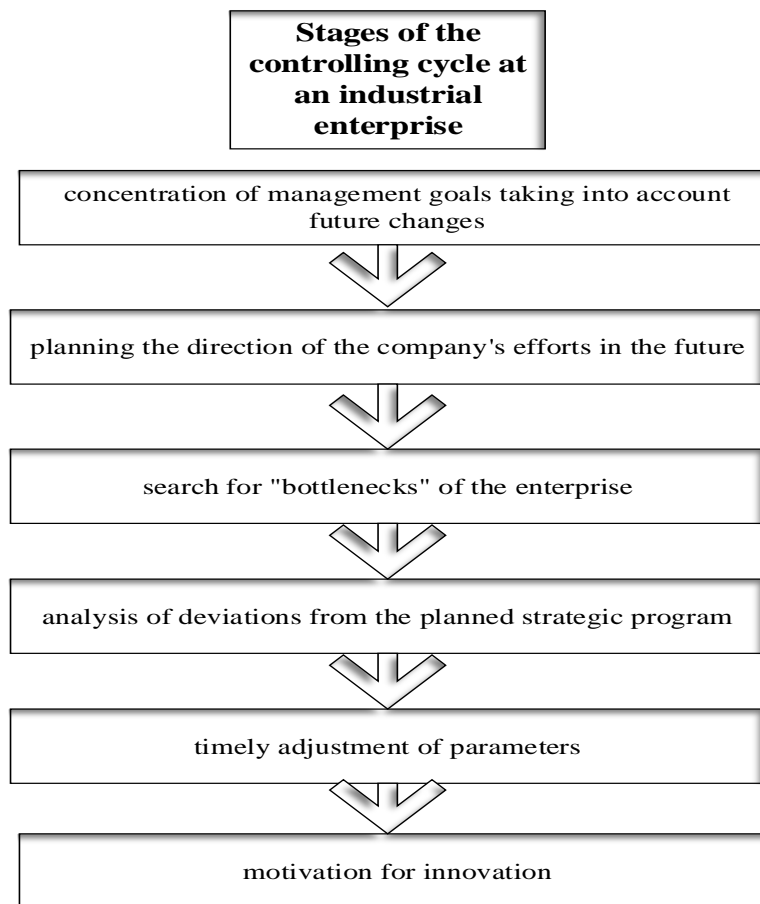


Fig. 3. Stages of the cycle of the controlling system mechanism in an industrial enterprise

Source: proposed by the author

As you can see in the controlling cycle of an industrial enterprise can be divided into 6 main stages. Of which the last "motivation for innovation" is fundamentally new. It concerns the change of the production function of the enterprise (technical and technological innovations) and the results of this function (commodity innovations) and thus ensures the further development of the industrial enterprise.

The effectiveness of the controlling system implemented at the industrial enterprise can be assessed through a specially developed comprehensive system of indicators. In the absence of it in the practice of industrial enterprises, the most frequently used indicators are indicators of profitability of all assets of the enterprise, profitability of sales and return on equity.

The process of controlling implementation at the enterprise does not end with the implementation of the action plan for controlling implementation. The operation of the controlling system should be a continuous process of control with periodic analysis of the effectiveness of the controlling system. Criteria for the effectiveness of the system can be different and should be formed depending on the needs and specifics of the enterprise. In case of insufficient efficiency of functioning the concept of controlling of the enterprise can be reconsidered completely or in its separate elements.

Thus, the formation and implementation of a controlling system at industrial enterprises is a system of organizational and economic measures. The development of these measures has a certain degree of novelty, as it involves consideration and adaptation of controlling methods and tools existing in international practice to the use of domestic construction companies, including the introduction of elements that reflect their specificity in Ukrainian market conditions.

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**Fostolovych Valentyna**

*Doctor of Economic Sciences, Associate Professor of the Department of Accounting and Taxation in the branches of the economy Faculty of Accounting and Auditing of Vinnytsia National Agrarian University, Ukraine*

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### DIGITAL TRANSFORMATION OF THE ECONOMY IN THE IMPLEMENTATION OF THE NATIONAL DEVELOPMENT STRATEGY OF UKRAINE

#### **Abstract.**

*В статті досліджено основні вектори розвитку в системі постіндустріального розвитку суспільства. The main tools for the implementation of sustainable development goals are identified. Prospects of implementation of European integration initiatives of Ukraine in the system of economic activity of enterprises, in the model of interrelations of society, state and business structures are recognized. The importance of intellectual development of a person as a person in the system of innovative development of society is proved. It is demonstrated that the intellectual potential of the state's human capital determines the country's place at the world level. A comparative assessment and rating of the Global Innovation Index of Ukraine and other countries. The importance of financing research and development is noted. Emphasis on digitalization - as a tool for post-industrial development of society. The dynamics of realization of the tasks of the Sustainable Development Goals is analyzed. The ways of digital transformation are singled out.*

**Keywords.** *Agriculture, digitization, system, power, economic relations, digital economy, economic entities, contactless economy, national economic strategy.*

The post-industrial vector of the direction of development of modern society has prompted humanity to change its approach to values and preferences. The man became the center of the results-oriented actions. The innovative vector of development has become the basis of modern society, the effectiveness of which is measured not by the amount of product created, the level of end user satisfaction with the newly created product with minimal labor costs and resources, waste from which should be used in recycling. Highly productive industry has acquired new features and is implemented with the help of new resource-saving and low-waste technologies. Realizing the planned goals became possible only with the constant improvement of the knowledge industry. As a result, education has taken on a new dimension, needs new approaches and has gone beyond traditional knowledge acquisition. The global pandemic associated with the spread of COVID-19 only increased the need for contactless technologies in all spheres of human life. The economy of post-industrial society needs a high share of high-quality and innovative services in the structure of GDP. The existing high level of competition in both the economic market and the labor market has contributed to a change in approaches to the conditions of operation,

linking the needs of the economy, environment and social sphere with innovative methods and digital technologies. The transition to combined technologies has necessitated an increase in demand for services. Such requirements have arisen not only at the level of a particular state, they have united the entire world community into a single goal, which is implemented at the state level in the form of the Sustainable Development Goals.

The idea of post-industrialism and its main manifestations were described by Daniel Bell [2] while predicting the promising direction of society. In the process of forecasting, it provided for a change in the direction of development of social production: from mass production of goods to the active provision of services, activities based on promising research results, focus on the quality of education, improving the quality of life. Daniel Bell attributes these changes to the growing need for technicians who will be a large professional group. The theoretical knowledge received by experts will become a basis of innovative activity at all levels and in all spheres of economic, administrative and social activity..

In isolating man as a central subject, the cue realizes the goals of the world system and for which this system works. D. Bell provides a central feature: the

spread of science, innovative technologies and knowledge.

To confirm the possibility of Ukraine's transition to post-industrial development of society, we conducted an analysis of the state of dissemination of knowledge, quality of innovation and scientific activity in our country over the past 10 years. Analysis of the State Statistics Service of Ukraine conducted on the basis of statistical observations [3].

Assessing the dynamics over the years, the quantitative and qualitative composition of employees involved in research and development, which have a scientific degree, we noted a decrease in the number of scientists involved, however, we should pay attention to improving the quality of their composition. If in 2010 the number of employees involved in research and development with a doctorate was 11,974 people, in 2020 their number has almost halved (7,060 people). How-

ever, in percentage terms of quality, the number of doctors of science in 2020 increased to 9.9%, while in 2010 it was only 6.6%, which is 3.3% less than in the reporting year. In 2020, the number of PhDs involved in research and development decreased by 2.6 times compared to 2010 as of 2010. It is also noted that the percentage of scientists with the degree of candidate of science involved in the implementation of research and development also decreased over the analyzed period by 2.8% in 2020 (17949 people) compared to 2010 (46685 people).

Based on this assessment, it is necessary to emphasize the need of state bodies of Ukraine to stimulate the increase of quantitative and qualitative composition of innovative groups, segments of the population and business working towards global trends and initiatives, fulfilling the points of Ukraine's European integration process..

Table 1

**Number of R&D personnel with a scientific degree, for 2010-2020**

	Number of R&D personnel - total, persons	Of them have a scientific degree			
		doctor of science		PhD/candidate of sciences	
		ociб/ persons	in percentage of the total number of R&D personnel	persons	in percentage of the total number of R&D personnel
2010	182484	11974	6,6	46685	25,6
2011	175330	11677	6,7	46321	26,4
2012	164340	11172	6,8	42050	25,6
2013	155386	11155	7,2	41196	26,5
2014	136123	9983	7,3	37082	27,2
2015	122504	9571	7,8	32849	26,8
2016	97912	7091	7,2	20208	20,6
2017	94274	6942	7,4	19219	20,4
2018	88128	7043	8,0	18806	21,3
2019	79262	6526	8,2	16929	21,4
2020	78860	7060	9,0	17949	22,8

Джерело: Economic statistics. Science, technology and innovation (2021). State Statistics Service of Ukraine. URL: <http://www.ukrstat.gov.ua/>

Innovative activity is possible only with a sufficient level of funding. In Ukraine, the level of funding for innovation needs to change better. Based on the cost of research and development in the dynamics for 2010-2020. Assessing the dynamics of the cost of research and development in Ukraine over the past 10 years, it should be noted that it has more than doubled. If in 2010 the amount of expenditures for research and development amounted to UAH 8,107.1 million, in 2020 this figure increased to the level of UAH 1,7022.4 million, which, at first glance, is a positive direction of change. However, estimating the share of research and development expenditures in GDP, we noted the opposite trend. With the growth of GDP in Ukraine, the share of expenditures on research and development in GDP does not increase, but on the contrary - decreases. Comparing the share of expenditures on research and development in GDP in 2010 with its value in 2020, there is a decrease in its percentage by 1.8 times (Table 2).

Despite the difficult economic situation and the low level of state funding for research and development in Ukraine in 2020 in the annual ranking of global innovation trends ranked 45th in the Global Innovation Index (Global Innovation Index), gaining 37.4 points out of 100 [4].

Assessing the level of Ukraine in the ranking among 131 member countries, the leading positions are in terms of sub-rating of the level of knowledge and technological skills (Knowledge & technology outputs) 25th place and the sub-index Human capital & research (Human capital & research) 39th place. In the dynamics of the assessment for the previous period by the level of the component rating in the field of education in 2020, Ukraine added 20 steps, taking 23rd place and the rating in terms of research increased by 10 steps, taking 44th place.

We present a comparative rating of the overall Global Innovation Index of Ukraine and other countries in 2020 in terms of sub-indices in table 2.

**GII 2020 rankings overall and by pillar**

	Ukraine	Poland	Germany	USA
Overall GII rank	45	38	9	3
Institutions	93	39	18	9
Human capital & research	39	35	5	12
Infrastructure	94	42	12	24
Market sophistication	99	69	24	2
Business sophistication	54	38	12	5
Knowledge & technology outputs	25	36	10	3
Creative outputs	44	47	9	11

Джерело: 4. The Global Innovation Index 2020: Who Will Finance Innovation? Report 2020 (13th edition) Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent Editors. Cornell University, INSEAD, and the World Intellectual Property Organization, 2020. P. 399

According to their estimates, Switzerland, the Netherlands, Sweden, the United Kingdom and Singapore have been the leaders in the ranking of the Global Innovation Index for the last 5 years among 126 countries on the basis of 80 indicators (parameters). The formation of the Global Innovation Index takes into account groups of indicators from the political situation in the country and the level of education, to the development of infrastructure and the state of business. It should be noted that based on the analysis of the dynamics of this indicator, Ukraine is gradually improving its position in the world rankings. Having conducted a comparative assessment of the Global Innovation Index (GII) and the rating characteristics of

Ukraine and other countries in the dynamics over the years, we noted that over 8 years the level of innovation in Ukraine increased more than 1.5 times, reaching 45th place in 2020, while in 2013 year, Ukraine occupied only 71 rankings. However, in the dynamics over the years by the size of the Global Innovation Index, our country has a diverse meaning. Thus, in 2014 the value of the Global Innovation Index of Ukraine was 36.3 (similar to 2020), while in 2015 - the value of this indicator increased to 38.5 with a subsequent decrease next year to a critically low level of 35.7. The sinusoidal dynamics of the Global Innovation Index of Ukraine repeats the political ups and downs (Table 3).

Table 3

**Comparative assessment and rating of the Global Innovation Index (GII) of Ukraine and other countries, 2013-2019**

Years	Country							
	Ukraine		Germany		Poland		USA	
	Index	Rating	Index	Rating	Index	Rating	Index	Rating
2013	35,8	71	55,8	15	40,1	49	60,3	5
2014	36,3	63	56	13	40,6	45	60,1	6
2015	38,5	64	57,7	12	40,2	46	60,1	5
2016	35,7	56	57,9	10	40,2	39	61,4	4
2017	37,6	50	58,4	9	42	38	61,4	4
2018	38,5	43	58,03	9	41,67	39	59,81	6
2019*	37,00	47	58,19	9	41,31	39	61,73	3
2020**	36,32	45	56,55	9	39,95	38	60,56	3

Source:

\*The Global Innovation Index 2019 (2020) Global Innovation Index .Global Innovation Index Report 2019 (11th Edition) URL: <https://www.globalinnovationindex.org/analysis-indicator>

\*\* The Global Innovation Index 2020: Who Will Finance Innovation? Report 2020 (13th edition) Soumitra Dutta, Bruno Lanvin, and Sacha Wunsch-Vincent Editors. Cornell University, INSEAD, and the World Intellectual Property Organization, 2020. P. 399

*In this negative dynamics in terms of the Global Innovation Index in 2020, Ukraine reached the level of 2014 with a rate of 36.32, but in the ranking of countries on this index rose to 45th place out of 131 member countries.*

The Global Innovation Index makes it possible to determine the country's opportunities and prospects for the perception of innovative products, and partner countries - for the feasibility of cooperation and prospects and potential for economic benefits in terms of cooperation. With the onset of the COVID-19 pan-

demic, the global economy and innovative development have received an unprecedented challenge, halting rapid economic growth and, consequently, innovation activity.

*Since the basis of innovation is the availability of intellectual resources and financial support, we based on the database of the State Statistics Service of Ukraine conducted an analysis of the dynamics of costs for research and development for 2010-2020. It is important to determine the innovative potential of the state, the innovative capacity of business structures and*

the readiness of the social sphere to consume innovative products.

Analyzing the amount of costs for research and development in the dynamics for 2010-2020, we noted an increase in the absolute monetary value of costs incurred almost twice. Thus, if in 2010 the costs of research and development amounted to 8107.1 million UAH, in 2020 this value increased by 8915.3 million UAH, which amounted to 17022.4 million UAH. However, it is important not only to increase the absolute

value of monetary expenditures, but also the share of expenditures on research and development in GDP. In the dynamics of the years (2010-2020), its dynamics was inversely proportional to the total amount of costs incurred for research and development (table. 4). Development in modern conditions is not possible without innovative activity at all levels, without constant improvement and use of modern tools focused on the use of artificial intelligence, digital technologies, robotics.

Table 4

**Research and development expenditure by R&D type for 2010-2020**

Years	<i>R&amp;D expenditure - total, mln. UAH</i>	Share of R&D expenditures in GDP, %
2010	8107,1	0,75
2011	8513,4	0,65
2012	9419,9	0,67
2013	10248,5	0,70
2014	9487,5	0,60
2015	11003,6	0,55
2016	11530,7	0,48
2017	13379,3	0,45
2018	16773,7	0,47
2019	17254,6	0,43
2020	17022,4	0,41
Deviation of the reporting to the base year, ±	+8915,3	-0,34

Source: Research and development expenditure by R&D type for 2010-2020 (2021). Economic statistics. Science, technology and innovation. State Statistics Service of Ukraine. URL: <http://www.ukrstat.gov.ua/>

Therefore, scientific activity, education, intellectual development became the basis of the value of human capital. Science in modern conditions has become an important prerequisite for creating a new organizational structure of society. The model of state development has changed the industrial vector of development to a new, socially oriented, environmentally oriented and economically justified. Therefore, it should be noted that innovation, educational and research institutions, research organizations are becoming key elements of the modern organizational structure of post-industrial society.

In order to develop and maintain the conditions of competition, modern society should constantly refocus on new trends and tendencies of world development. At the state level, management staff should anticipate promising innovative areas of development and encourage their implementation of business, the public and society as a whole. Undoubtedly, this is hard work that requires constant improvement of knowledge, skills, investments in education and self-education, intensive development and constant innovation in all areas. The formation of modern business models is focused on creating opportunities for remote work, distance education, remote performance of duties at a convenient time for the client. The transformation of business structures under quarantine restrictions has made it possible to apply new opportunities to some extent, however, this approach requires: introduction of new technologies, provision of technical means to employees, creation of digital platforms, appropriate work with the psychological state of employees, opportunities for remote access in the performance of official duties.

The use of information technology and Big Data resources makes it possible to operate a large array of information for management decisions. Creating opportunities for processing a large array of digital data with the subsequent generation of ready-made algorithms for solutions taking into account the probable risks makes it possible to avoid economic troubles and anticipate probable crises. Only on the basis of such a model of business organization can achieve a combination of interests of the state, society and obtain a sufficient level of economic benefit. The choice of such a vector of enterprise development creates favorable conditions for competition. We believe that due to the intensive introduction of cloud technologies into business activities, a new space of market segmentation is being created and its borders are being opened and expanded.

However, the introduction of cloud technologies makes the personal data of a particular enterprise more secure, therefore, additional costs are required for the organization of the information security system and its protection. Having information about the customer and a competitor provides great advantages in organizing and conducting business. However, a lot of information creates risks of dissemination of personal data and is a threat of damages in their own business. Therefore, in the developed information space an important task for modern companies is the development of data protection technologies. The intensive transition to cloud technologies has caused a demand for employees who have the technology to work in digital systems, know how to operate a database and set up companies to work in an automated management decision-making. The main task of the modern head of the business structure

is to constantly improve the level of knowledge and literacy of a large array of data and digital technologies in the company. Work will be effective when the company's technical support will be of such a level that it can receive data, form a database, process the received information and develop ready-made solution algorithms based on analytical evaluation data. Therefore, the constant involvement of management staff who participate in research and carry out research and development has become a trend in the development of companies. Such an initiative is supported by the state.

At the request of modernity, the Government of Ukraine has decided to implement the Sustainable Development Goals, and to implement the Development

Strategy of Ukraine until 2030. Every year work is carried out in the direction of implementation of this initiative. An important measure of progressive work towards the implementation of this initiative was the increase in the share of researchers under the age of 40 in the total number of researchers.

According to the assessment of the State Statistics Service of Ukraine, it is noted that in Ukraine as a whole the share of researchers under the age of 40 in the total number of researchers in 2020 decreased significantly compared to the base period (2015). Thus, if in 2015 in the total number of researchers in Ukraine researchers under the age of 40 were 36.7%, in 2020 their share decreased by 6%.

Table 3

**Dynamics of the share of researchers under the age of 40 in the total number of researchers in Ukraine, %**

Territory	2015	2016	2017	2018	2019	2020
<b>Ukraine</b>	36,7	37,1	35,6	33,5	32,0	30,7
Vinnysia region	42,4	39,1	38,7	35,6	32,7	30,2

Source: Sustainable development goals. Goal 9. Industry, innovation and infrastructure (2021). State Statistics Service of Ukraine. URL: <http://www.ukrstat.gov.ua/>

The above situation indicates the need to increase the interest of young people to participate in research and development, to stimulate such activities and make it more promising and attractive. The low level of funding for innovation does not attract young people to participate in innovation. Therefore, an important aspect is to attract investment in education and training of employees of companies, as well as investing in the implementation of systems for processing, analysis of information and artificial intelligence technology.

In the process of improving global digital technologies, business structures need to improve their own business models and approaches to doing business. Changing the format of relationships with customers, contractors and partners requires the development of such a model of relationships and the use of technologies that will be as simple and accessible to their users. Rapid response of business leaders to changes in the operating environment and market needs require rapid transformation in economic activity and in the management system.

Automation of the production process has become the main trend of innovative development. An important trend this year was the automation of not only technological operations, but also automation in the process of organizing the management system and during management decisions, building logistics links. An important tool in working with clients in terms of performing the same type of tasks was the implementation of chatbots, which successfully accept orders, working in the form of automated interfaces, transmit them for execution.

The financial services market has gained new opportunities due to modern tools, such as: crowdfunding, blockchain technology and other methods of financing. The presented technologies completely simplify the procedure of obtaining capital and go beyond the traditional channels of obtaining financial resources.

The use of virtual interfaces is a promising method of implementing business services in various areas of economic activity.

Visualization of the future service provides additional opportunities to determine the buyer the feasibility of obtaining it in a particular company.

The transition to a post-industrial type of development has changed attitudes towards the sustainable development initiative. The pandemic revealed the magnitude of the environmental threat and showed the scale of the likely damage. Therefore, the activities of each state, business structure and society as a whole must change the approach to production and sales and consumption. The quality of goods, work and services - became the basis for choosing technology. The environmental component has acquired a new priority of competitive importance. Management staff of companies should understand the value of environmental orientation of the organization of production and technology not only in environmental safety, but also in economic feasibility. After all, the use of resource-saving energy-saving technologies is manifested in the dual nature of savings: both environmental and economic and social.

At the level of Ukraine, the implementation of the Sustainable Development Goals involves the achievement of 17 goals that are implemented in the performance of certain tasks. Within the framework of achieving goal 9 "Industry, innovation and infrastructure" one of the tasks is «..to promote the accelerated development of high- and medium-high-tech sectors of the processing industry, which are formed on the basis of the use of chains "education - science - production" and a cluster approach in the areas of: development of innovation ecosystem; development of information and telecommunication technologies (ICT); application of ICT in the agro-industrial complex, energy, transport and industry; high-tech engineering; creation of new materials; development of pharmaceutical and bioengineering industries ". An important characteristic of this task is the evaluation of the following indicators:

1. Share of value added by production costs of enterprises belonging to the high-tech sector of the processing industry (in particular, production of pharmaceuticals and drugs; computers, electronic and optical

products; air and space aircraft, related equipment in accordance with the NACE), in total added cost of production costs,%;

2. Share of value added by production costs of enterprises belonging to the medium-high-tech sector of the processing industry (in particular, production of chemical products; electrical equipment; machinery and equipment; vehicles, trailers and semi-trailers; other vehicles according to NACE) in total value added by costs production, %;

3. Proportion of employees employed in enterprises belonging to the high- and medium-high-tech sectors of the processing industry (in particular, the production of pharmaceuticals and drugs; chemical products; mechanical engineering; computers, electronic and optical products; air and space aircraft, related equipment in accordance with the NACE), in the total number of employees in industry, %.

These characteristics are assessed by the State Statistics Service of Ukraine. Analyzing the indicators, we noted a low level of achievement of this goal. Thus, the benchmark value of the share of value added by production costs of enterprises belonging to the medium-high-tech sector of the processing industry (in particular, production of chemical products; electrical equipment; machinery and equipment; vehicles, trailers and semi-trailers; other vehicles according to NACE) in total added cost of production costs for 2020 is 7.5, but in 2019 its value was only 3.8%.

To improve these characteristics, it is necessary to increase both high-tech production and the share of workers employed in enterprises belonging to high- and medium-high-tech sectors of the economy. According to the analytical assessment, it is noted that this value in 2019 was 21.5, and did not reach the planned target for 2020 (26.0%).

Table 4

**Dynamics of implementation of sustainable development goals in terms of implementation Task 9 "Promote the accelerated development of high- and medium-high-tech sectors of the processing industry, which are formed through the use of chains" education - science - production "and cluster approach by areas"**

Indexes	2015	2016	2017	2018	2019	Target set for 2020
Share of value added by production costs of enterprises belonging to the high-tech sector of the processing industry (in particular, production of pharmaceuticals and drugs; computers, electronic and optical products; air and space aircraft, related equipment in accordance with the NACE), in total added cost of production costs,%	1,9	1,9	1,7	1,4	1,2	
Share of value added by production costs of enterprises belonging to the medium-high-tech sector of the processing industry (in particular, production of chemical products; electrical equipment; machinery and equipment; vehicles, trailers and semi-trailers; other vehicles according to NACE) in total value added by costs production,%	4,7	3,3	3,4	3,8	3,8	7,5
Proportion of employees employed in enterprises belonging to the high- and medium-high-tech sectors of the processing industry (in particular, the production of pharmaceuticals and drugs; chemical products; mechanical engineering; computers, electronic and optical products; air and space aircraft, related equipment in accordance with the NACE), in the total number of employees in industry,%	21,2	21,1	21,5	21,6	21,5	26,0

Source: Sustainable development goals. Goal 9. Industry, innovation and infrastructure (2021). State Statistics Service of Ukraine. URL: <http://www.ukrstat.gov.ua/>

All of the above indicates the need for significant work towards achieving the Sustainable Development Goals and the implementation of tasks that enable the implementation of goals. Ukraine's desire to achieve the results set by the Sustainable Development Goals is obvious, and the potential for their implementation is sufficient. Thus, given Ukraine's desire to move to an innovative direction of development in 2020, Ukraine was included in the list of top 30 countries in the global ranking of startups - StartupBlink. This rating evaluates ecosystem startups among 100 countries and 1,000 cities around the world. In the ranking of startups "StartupBlink" Ukraine took 29th place. This indicates a sufficient level of desire and action. Which are implemented and implemented in the direction of implementing the Sustainable Development Goals and the implementation of Ukraine's development strategy until 2030 [5].

Rapid digital development contributes to the realization of Ukraine's European integration aspirations. Based on the goals of digital development set by the Board of the European Commission, the ways of digital transformation are identified. [7].

Since the problem of contact full-time education arose in the context of the spread of the COVID-19 pandemic, the development of digital education opportunities became a very important issue. This direction of development in the field of education has opened new opportunities not only for learning within educational institutions and various scientific institutions, but also opened the prospect of distance learning outside the country for various professionals. The need for training educated specialists in the field of digital technologies has become a priority. Today there is a priority need for training of educated specialists in the field of digital technologies.

Thus, analyzing the number of enterprises that had access to the Internet and the average number of employees who used a computer with Internet access, by type of economic activity and with a distribution by the average number of employees in 2018-2019, we noted that 88,0-86.4% of Ukrainian enterprises operate with Internet access. More than 90% of enterprises use information technology in the following areas of activity: processing industry; supply of electricity, gas, steam

and air conditioning; water supply; sewerage, waste management; information and telecommunications; repair of computers and communication equipment. It should be noted that the use of the Internet is more active, where more employees work. Thus, if at enterprises with the number of employees from 10 to 49 people the Internet is used by 86.3-84.4%, then at enterprises with more than 250 employees - this indicator is 95.9-94.8%.

Table 5

**The number of enterprises that had access to the Internet and the average number of employees who used a computer with Internet access, by type of economic activity and by distribution according to the average number of employees in 2018-2019**

Type of economic activity of enterprises	Number of enterprises that had access to the Internet			
	units		in% to the total number of enterprises	
	2018	2019	2018	2019
<b>Total</b>	<b>43303</b>	<b>43785</b>	<b>88,0</b>	<b>86,4</b>
Processing industry	10878	11089	90,0	89,5
Supply of electricity, gas, steam and air conditioning	701	709	93,2	92,3
Water supply; sewerage, waste management	1130	1138	93,8	92,4
Construction	4783	4883	87,9	83,9
Wholesale and retail trade; repair of motor vehicles and motorcycles	10759	10742	88,1	86,1
Transport, warehousing, postal and courier activities	3462	3553	87,8	87,9
Temporary accommodation and catering	1279	1261	81,4	77,2
Information and telecommunications	1949	1946	90,0	89,2
Real estate transactions	2704	2697	87,8	86,3
Professional, scientific and technical activities	2636	2685	88,4	87,2
Activities in the field of administrative and support services	2958	3024	80,4	78,2
Repair of computers and communication equipment	64	58	94,1	86,6
Including with the average number of employees:				
from 10 to 49 people	32910	33169	86,3	84,4
from 50 to 249 people	8247	8444	93,5	93,0
250 people and more	2146	2172	95,9	94,8

Source: The use of information and communication technologies in enterprises. Economic statistics. Economic activity. Information society (2021). State Statistics Service of Ukraine. URL: <http://www.ukrstat.gov.ua/>

The use of digital technologies in all spheres of economic activity will develop when there are adequate resources and a sufficiently developed digital infrastructure. The introduction of digital technologies in global facilities with limited access to them by the general population will not ensure a sufficient level of their dissemination. It is important to develop a digital infrastructure and develop technologies to protect the information disseminated using cloud technologies. The Technology Development Strategy of Ukraine until 2030 is focused on such technologies.

It should be noted that Ukraine should work towards the development of digital technologies for doing business. With the rapid spread of "cloud" technologies and the formation of a database of Big data, businesses should learn to use them intensively

A large information base with sufficient awareness of the operation of analysis and forecasting technology by analysts of companies will help reduce risks for business structures and develop business models that will be competitive in domestic and global markets. Anticipating changes in consumer needs and forecasting economic spikes in the financial market brings businesses to a new level of economic activity. Only

those companies that have suitably trained specialists and technical means and technologies that make it possible to use digitalization to the full can develop a large database and use cloud technology resources.

Any idea launched at the state level will be effective when the government itself will not only initiate, but also implement and put into practice the proposed innovation. The use of digital communication between the government and the social sphere makes information quickly accessible, provides a high level of communication, and automates the services provided by the state to the population. That is, the state must constantly work to increase access to digital services and contact, to introduce digital communication technologies.

The more public services can be implemented online, the more open will be the connection of the population directly with the management staff. The formation of a triad of connections (state, society and business) makes it possible to constantly compare the needs of the social sphere for which the state authorities and business structures function. Maximum dissemination

of digital identification will facilitate the implementation of state functions in accordance with the needs of the population within the legal field.

In order to determine the main vectors of Ukraine's development this year, the Cabinet of Ministers of Ukraine approved the National Economic Strategy for the period up to 2030 [9]. Within the framework of the strategy, guidelines, principles and values in the economic policy of Ukraine are highlighted. Important principles are the implementation of the principles of European and Euro-Atlantic integration (implementation of the strategic course of the state for Ukraine's full membership in the EU and the North Atlantic Treaty Organization). It is worth paying attention to the state's understanding of the need to implement the Sustainable Development Goals, one of the elements of which is the decarbonization of the economy (energy efficiency, renewable energy development, circular economy development and synchronization with the European Green Course initiative).

An important vector of Ukraine's development at the level of government bodies is the construction of an effective digital service state and the creation of compact state institutions (development of the digital economy as one of the drivers of economic growth in Ukraine) [9].

Coordinated actions towards the implementation of elements of digitalization and cloud technologies will ensure a high level of development of society and the state as a whole. Integration of the above-mentioned tools of innovative development in the field of digital technologies in business activities, in all spheres of community life and business structures.

**Conclusions.** Thus, the post-industrial development of society has combined all the components of the functioning of natural, social and business. The choice of vector for the movement focused on the development of human capital and the dissemination of knowledge - put at the center of human development, its needs, security and well-being in all its manifestations: economic, environmental, health. All the above parameters are the basis of sustainable development of society and meet global trends. Digitization is a tool that facilitates their implementation. Globalization in the direction of digital education, the use of cloud technologies, the implementation of artificial intelligence in technological processes, in the formation of closed production technologies from producer to consumer, which allows to accumulate maximum value added and ensure the expected economic results. Contactless economy is not a delusion, but a necessary way for society to function. Тому, затвердження

Therefore, the approval of the National Economic Strategy for the period up to 2030 [9] is focused on finding opportunities to realize the geographical, resource and human potential of Ukraine. Innovative economic growth is at the heart of the tools for ensuring

the well-being, security, rights and freedoms of every citizen of Ukraine. The basic principles of advanced economic growth are the main goals of sustainable development and the need to achieve climate neutrality.

The National Economic Strategy is an instruction for coordinated action based on the elements and tools of digital development. These initiatives will encourage international partnerships, thanks to the possibility of digital communications.

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**Polova O.***Doctor of Economics, Professor of the Department of Audit and State Control,  
Vinnytsia National Agrarian University*[DOI: 10.24412/2520-6990-2021-17104-28-36](https://doi.org/10.24412/2520-6990-2021-17104-28-36)**RETAIL IN THE BANKING SECTOR OF UKRAINE****Abstract.**

*The article explores the concept of «retail». Peculiarities of retail development in the banking sector of Ukraine are analyzed. It is established that banking technologies are another of the most important factors of successful development in modern conditions of banking retail. Banks create a customer-oriented model of doing business, offering specific types of services to specific groups of customers, trying to implement the principle of individual customer service. An urgent issue today is to determine the main trends in the development of retail banking. Research on the nature of retail in the banking sector and identified its role in expanding the service sector by introducing the latest innovative services in commercial banks to maximize income and maintain their liquidity. The development of above-indicated promising areas will allow banking institutions to continue to cover almost all areas of the financial services market.*

**Keywords:** retail, banking retail, banking products and services, innovative technologies

**Introduction.** The concept of "retail" is associated with the processes and mechanisms of sale of goods and services to end users, so it is often identified with the technology of retail. The formation of the product line of banking retail is based on traditional and non-traditional banking services, in particular retail. Retail banking is one of the most important areas in the functioning of the dominant number of credit institutions, which can act as a significant source of resources, as well as a promising option for banks to place funds in order to obtain a high financial result. Currently, retail business is one of the main factors in the growth of the banking sector and a key segment of most banks. Most banking institutions still pay considerable attention to the retail business segment (retail). All commercial banks are represented in the retail market, seeking to take a leading position, increasing the share of retail in the overall business. However, during the crisis, many banks have revised their retail strategies.

**Related literature review and hypotheses.** The general patterns and mechanisms of retail development have been studied mainly by American and Western European scientists D. Kahneman, W. Smith, D. Arieli, and A. Tversky, who based their research on behavioral theories of consumer choice and decision-making. Well-known American researchers in the field of marketing and advertising F. Kotler and G. Armstrong have made a significant contribution to the formation of demand and consumption in the context of growing information impact on consumers and increasing purchasing power. Problems of development of the market of retail products of "retail" of banking institutions in the works investigated: S.L. Bru, T.D. Bilous, T.A. Vasileva, V.F. Golub, G.G. Golub, A.M. Demchenko, J.M. Krivich, K.R. Connell, R. Markin, O.O. Lapko, I.O. Lemish, O.P. Sidelnyk, S.G. Fedosenko, S.M. Flynn, D.O. Harinovich. However, these researchers studied some aspects of the functioning of the banking market, which did not give a complete picture of the functioning of the domestic banking market, in particular its innovative component.

**Data and methodology.**

The theoretical and methodological basis of the study were the provisions of economic theory, legislation and regulations. To solve the tasks used general scientific methods: historical and analytical (in studying the essence of retail, banking retail), graphic (to reflect the dynamics of the main indicators of banks in retail), analysis and synthesis (in forming the theoretical foundations of innovative mechanisms of banking retail, evaluation the current state of the market of banking services and banking retail in Ukraine), abstraction and logical interpretation (in clarifying the basic categories of research), system-structural (in justifying the innovative mechanism of retail in the banking sector); chronological (to consider the processes of formation and development of retail in the banking sector dynamics, changes and time sequence. The information base of the study was legislation and regulations governing the activities of banks, official data of the National Bank of Ukraine (NBU), statistics, analytical reviews of the State Statistics Service of Ukraine, the World Bank, materials of the Independent Association of Banks of Ukraine (NABU), information and analytical publications, reporting of banking institutions, scientific works of domestic and foreign scientists, periodicals, Internet resources and calculations of the author.

**Results and Discussions.**

Improving the efficiency of banks, and hence - increasing their competitiveness in domestic and foreign markets directly depends, on the one hand, on the popularity and demand for banking products and services, and on the other - on the level of customer satisfaction and needs of products and services. In Ukraine today, there is a large-scale application by banks of strategies to aggressively capture the market and win customers with the simultaneous introduction of innovative sales technologies and after-sales service. In such circumstances, there is a need to focus on identifying trends in the development of banking retail.

The tasks of banking retail are to analyze the place for opening a branch of a banking institution in a certain

format; assessment of the location of the ATM or terminal for better payback. The range of banking services is constantly changing and its composition is determined by the needs of different groups of customers, their priorities and capabilities. The search for new customer needs and the development of fundamentally new opportunities for banks is constantly underway. The introduction of innovative banking products necessitates the explanation of their content to customers, improving the financial culture of consumers and their legal literacy, strengthening the importance of such a factor as customer trust. Innovative technologies of conducting and managing the banking business allow, firstly, to offer better customer service to individuals; second, reduce the risk associated with the provision of retail banking services; thirdly, to increase the efficiency of the bank's work with each client and the profitability of the retail business in general [10, 11].

Retail banking services, or services provided by banks to individuals, individuals, both directly related to banking activities and related to other financial services. Such traditional banking services as opening current accounts and their settlement and cash servicing, money transfers, cash payments, credit services, deposit services, purchase and sale of currency are not enough to meet customer needs today. Banks now offer individuals additional areas that increase the possibilities of non-cash payments and savings. These are, first of all, operations with payment cards, which improve the state of money circulation in the country, promote the development of modern payment technologies. It should be noted that the development of information technology, the need for rapid decision-making prompted the development of banks' remote forms of banking services, including Internet banking (WEB-banking). A variety of mobile applications provide convenient and secure access to your account around the clock without visiting a bank. In addition, banks for the population carry out operations with securities, offering the services of a depository institution, purchase and sale of securities as brokers (dealers), conduct securities management activities.

Innovative approaches in banking are mostly based on modern information and mobile technologies, new tools in social networks. Yes, Internet banking has been the most significant innovation in the last fifteen years, but its slow practical implementation has become apparent over such a long period of time. For the five largest economies in Europe, the average rate of Internet banking was 28%, including the United Kingdom - 40%, Spain - 20%, Norway - 75%. The efforts of financial institutions are focused on the use of the Internet not only as an information and communication channel, but also as a commercial one, for which banks are improving the interface and security when using the full range of Web 2.0 capabilities.

Innovative banking retail as an object of risk research has a number of features. The main one is due to the significant complexity of the process of implementing a banking product and the assessment of this process. Therefore, when analyzing the risk of innovative banking retail, it is necessary to move from building

complex models of risk assessment to a detailed description of risk factors and developing measures to reduce each of them.

The key to the effective operation of banking institutions is the development and implementation of innovative technologies that are focused on creating maximum consumer value for customers, which allows you to maintain specific benefits in the long run.

Online retail is a system of economic relations that unfolds in the web-space and focused on the end user. According to the system of national accounts, e-commerce includes transactions that reflect the movement of the intermediate product (B2B, C2B) final consumption (B2G, B2C) and redistributive transactions (resale of goods between households) in online auctions, social networking sites (C2C). B2C and C2C transaction models are used in online retail, which includes mobile commerce (m-commerce). It is part of e-commerce (e-commerce) and complements the physical upresentation (availability and delivery) of goods with digital trading service, purely online format or complementary online and offline formats of the retailer and physical-digital transaction through payment through the bank - physically, through electronic money systems - digitally). In general, the essence and difference between e-commerce and traditional is that the product that is the object of the transaction is not only physical goods, information, but also electronic communication in remote access, which ensures the flow of the transaction and allows without moving, to overcome geographical distances, to carry out operations from any point of the world where conditions for this purpose are created.

In the world banking practice there are three options for organizing banking retail:

- organizational separation of retail business in the structure of the universal bank as a separate independent direction of banking;

- creation of a separate (specialized) bank, the main and only area of activity of which is retail business;

- full organizational separation of retail and creation of a subsidiary retail bank as part of a banking (financial) group [7].

Declining profitability of traditional areas of activity, increasing competition, as well as the need to diversify their business to restore its stability have pushed the bank to develop a range of services for private clients - to banking retail. Commercial banks consider individuals as one of the significant suppliers of funds, and if the external environment of individuals allows us to talk about the growth of household incomes, then the importance of this source of emergence and subsidence of liabilities increases. However, individual customers are also potentially active consumers of resources, for example, in the process of obtaining a variety of banking products from commercial banks.

Among all areas of the banking business, retail is one of the most profitable today, as a range of retail banking services is considered by financial institutions as a source of liabilities, commissions and interest income. In addition, with effective strategic management, banking retail is a source of relatively cheap liquidity and high profitability [3].

Among such retail products we can distinguish: lending for current needs; placement of funds on deposit accounts; payment card service; private banking; organization of pension services; lending organization; asset management; financial and property consultations; currency exchange transactions; making money transfers in national and foreign currencies; making cash payments; opening and maintaining current accounts of individuals, including card); credit card account maintenance; consumer lending for various types of collateral and unsecured) loans; rental of individual bank boxes; financial consulting and information; sale and acceptance of bank metals on deposits; mortgage lending in the primary and secondary residential real estate markets; trust management of property; telephone and home banking; remote counseling centers such as "hot line"); consulting services personal manager); issuance of registered and traveler's checks; payment for goods and services of legal entities; investment services stocks, bonds); acceptance of utility payments.

The formation of the product line of banking retail is determined by the results of in-depth and comprehensive study of the needs of the population in financial services and includes, first of all, the creation of complex products that best meet these needs. The parameters and essence of these products change depending on changes in market conditions and customer needs. The rating of the largest Ukrainian banks took into account the bank's ability to repay deposits without delay if it has financial problems or problems with loan repayment and growing customer debt, as well as the level of

support for shareholders and the state. An important role is played by the owner factor in terms of replenishment of capital and liquid resources, which is the basis of resilience in stressful conditions. No state-owned or international financial holding companies have been declared insolvent.

There were 75 banks in Ukraine, which in 2020 reduced the number of structural units by 10.8%, or by 868 branches - up to 7,134 thousand. Thus, in 2020, Oschadbank closed 490 branches (reducing their number to 1,837 thousand), PrivatBank - 211 (up to 1,717 thousand), Raiffeisen Bank Aval - 100 (up to 396), Alfa Bank - 39 (up to 218), TASCobank and Oschadbank - 16 each (up to 87 and 90 respectively), Ukrsibbank - 12 (up to 272), Credit Dnipro Bank and full name - eight each (up to 28 and 26 respectively) and Ukrbudinvestbank - seven (up to 48). In the 4th quarter of 2020, banks closed 195 structural divisions, including Oschadbank - 94, Raiffeisen Bank Aval - 60, PrivatBank - 33. At the same time, in 2020, banks opened 79 branches, including the state Ukrgasbank - 26 divisions, expanding its regional network of up to 276 branches, Akordbank - eight (up to 79), Bank "Sich" - six (up to 60), FUIB - 16 (up to 224), A-Bank - seven (up to 232), Bank "Alliance" - n (up to 25). As of January 1, 2021, Oschadbank remains the leader in the number of branches (1,837 thousand), in second place PrivatBank (1,717 thousand), third - Raiffeisen Bank Aval (396), fourth - Ukrgasbank (276) and fifth - Ukrsibbank ( 272) [5].

Table 1

**Dynamics of the deposit portfolio of banking institutions in Ukraine  
in 2017-2019**

Indicator	2017	2018	2019	Deviation 2019/2017
<i>Dynamics of the deposit portfolio by subjects</i>				
Funds of individuals, UAH million	478 100	508 869	552 592	+74 792
Funds of legal entities, UAH million	403 927	406 166	498 156	+94 229
<i>Dynamics of the deposit portfolio by deposit currency</i>				
In the national currency, UAH million	481 624	529 635	626 744	+145 120
In foreign currency, UAH million	400 431	385 400	424 005	+23 574
<i>Dynamics of the deposit portfolio by maturity</i>				
Current deposits, UAH million	448 430	477 061	610 864	+162 434
Time deposits, UAH million	433 625	437 974	439 854	+6 229

Note. Compiled according to NBU statistics [5].

Despite the decrease in the number of banks, there is an increase in banks' deposits, which indicates a gradual restoration of confidence in the banking system and the lack of alternatives for the population. Banking retail should actively develop in the areas of maintaining deposits at the current level, increasing the resource base by attracting household deposits, increasing unsecured and short-term loans, increasing commission income by increasing the number of transfers, utility pay-

ments, payment card services, as well as due to the development of alternative sales channels (table 1).

Thus, starting from 2015, the deposit portfolio of Ukrainian banks increased by 55% (by UAH 373,005 million) and as of January 1, 2020 amounted to UAH 1,050,748 million [5]. In the general structure of the deposit portfolio, the share of individuals' funds remains predominant, despite its reduction by 9 percentage points. for 2015-2020 from 61% in 2015 to 53% as of January 1, 2020.

Table 2.

**Structure and dynamics of deposits in national and foreign currencies  
in 2017-2019**

Indicator	2017		2018		2019		Deviation 2019/2017
	billion UAH	%	billion UAH	%	billion UAH	%	
Funds of individuals	478,1	100	508,9	100	552,6	100	+74,5
In national currency	234,6	49,1	268	52,7	314,8	57	+80,2
In foreign currency	243,5	50,9	240,9	47,3	237,8	43	-5,7
Funds of legal entities	404	100	406,2	100	498,1	100	+94,1
In national currency	247,1	61,2	261,7	64,4	311,9	62,6	+64,8
In foreign currency	156,9	38,8	144,5	35,6	186,2	37,4	+29,3

Note. Compiled according to NBU statistics [5].

Nevertheless, in absolute terms, deposits received by banks from individuals increased by 32% from the analyzed period and amounted to January 1, 2020 – 552592 million UAH, which is 136221 million UAH more compared to 2015. It should be noted that there were no sharp fluctuations in deposits from economic entities, their volume has been growing steadily compared to previous periods, in particular, from economic entities increased by 90.6% (236784 million. UAH). In general, the share of funds of business entities in the overall structure of the deposit portfolio increased from 39% in 2015 to 47% as of January 1, 2020.

According to the NBU, the volume of the hryvnia deposit portfolio of Ukrainians, by the end of the year, exceeded the pre-crisis level, which the banking system had 5-7 years ago. The inflow of funds into national currency deposits was facilitated by wage growth rates, more attractive interest rates on hryvnia deposits than on foreign currency deposits, as well as moderate volatility of the hryvnia exchange rate during the year.

In 2018-2020, the inflow of hryvnia funds into the banking system remained high. State-owned banks continued to increase their foreign currency deposits, although the share of foreign currency deposits in the system as a whole is declining. Deposits of legal entities in banks, after the seasonal outflow at the beginning of the year, amounted to UAH 516 billion, Deposits of individuals amounted to UAH 610.5 billion. In the third quarter, the decline in the value of deposits and loans slowed down. The value of 12-month hryvnia deposits of individuals for the quarter decreased by 0.9 percent. n. - up to 8.7% per annum, in US dollars - fluctuated about 1.3% per annum. The spread between 3-month and 12-month hryvnia deposits increased slightly from 0.2 to 0.5. However, this did not create incentives to extend the urgency of deposits. In the second quarter of 2020, the growth of household and business deposits in banks continued. In particular, hryvnia funds of business on bank accounts grew by 9% for the quarter (+

24.6%). Hryvnia deposits of the population grew by 10.9% (+ 24.1%) in the second quarter, mainly due to demand deposits. This increase contrasts positively with the crises of previous years, when depositors actively withdrew funds from banks.

Due to the reduction of the discount rate and the stability of the deposit base, rates on hryvnia deposits of the population continue to decrease (9.6% per annum at the end of June and less than 9% at the end of July), which contributes to lower value of loans in national currency. The cost of foreign currency deposits and loans continues to be low. Due to the strengthening of the hryvnia, the level of dollarization of deposits in the second quarter decreased by 3.8 (to 40.7%). The growth of corporate sector deposits increased by 22.8% (or UAH 93.2 billion) to UAH 501.5 billion. Corporate deposits grew both in the national currency (by 18.6% or UAH 50.5 billion) and in the foreign currency (by 31.3% or UAH 42.7 billion).

The functioning of retail in the bank, the development of innovative products and services directly depend on the volume of use of payment cards, and they, accordingly, depend on the technological capabilities and availability of the network of their use. It should be noted that in any case (both in terms of liabilities and assets) the growth of retail operations in banks provides the banking sector with commission income from services. Quite often such income is not directly related to the movement of funds in installments or their placement in the form of loans: currency exchange, money transfers, payment card transactions, payment through the bank of services of various companies. A specific feature of the retail business is also that all conditions for the provision of products in this area, including their cost, are openly published on the websites of banks, information-analytical and reference portals (in terms of interest rates on deposits and loans). Lending to individuals is the most profitable activity for a modern credit institution (table 3).

**Structure and dynamics of the credits portfolio of banking institutions of Ukraine  
in 2017-2019**

Indicator	2017		2018		2019		Deviation 2019/2017
	million UAH	%	million UAH	%	million UAH	%	
Credits	1 007 132	100	1 144 904	100	1 061 873	100	+54 741
Credits to public authorities	1 011	0,17	2 508	0,22	4 068	0,38	+3 057
Credits to businesses	848 818	84,2	939 037	82,01	845 637	79,6	-3 181
Credits to individuals	157 287	15,61	203 321	17,7	212 133	19,9	+54 846
Credits to non-banking financial institutions	15	0,014	38	0,0033	35	0,003	+20

Note. Compiled according to NBU statistics [5].

As can be seen from Table 3, since 2017 there has been a positive trend in the total portfolio of loans issued to individuals by Ukrainian banks, and as of 01.01.2020 the total amount amounted to UAH 212,133 million. In 2019, banks were most active in developing consumer lending. Due to this, the portfolio of hryvnia loans to households is growing.

The decrease in corporate loans took place both in the national currency (by 7.4% or UAH 35.1 billion) and in the foreign currency (by 19.3% or UAH 76.9 billion). Although in December 2019 the weighted average interest rate on loans in national currency granted to the corporate sector was 15% (in December 2018 - 20.9%). According to the NBU, average interest rates on loans to economic entities in hryvnias for the third quarter decreased by 1.0 (to 9.6% per annum), and on loans to individuals - by 1.9 (to 30.9% per annum). The cost of foreign currency loans to businesses was about 5% per annum. The volume of default loans in the loan portfolio of legal entities amounted to UAH 215 billion (95%) in PrivatBank, UAH 86 billion in Sberbank (65%), UAH 70 billion (53%) in Ukreximbank, and only UAH 6 billion (14%) in Ukrgasbank. The total amount of NPLs in the banking system amounted to UAH 581 billion (share in the portfolio - 51%). Of this amount, state-owned banks accounted for UAH 415 billion (71% of the total NPL). The increase in loans to individuals increased by 4.7% (or UAH 9.3 billion) to UAH 205.3 billion. At the same time, loans in the national currency increased by 24.1%, or UAH 32.6 billion, and in foreign currency - decreased by 38.4%, or UAH 23.3 billion. The weighted average interest rate on loans in national currency to households increased to 35.8% (in December 2018 - 33.1%).

The real trend of lending is characterized by short-term loans obtained for the purpose of operational provision of the banking system with resources, compliance with economic standards, maintaining liquidity, solvency and stability of banks. Such a money market instrument is the most real opportunity to maintain the liquidity of bank balance sheets, replenish correspondent accounts and to conduct active operations in other

more profitable segments of the financial market. In five years, the amount of interbank loans decreased by almost a third. Lending in other countries involves significant credit risk, but it is measured on a slightly different scale. In world practice, the future of the bank, the share of overdue (over 90 days) loans which is close to 7% of the total, is quite problematic. For reliable banks, this figure is about 3%. For the domestic banking system, the values of similar indicators vary in a wide range: from 2 to 30% [2].

The concept of "retail banking" is quite ambiguous in the understanding of many economists. Specialized dictionaries define retail banking as the provision of banking services to individual clients - a wide range of individuals, namely households and private entrepreneurs, in addition to the very affluent. In general, there are no clear signs of the allocation of traditional or non-traditional services of commercial banks today, because a large number of non-traditional services for individual commercial banks are common, ie they do not refer to the newest [6].

Since the basis of retail banking is the provision of retail banking products and services, we consider it appropriate to consider banking services through the prism of the economic concepts of "retail banking", "retail banking" and "retail banking". Retail banking business is an independent direction of banking activity connected with rendering of standard services to the consumer (fig. 1). Improving the business processes of retail customer service is one of the most important tasks of the banking sector. This is due to the following factors. On the one hand, retail customer service in the banking sector reflects the degree of economic development of the country, and on the other hand, retail customer service in the banking business contributes to economic development, giving the population financial resources in the form of loans and accepting deposits. Unfortunately, the financial crisis has halted the progressive development of the banking market and its retail segment.

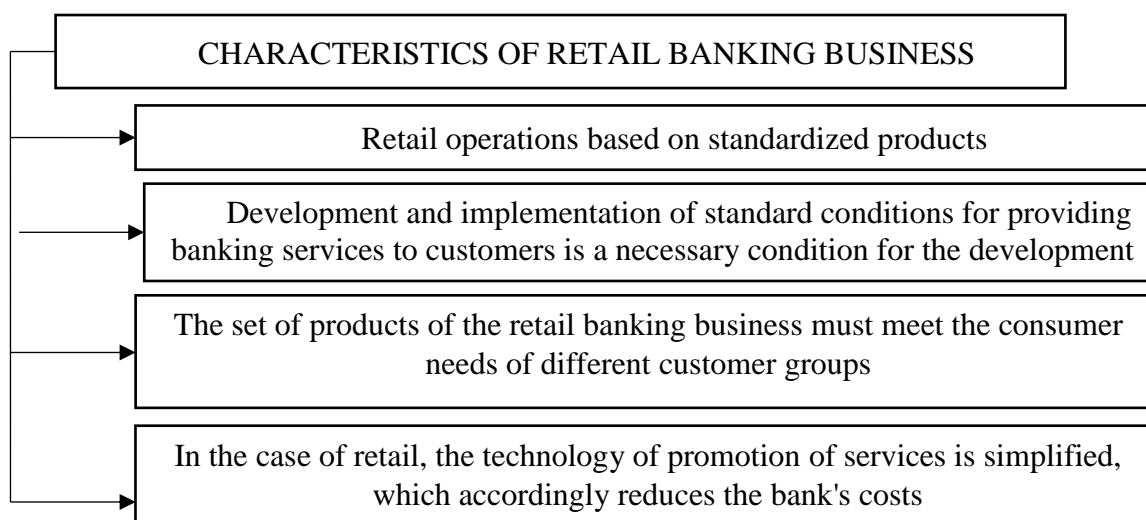


Fig. 1. Characteristics of retail banking

Note: developed by the author on the basis of [8]

We can highlight the main features of the retail banking market:

- the activity of banks in providing services is in the sphere of special attention of the state and society, as the banking sector from the social point of view is an area of increased risk, because the loss of the bank's ability to properly circulate money entails loss of savings, including secured part of it;
- in the legislation, the activities of banks related to the attraction and use of funds of individuals are considered as the provision of services;
- retail banking services are offered to the population to meet personal, family needs, not related to business activities, such services of banks, which are based on standard banking products.

Internet banking already provides basic products and services at the appropriate level and, as a segment of the retail banking market, is actively developing, while providing the necessary level of security, expanding functionality, including through the offer of insurance and investment services, which brings it closer to

the concept of marketplace and building a service ecosystem, improving the interface with the extension of the chat function and the desktop model of figure 2.

This positive trend is associated with a steady increase in demand for non-cash transactions among Ukrainians and the promotion of innovative financial services. The volumes of non-cash transactions with payment cards were distributed as follows: -35.8% (or UAH 465 billion) were card-to-card transfers (P2P transfers), the average check of which was UAH 1,723; -32.6% (or UAH 423 billion) - transactions on the Internet, the average check - UAH 361; -29.3% (or UAH 381 billion) - settlements in the trade network, the average check - UAH 242; -2.2% (or UAH 29 billion) - transactions using self-service devices (PTKS, ATM), the average check of such transactions was UAH 488. Constant expansion of the range of services, reduction of their cost, improvement of quality of credit - settlement and cash service, rendering of various consultations, preferential service of regular depositors will promote increase in volume of resources of bank.

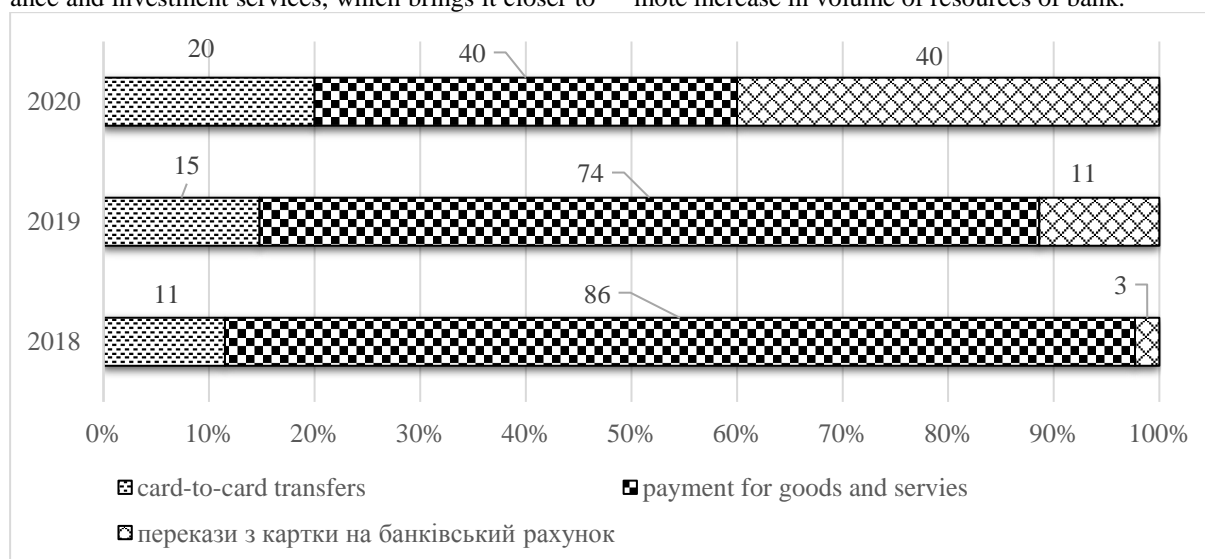


Fig. 2. Share of non-cash transactions by Internet banking in Ukraine, %

Note: developed by the author on the basis of [4]

The competitive position of Ukrainian banks in the segment of Internet banking is influenced by the time of its entry, for example, to followers of PrivatBank, who were forced to catch up with lost competitive opportunities include FUIB, Oschad24 [5]. Thus, the positive dynamics was determined in the volume of non-cash transactions by means of Internet banking. In particular, the volume of card-to-card transfers increased from UAH 220.1 billion in 2018 to UAH 762.6 billion in 2020. In 2020, the activity of card-to-bank transfers reached UAH 152.4 billion.

PrivatBank has developed the most attractive, convenient and multifunctional Internet banking for its clients. This is confirmed by the rating of the Internet banking system according to FinAwards, where Privat24 took first place. The use of innovative technologies in the banking business and in banking retail in particular allows better customer service, reduces the risk of retail services and increases the bank's profitability in providing services to each customer, including the profitability of retail business in general. Thus, in today's conditions, the effective operation and competitiveness of any commercial bank is largely ensured by the introduction of new, socially oriented services by expanding the scope of retail with the use of innovative technologies. Each commercial bank forms its own retail system, taking into account its own strategy and experience in the banking market, taking into account opportunities and forecasts for the future. The direct formation of the product line of bank retail is based on the results of a comprehensive study of the needs of private consumers in financial services and should include comprehensive products that will fully meet such needs.

One of the main trends in retail today is collaboration with other areas of activity. One of the most significant events in this direction is the issuance of ATB-Pay's own payment card by ATB Corporation together with Raiffeisen Bank Aval. This is a good example of how retail enters an unfamiliar field, especially given the recent high-profile developments - the struggle of retail to reduce acquiring rates. Today in Ukraine there is one of the highest rates among European countries. Ukrainian retailers pay from 1.8% to 3% of the fee for each non-cash payment of the buyer, which is distributed between the bank that issued the card (interchanging commission, which is 1.4-1.6%) and the bank-owner of the terminal. The retail business has begun to look for its own ways to address this issue - and this is the first "bell" for the financial sector. The potential for issuing such cards only for ATB customers is estimated at 20 million units.

The main problems of the retail banking market in 2020: the problem of basic banking, the problem of falling average profitability in the deposit market, the problem of car loan market development, the problem of reducing profitability in the mortgage market, the

problem of reducing customer demand in consumer lending, quarantine under the condition of coronavirus COVID-19. Decisions to improve the business processes of retail customer service of the bank should be focused on the active development and implementation of innovative products, as well as the adoption of positive results of international experience. These proposals will take into account the areas of cooperation of the bank in the field of communication with customers, design services, as well as additional services that will help the bank to win customer loyalty and increase sales. To solve these problems, the bank needs to create a comprehensive mechanism of action.

The effective functioning of the retail lending system significantly determines the degree of development of the banking sector and the satisfaction of consumer needs. At the present stage, the problematic aspects in this area are: high risk of operations, a significant amount of overdue debt, low quality of banks' loan portfolio and lack of capital, which leads to the application of effective response measures. The credit risk of retail banking products should be considered as the probability of losses due to external and internal factors arising from the adoption of appropriate management decisions related to lending to individuals and small businesses. In the hierarchical structure of credit risk of retail banking products can be divided into 4 levels:

- 1) the level of the borrower, where the risks are directly determined by the behavior of the borrower who violates the terms of the loan agreement;

- 2) individual level, where the risks are associated with illegal or incompetent decisions of employees of the credit department;

- 3) micro-level, where the risks are associated with the decisions of the credit committee of the bank;

- 4) macro level, where risks are determined by external macroeconomic factors in relation to the bank. At the same time, the level of the borrower and the macro level are external risk factors in relation to the bank, and the micro and individual levels are internal risk factors.

Building long-term relationships with customers is a strategic goal not only of the banking business. Attempts are being made in almost all areas of the economy to create a customer base with long-term relationships. One of the main reasons that push businesses to intensive research in this direction is the intensification of competition within and outside the industry. Developed programs and customer loyalty strategies are very diverse and high cost, but clear criteria for the success of their implementation has not yet been developed. The generally accepted stages in the implementation of the retail strategy are: creation of a repository of information about customers; customer base segmentation; scoring and probability; recalculation of proposals in real time fig. 3.

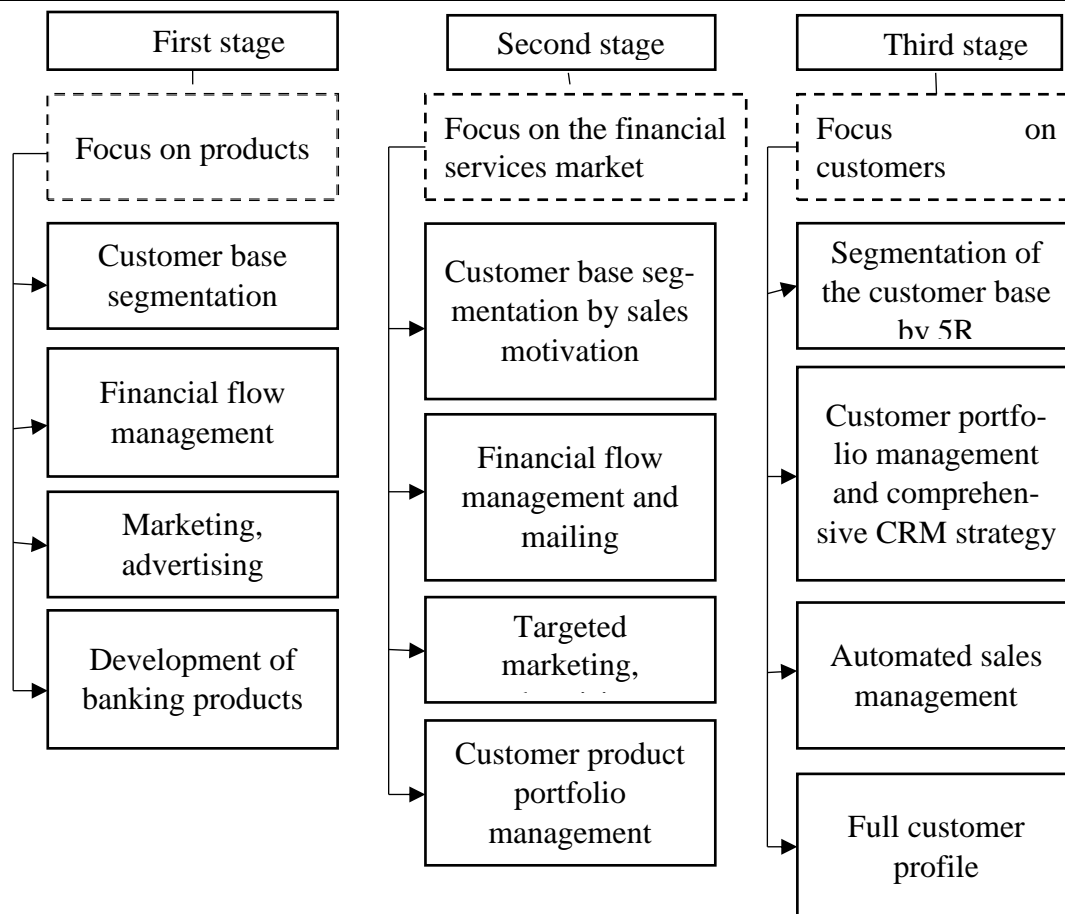


Fig. 3. Stages of development of banking retail in a customer-oriented approach

Note: developed by the author on the basis of [9]

Banking retail as an object of risk research has a number of features. The main one is due to the significant complexity of the process of implementing a banking product and the evaluation of this process. Therefore, when analyzing the risk of innovative banking retail, it is necessary to move from building complex models of risk assessment to a detailed description of risk factors and developing measures to reduce each of them [9].

Western banks realized the need to move from product orientation to customer loyalty when faced with a significant loss of customer share in the financial market. The US banking sector responded to the shrinking customer base with a series of upswings that led to the consolidation of functions. And at this stage of these actions was enough for the industry to maintain its position. Product-centric business organization forces us to focus only on the payback of individual banking products, and the banking industry needs to learn to assess the profitability of products and services for bank customers. To make the transition to a customer-oriented model, you can reorganize the business according to a more individual approach to customers. The formation of models of this approach is associated with the emergence of the concept of banking retail.

Taking into account the experience of European banks, we can identify the main directions of development of retail banking in the context of current trends and the level of development of information technology.

1. Simplification of banking services in terms of tariffs, conditions of use and their total number has a positive impact on the maintenance and growth of the bank's customer base. The vast majority of customers want to get concise, comprehensive and clear information about banking services and products.

2. Personal service in the format of a dialogue with the client in order to establish a relationship of trust with him. The role of the bank as a seller of services has finally exhausted itself. Today, the client wants to get in the bank more than the selected service. As a result, those banking institutions that study the needs of customers, provide personal service and create value proposals for their customers are distinguished by high customer loyalty and, as a result, greater coverage of the customer base with products and services.

3. The study of customer behavior and customer path data today is an integral part of the marketing policy of the leaders of the banking sector and institutions that fully meet the criteria of a customer-oriented bank. Accumulation, analysis and use of data for the formation of marketing activities can increase the relevance of advertising links to the customer and the effectiveness of sales.

4. Expanding the range of services provided while simplifying and reducing the share of homogeneous products allows you to attract more customers and at the same time reduce customers' desire to change the service bank. This is confirmed by the data of customer loyalty surveys of banking institutions in Europe,

which use banks other than the servicer, only in the absence of the "main bank" services they need. The implementation of these measures will promote the development of domestic retail banking business, increase customer loyalty.

Further investigation of these issues should be carried out in the direction of substantiating the relationship of customer loyalty with the number of banking and other services provided by domestic banks. The development of online channels, the sale of services in banks and the introduction of the concept of service in the retail banking business are promising trends and require thorough study based on the experience of developed countries.

**Conclusion.** The efficient operation and competitiveness of any commercial bank is largely ensured by the introduction of the latest services of commercial banks, socially oriented services by expanding the scope of retail with the use of innovative technologies. Banking retail should actively develop in the areas of maintaining deposits at the current level, increasing the resource base by attracting household deposits, increase without mortgages and short-term loans, increase commission income by increasing the number of transfers, utilities, payment card services, as well as development of alternative sales channels (Internet and client-bank, self-service terminals, banking networks).

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**Wdowenko L.O.**

*Doktor nauk ekonomicznych, profesor, kierownik Katedry Finansów, bankowość i ubezpieczenia, Winnicki Narodowy Uniwersytet Rolniczy (Winnica)*

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## CZYNNIKI WPŁYWU NA BEZPIECZEŃSTWO GOSPODARCZE UKRAIŃSKICH PRZEDSIĘBIORSTW PRZETWÓRCZYCH

### Streszczenie.

Artykuł ujawnia teoretyczne podstawy pojęcia „bezpieczeństwo”, „bezpieczeństwo ekonomiczne przedsiębiorstwa”. Rozwój przedsiębiorstw przetwórczych przemysłu piekarniczego wpływa na kształtowanie bezpieczeństwa żywnościowego i jest orientacyjnym wskaźnikiem rozwoju gospodarczego Ukrainy. Bezpieczeństwo ekonomiczne bezpiecznych przedsiębiorstw przetwórczych branży piekarniczej to stan ich działalności, który charakteryzuje się odpornością na zagrożenia wewnętrzne i zewnętrzne, zdolnością do zapewnienia realizacji własnych interesów ekonomicznych, zdolnością do działania i rozwoju w warunkach zdrowej konkurencji i ryzyko biznesowe. Stwierdza się, że osiągnięcie ogólnego poziomu bezpieczeństwa ekonomicznego przedsiębiorstw przetwórczych wymaga zbadania pełnego spektrum czynników, od których zależy efektywność ich działania w warunkach ostrej konkurencji. Artykuły analizują stan rozwoju przedsiębiorstw branży piekarniczej, identyfikują zewnętrzne i wewnętrzne czynniki wpływające na bezpieczeństwo ekonomiczne przedsiębiorstw.

**Abstract.**

The article reveals the theoretical foundations of the concept of "security", "economic security of the enterprise". It is established that the stable level of economic security of the national economy is determined by the level of security of the real sector of the economy and individual industries. The development of processing enterprises in the bakery industry affects the formation of food security and is an indicative indicator of economic development of Ukraine. The economic security of safe processing enterprises of the bakery industry means a state of their activity, which is characterized by resistance to internal and external threats, the ability to ensure the realization of their own economic interests, can operate and develop in conditions of healthy competition and business risk. It is determined that to achieve the general level of economic security of processing enterprises requires the study of the full range of factors on which depends the effectiveness of their operation in conditions of fierce competition. The articles analyze the state of development of enterprises in the bakery industry, identify external and internal factors influencing the economic security of enterprises.

**Słowa kluczowe:** bezpieczeństwo ekonomiczne, zagrożenia, przedsiębiorstwa przetwórcze, gałąź piekarnicza  
**Keywords:** economic security, threats, preconceived notions, baker pigeon

Z punktu widzenia budowania relacji rynkowych priorytetem polityki gospodarczej jest wspieranie stabilności gospodarczej i wzrostu gospodarczego jako podstawy trwałego poziomu bezpieczeństwa narodowego, który determinuje poziom bezpieczeństwa poszczególnych sektorów gospodarki. Zapewnienie bezpieczeństwa ekonomicznego jest ważne, ponieważ wpływa na podejmowanie ważnych decyzji społeczno-gospodarczych, a także zwiększa aktywność przedsiębiorstw, które w procesie prowadzenia biznesu kumulują zagrożenia i wyzwania, których negatywny wpływ determinowany jest wynikami ich działalności.

Oznacza to, że efektywny rozwój przedsiębiorstw opiera się na bezpieczeństwie ich działalności gospodarczej.

Pojęcie „bezpieczeństwa” jest interpretowane jako: „stan, w którym ktoś lub coś nie jest zagrożone” [1, s.70]; „stan ochrony obiektu lub podmiotu prywatnego przed różnymi zagrożeniami oraz stworzenie zestawu odpowiednich środków eliminujących takie środki” [2 s.50]; „stan ochrony wszystkich interesariuszy, społeczeństwa i państwa poza i zagrożenia wewnętrznego” [3, s. 207].

Oznacza to, że we wszystkich interpretacjach pojęcia „bezpieczeństwo” kładzie się nacisk na obecność zagrożenia.

I tak w Encyklopedii Ekonomicznej [4 s.95] „enterprise security – stan ochrony żywotnych interesów przedsiębiorstw, przedsiębiorstwa ze struktur mafijno-cieniowych, niska konkurencja, niekompetentne magazyny, niedoskonałe prawo, a także umiejętność przeciwdziałania tych zagrożeń i osiągnięcia celów wewnętrznych.” Dlatego interpretacje te rozróżniają zagrożenia zewnętrzne i wewnętrzne.

Ekonomiczny słownik encyklopedyczny [2 s.50] przy określaniu „bezpieczeństwa organizacyjno-gospodarczego przedsiębiorstwa” skupia się na czynnikach wewnętrznych, od których zależy: „stan ochrony interesów przedsiębiorstw, firm lub spółek przed niedochodowym lub celowym zarządzaniem szkołą, przed wyższą gospodarką rynkową i niedoskonałym rządem regulacja itp. ich neutralizacja”.

Kolisnichenko P.T. [5, s. 42] twierdzi, że „bezpieczeństwo ekonomiczne przedsiębiorstwa przed

mówcami pozytywnymi można zdefiniować jako proces ciągły: diagnoza i ocena jego składników funkcjonalnych i kryteriów; wstępna, ochrona przed negatywnymi wpływami i przeciwdziałanie im poprzez stabilizację działania, kształtowanie bankowej strategii podejmowania optymalnych decyzji przy udziale tworzenia przewag konkurencyjnych i zapewnienia zrównoważonego rozwoju podmiotu gospodarczego na wszystkich etapach jego życia i cykli operacyjnych”.

Zubko T.L. [6] traktuje bezpieczeństwo ekonomiczne przedsiębiorstwa jako „ochronę przedsiębiorstwa przed negatywnymi skutkami środowiska zewnętrznego i wewnętrznego, co sprzyja szybkiemu wykorzystaniu różnych zagrożeń lub warunków zewnętrznych bez negatywnych konsekwencji dla przedsiębiorstwa. najbardziej efektywne wykorzystanie świadczenia”.

Bezpieczeństwo ekonomiczne gospodarki narodowej przejawia się istniejącymi mechanizmami ochrony gospodarki systemu gospodarczego na każdym poziomie strukturalnym i hierarchicznym przed negatywnym wpływem zagrożenia odpowiednimi środkami wewnętrznymi i zewnętrznymi z jednej strony, a z drugiej – przy stałym i stabilnym wzroście [7].

Zatem o stabilnym poziomie bezpieczeństwa ekonomicznego gospodarki narodowej decyduje poziom realnego bezpieczeństwa kakaowego.

Z punktu widzenia podejścia technologicznego możliwe jest uzyskanie bezpieczeństwa ekonomicznego realnego sektora gospodarki jako zbioru poziomów bezpieczeństwa ekonomicznego branż wytwarzających dobra materialne. Jest on stosowany poprzez odpowiednie środki wewnętrzne i zewnętrzne w celu ochrony interesów sektorowych z jednej strony i wzrostu gospodarczego z drugiej.

Przemysł spożywczy jest jednym z liderów w pozyskiwaniu sprzedawanych produktów przemysłowych. Przez ostatnią dekadę branża rozwijała się w dość szybkim tempie i pewnym ominięciu. Rozwój przemysłu spożywczego jest także jednym z priorytetów nowoczesnej polityki gospodarczej Ukrainy ze względu na państwo ze względu na bezpieczeństwo gospodarcze i żywnościowe krajów [8].

Przemysł spożywczy Ukrainy tworzą dziesiątki gałęzi przemysłu, z których podstawowe to: cukier,

mleczarstwo, olej i tłuszcz, cukiernictwo, mięso, napoje alkoholowe i piekarnicze. Ma ścisłe związki produkcyjne i gospodarcze z rolnictwem, handlem i ściółką.... Rozpatrując przemysł spożywczy jako zbiór systemowych podsystemów mowy charakteryzujących jego cechę, jego bezpieczeństwo ekonomiczne jest definiowane przez zbiór poziomów bezpieczeństwa ekonomicznego branż przemysłowych produkujących żywność, napoje, aromaty lub surowce do ich produkcji oraz tytoń wirus. Wykorzystywany jest przez krajowe i narodowe środki ochrony interesów przemysłu spożywczego i środków jego wzrostu gospodarczego [5, s.24].

Przedsiębiorstwa przetwórcze, spółki zależne branży piekarniczej, działają w niestabilnym otoczeniu zewnętrznym, które charakteryzuje się dynamiką i niestabilnością. Stan ten wymaga szybkiej akcesji pod kątem efektywnego racjonalnego wykorzystania sumy stanu mniejszości. Dlatego kluczem do zrównoważonego rozwoju zwiększającego efektywność ekonomiczną będzie rzetelna synonizacja organizacji na poziomie krajowym.

Poziom bezpieczeństwa przedsiębiorstwa zależy od tego, czy kierownictwo i menedżerowie są przygotowani na ewentualne zagrożenia i jak szybko, ponieważ mogą szybko stworzyć likwidację tego zagrożenia, co powoduje szkodliwe skutki niektórych negatywnych składników środowiska zewnętrznego i wewnętrznego [9].

Bezpieczeństwo ekonomiczne jest postrzegane jako siła przedsiębiorstwa, zbudowana na zasadach rentowności, samowystarczalności, odporności na wyzwania otoczenia zewnętrznego. Pomyślnie działające i zrównoważony rozwój przedsiębiorstw przetwórczych zależą od niezawodności, zarządzalności i efektywności systemu zarządzania bezpieczeństwem ekonomicznym, który zapewnia brak zanieczyszczeń i zagrożeń, co prowadzi do wszelkich ryzyk biznesowych, niepewności i zmienności warunków zewnętrznych w przyszłości.

Ważną rolę w zarządzaniu reprodukcją pełni monitoring bezpieczeństwa ekonomicznego przedsiębiorstw, który pozwala zapewnić ilościową i jakościową ocenę ryzyka, zapewnić funkcjonalną trwałość rozwoju, a także reagować na zmiany.

Zagadnienia bezpieczeństwa ekonomicznego przedsiębiorstw przetwórczych w obliczu zagrożeń wewnętrznych i zewnętrznych determinują dynamikę ich zrównoważonego rozwoju, konkurencyjności, w tym poprzez racjonalne wykorzystanie zasobów przedsiębiorstwa – zdolności produkcyjnych, surowców, własności intelektualnej, optymalizacji kanałów sprzedaży.

Przemysł piekarniczy Ukrainy, ukierunkowany na produkcję i sprzedaż produktów ważnych społecznie. Specjalnością przemysłu piekarniczego Ukrainy jest praca w rolnictwie na własne potrzeby. Specjalizacja rynku pieczywa i producentów piekarni może nastąpić w czasie, gdy nowa satysfakcja dotyczy głównie produktów ukraińskich, branża jest bardzo

konkurencyjna. Następuje wzrost tempa rozwoju półproduktów piekarniczych, czyli dywersyfikacji produkowanego produktu. Na rynku obecność małych operatorów, których liczba sukcesywnie rośnie w związku z rozwojem liczników sieciowych. Przeciwnie produkcja producentów piekarni w miejscach sprzedaży półproduktów wymaga mniej miejsca, czasu i pracy niż przy regulacji baz supermarketów pełnego procesu produkcji chleba.

Eksperci szacują wydajność krajowego rynku pieczywa na 4,1-4,2 mln ton rocznie, co jest oparte na dziennej biologicznej normie spożycia chleba na osobę (w przybliżeniu). Zakwaterowanie ludzi na Ukrainie to około 38 kg chleba rocznie (według Państwowej Służby Cystycyzmu Państwowego). Jednak według niezależnych ekspertów Ukraińcy spożywają 50-75% więcej chleba niż ikansheroperke, - ponad 100 kg rocznie. Oznacza to, że wielkość sektora cienia produkcji chleba przez różnych ekspertów szacowana jest na 40-70%, odpowiadają rzeczywistości. Wielkość produkcji pieczywa pszennego zajmuje około połowy objętości wszystkich pieczywa wypiekanego. Chleb żytni to około jedna trzecia, były produkty – około 1/6 rynku [10].

Rynek producentów pieczywa i wyrobów piekarniczych jest uzależniony od sytuacji na rynku mąki i zbóż, które są wrażliwe na czynniki sezonowe i środki państwowej regulacji.

Rozwój branży piekarniczej wpływa na kształtowanie się bezpieczeństwa żywnościowego na Ukrainie i jest motywem indywidualnym. Obecnie w krajowym przemyśle piekarniczym nasila się konkurencja między dużymi przedsiębiorstwami a minipiekarniami. Rosnące ceny surowców, a co za tym idzie produktów zbożowych – przeciążenie i przeciążenie mocy produkcyjnych. Zaostrzają się konflikty między producentami piekarniczymi a zakładami produkcyjnymi [11].

Analizując dynamikę produkcji producentów piekarskich na Ukrainie w latach 2012-2018 (tabela 1), możemy stwierdzić, że w 2018 roku w porównaniu do 2012 roku osiągnięcie produkcji pieczywa na Ukrainie zmniejszy się o 537 tys. ton, czyli 68,2%. Znacząco zmniejszyła się produkcja pieczywa pszennego - o 294 tys. ton, czyli 62,5%.

W 2012 roku produkcja producentów piekarni na osobę wyniosła 35,33 kg, a w 2018 roku 27,24 kg proc. Zmniejszenie produkcji pieczywa zaostrza konkurencję na rynku. Rozszerzanie jej asocjacji i zwiększanie wymagań co do parametrów jakościowych jest główną rezerwą dla ciągłego stałego wzrostu.

Poziom bezpieczeństwa ekonomicznego przedsiębiorstw piekarniczych zależy od wielu czynników. Jednym z najważniejszych z nich jest cena surowców. W latach 2012-2018 wzrost cen wyrobów piekarniczych wzrósł średnio 2,3 razy. Najdroższy jest chleb z żywej mąki, ale cena chleba pszennego szybko rośnie. Oznacza to, że ceny chleba żywego i pszennego są wyrównane. Sytuacja ta wynika ze stopniowego wzrostu popytu na pieczywo pszenne.

Tabela 1

**Dynamika produkcji producentów piekarni w Ukrainie  
za lata 2012-2018, tys. ton**

Indeksy	Lata							Odchylenie 2018 do 2012 (+;-)
	2012	2013	2014	2015	2016	2017	2018	
Wypieki	1687	1560	1357	1231	1160	1150	1150	-537
Chleb żytni	12	15	14	15	12	12	12	-
Chleb pszeniczny	783	706	606	533	493	490	489	-294
Chleb żytnio-pszenny	500	466	413	401	370	365	360	-140
Inny	383	366	316	276	278	280	281	-102
Chleb jest inny	9	7	8	6	7	3	8	-1

Dla osiągnięcia najlepszego poziomu bezpieczeństwa ekonomicznego przedsiębiorstw przetwórczych konieczne jest zbadanie pełnego spektrum czynników, dzięki którym efektywność ich działania w warunkach ostrej konkurencji.

Wszystkie czynniki bezpieczeństwa ekonomicznego dla własnego pochodzenia odnoszą się do zewnętrznego i wewnętrznego. Czynniki zewnętrzne spowodowane są wpływem środowiska zewnętrznego, a ich działanie może stać się zagrożeniem dla szkła. Firma musi je stale monitorować i reagować na nie, więc postępuj odwrotnie. Czynniki wewnętrzne obejmują relacje z kontrahentami, ustawodawstwo gospodarcze i podatkowe, warunki rynkowe, niepewność otoczenia zewnętrznego, wsparcie państwowe przedsiębiorstw rolnych i warunki klimatyczne, państwowe wsparcie przedsiębiorstw rolnych, regulację procesu technologicznego, przedsiębiorstwo inwestycyjne, bezpieczeństwo ekonomiczne przedsiębiorstw rolnych, niepewność otoczenia zewnętrznego, ustawodawstwa gospodarczego i podatkowego. Obejmują one wielkość środków finansowych, zapewnienie wykwalifikowanej kadry, logistykę, regulację procesu technologicznego, jakość i strukturę zasobów naturalnych, wsparcie informacyjne i analityczne, pracę z wynalazkami i innowatorami, organizację systemów zarządzania, ochronę socjalną, klimat inwestycyjny, przedsiębiorczość, poziom zazieleniania produkcji rolnej i integracji przedsiębiorczości w relacjach produkcyjnych i rynkowych [12, s.361].

Wszystkie zagrożenia dla przedsiębiorczości można podzielić na produkcyjne (brak zasobów, przestarzały sprzęt, gromadzenie bazy materiałowo-technicznej, naruszenie procesu technologicznego) branże (niski poziom inwestycji branż, zwiększona konkurencja) polityczne (niedoskonały rząd, wzrost kosztów podatkowych) finansowo-ekonomicznym (niestabilność relacji finansowych i kredytowych, niekorzystne warunki rynkowe, nieefektywne zarządzanie) środowiskowym (zagrożenia dla środowiska i człowieka) prawnym (niestabilność obowiązującego ustawodawstwa). Ponadto zagrożenia należy rozszerzyć na zewnętrzne (ze względu na wpływ otoczenia zewnętrznego i są niekontrolowane) oraz wewnętrzne (ze względu na niedoskonałość przedsiębiorstwa). Dla przedsiębiorstw branży piekarniczej ważne jest przywracanie zagrożeń zewnętrznych związanych ze zmianami warunków

przyrodniczych i klimatycznych, co jest determinowane wynikami producentów rolnych, niezbędnych dla branży piekarniczej, i jest palącym problemem rozwoju świata, niedoskonałości finansowej oraz systemu kredytowe i podatkowe; wewnętrzne - od niedoskonałości systemu i metod zarządzania innymi. Zagrożenia wymagają wcześniejszego ostrzeżenia lub przewyżczenia, dlatego ich skład jest określany podczas tworzenia systemów wskaźników bezpieczeństwa ekonomicznego takich przedsiębiorstw.

W celu zapewnienia skutecznego zarządzania bezpieczeństwem ekonomicznym zakładów przetwórczych, zapobiegania i zapobiegania skutkom mogącym powodować zagrożenia zewnętrzne, konieczne jest tworzenie pełnej informacji o rzeczywistych i potencjalnych zagrożeniach.

Nawiasem mówiąc, od tego samego zależy poziom bezpieczeństwa przedsiębiorstwa, pod warunkiem, że kierownictwo i menedżerowie są przygotowani na możliwe zagrożenia i jak szybko można je stworzyć, aby zidentyfikować te zagrożenia, które nie mają szkodliwych skutków niektórych negatywnych elementów składowych środowisko zewnętrzne i wewnętrzne [9, s. 3].

Dlatego przy planowaniu działalności dla dowolnego przedsiębiorstwa z branży piekarniczej ważne są kwestie bezpieczeństwa ekonomicznego. Dlatego konieczne jest zidentyfikowanie tych zagrożeń, które mogą stanowić zagrożenie dla opracowania skutecznych środków ochrony.

Istotny wpływ na bezpieczeństwo ekonomiczne przedsiębiorstwa mają powiązania strukturalne i organizacyjne, powiązania prawno-ekonomiczne pomiędzy podmiotami gospodarczymi, zasoby materialne i intelektualne gwarantujące stabilność przedsiębiorstwa, rentowność, właściwy planowany rozwój strategiczny [13].

Głównym zadaniem bezpieczeństwa ekonomicznego podmiotów gospodarczych jest stworzenie odpowiednich warunków nie tylko dla pomyślnego funkcjonowania przedsiębiorstwa dzisiaj, ale dla jego efektywnego rozwoju w przyszłości. Sposoby poprawy kondycji ekonomicznej przedsiębiorstwa powinny koncentrować się na optymalnym wykorzystaniu własnego majątku przedsiębiorstwa niezbędnego do osiągnięcia tego celu, co jest możliwe poprzez redukcję potencjalnych zagrożeń ekonomicznych i zwiększenie

bezpieczeństwa ekonomicznego podmiotów gospodarczych: tworzenie warunków do poprawy efektywności przedsiębiorstwa poprzez utrzymanie odpowiedniego poziomu jego stabilności finansowej i płynności; wprowadzenie do działalności firmy nowych technologii informatycznych i nowoczesnego sprzętu w celu zwiększenia jej rentowności i konkurencyjności; organizacja optymalnej struktury organizacyjnej dla efektywnego zarządzania; wsparcie kwalifikacji pracowników przedsiębiorstwa na najbliższym szczeblu oraz optymalny fundusz dystrybucyjny na wdrożenie nowoczesnych środków ochrony środowiska przed szkodliwym działaniem twórczej emocji; zapewnienie skutecznej ochrony prawnej wszelkich działań przedsiębiorstwa; osiągnięcie niezbędnej ochrony interesów handlowych i informacji wewnętrznych przedsiębiorstwa, osiągnięcie wymaganego poziomu interakcji wszystkich jednostek strukturalnych firmy; zapewnienie skutecznych środków bezpieczeństwa dla pracowników przedsiębiorstwa, jego kapitału, aktywów i innych materiałów.

Moglibyśmy również określić sposoby zabezpieczenia ekonomicznego, takie jak: zbieranie i analizowanie informacji o określonej sytuacji gospodarczej, prognozowanie przyszłych działań i ewentualnych zysków dla firmy, podejmowanie decyzji mających na celu zapobieganie lub minimalizowanie wpływu zidentyfikowanych zagrożeń, organizowanie działań w celu zapobiegania możliwych zagrożeń, strategii ich eliminacji, podejmowania decyzji i organizacji działań w odpowiedzi na pojawiające się zagrożenia. [14, s.183].

**Wnioski.** Warunkiem zrównoważonego rozwoju przedsiębiorstw przetwórczych jest stworzenie własnego systemu bezpiecznego ekonomicznie bezpiecznego ekonomicznie ekonomicznie. Bezpieczeństwo ekonomiczne bezpiecznych przedsiębiorstw przetwórczych branży piekarniczej oznacza stan działalności przedsiębiorstw zapewniający odporność na zagrożenia wewnętrzne i zewnętrzne, zdolność do zapewnienia realizacji własnych interesów gospodarczych, możliwość funkcjonowania i rozwoju w warunkach zdrowej konkurencji i biznesu ryzyko. Bezpieczeństwo ekonomiczne indywidualnego przedsiębiorstwa określa się jako składową wzmocnienia gospodarki narodowej. Wsłuchując się w różne czynniki dotyczące bezpieczeństwa ekonomicznego przedsiębiorstw przetwórczych, aktualne są dziś, kwestie wsparcia państwa na wystarczającym poziomie produkcji rolno-przemysłowej o szczególnych cechach i z kluczowymi wyzwaniami rolnictwa w postaci tworzenia magazynowego rozwoju gospodarczego i wydajności przedsiębiorstw piekarniczych, które produkują wysokiej jakości produkty na rynku krajowym, co z kolei zagwarantuje nie tylko satysfakcję, ale także bezpieczeństwo narodowe krajów.

Wsłuchując się w różne czynniki dotyczące bezpieczeństwa ekonomicznego przedsiębiorstw przetwórczych, kwestie wsparcia państwa na wystarczającym poziomie produkcji rolno-przemysłowej pozostają dziś aktualne ze szczególnymi cechami i kluczowymi wyzwaniami korzyściami rolnictwa rolniczego, jakimi jest tworzenie magazynów

dla rozwoju gospodarczego i wydajności piekarstwa przedsiębiorstw na rynku krajowym, co z kolei gwarantuje nie tylko satysfakcję, ale także krajową bezpartyjną bezpartyjną bezpartyjną.

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*Волкова Ольга Евгеньевна*

*АОЧУ ВО «Московский финансово-юридический университет МФЮА» (УФ «Калининград»)*

*Россия, Калининградская обл., г. Калининград*

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## **РОЛЬ ТАМОЖЕННЫХ ОРГАНОВ В ОБЕСПЕЧЕНИИ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ РФ.**

*Volkova Olga Evgenievna*

*AOCHU VO "Moscow Financial and Legal University MFYUA "(UV" Kaliningrad ")*

*Russia, Kaliningrad region, Kaliningrad*

## **THE ROLE OF CUSTOMS AUTHORITIES IN ENSURING THE ECONOMIC SECURITY OF THE RUSSIAN FEDERATION.**

### **Аннотация.**

*В статье описывается важная роль таможенных органов в обеспечении экономической безопасности, которые призваны защищать экономические интересы РФ при осуществлении внешнеэкономической деятельности. Роль таможенных органов в обеспечении экономической безопасности РФ, рассмотрены вопросы экономической безопасности на уровне таможенных органов в современном технологическом, компьютеризованной системе обработки всех данных.*

### **Annotation.**

*The article describes the important role of customs authorities in ensuring economic security, which are designed to protect the economic interests of the Russian Federation in the implementation of foreign economic activity. The role of customs authorities in ensuring the economic security of the Russian Federation, the issues of economic security at the level of customs authorities in a modern technological, computerized system for processing all data are considered.*

**Ключевые слова:** *таможенные органы, экономическая безопасность, таможенная политика, регулирование.*

**Keywords:** *customs authorities, economic security, customs policy, regulation.*

Экономическая безопасность является неотъемлемой частью и значимой частью национальной безопасности. При этом воздействие всех внешних и многих внутренних угроз экономической безопасности РФ проявляется прежде всего на государственной границе. Соответственно, весь комплекс мер по защите экономических интересов страны должен осуществляться в первую очередь в пограничном пространстве России и таможенных территориях. Сегодня в компетенцию таможенных органов России входит выполнение важнейших задач по обеспечению экономической безопасности государства и прежде всего в сфере внешнеэкономической деятельности.

В связи с этим в цели таможенной политики РФ входит обеспечить наиболее эффективное использование инструментов таможенного контроля и регулирования товарообмена на таможенной территории РФ, участие в реализации торгово-политических задач по защите российского рынка, стимулирование развития национальной экономики.

Таможенные органы сегодня осуществляют фискальные и регулятивные функции, первые из которых направлены на пополнение доходной части федерального бюджета за счет взимания таможенных платежей, а вторые призваны стимулировать развитие национальной экономики, защищать отечественный рынок, обеспечивать привлечение иностранных инвестиций и т.д. Кроме того, таможенные органы, как правоохранительный орган,

призваны выполнять важный спектр функций, которых должны оказывать благоприятное влияние на экономику России.

В тоже время, если общие вопросы национальной безопасности исследованы многими учеными, в числе ученые Российской таможенной академии, Блинов Н.М., Городецкий А.Е., Дзюбенко И.В., Кокорев М.В., Крашенинников В.М., Новиков В.Е., Съедин С.И., Юн Э.И. и другие, то проблемы обеспечения экономической безопасности таможенными органами в условиях Евразийского экономического союза, членства Всемирной торговой организации и Всемирной таможенной организации изучены далеко не полно.

Таким образом, актуальность настоящей дипломной работы заключается в том, что мировая практика подтверждает значимую роль таможенных органов во внешнеторговой деятельности, являющейся одним из основных рычагов воздействия на экономику любой страны. В тоже время роль таможенных органов в обеспечении экономической безопасности России в условиях членства Евразийского экономического союза, а также Всемирной торговой и Всемирной таможенной организаций исследованы мало.

Объектом исследования является система обеспечения экономической безопасности России.

Предметом исследования является роль деятельности таможенных органов РФ в системе обеспечения экономической безопасности России.

Целью работы является рассмотрение роли таможенных органов в обеспечении экономической безопасности РФ.

Задачи работы:

- рассмотреть сущность и содержание экономической безопасности государства;
- проанализировать направления развития системы управления таможенными органами РФ;
- рассмотреть роль таможенных органов во внешнеэкономической деятельности государства;
- выявить роль таможенных органов в обеспечении экономической безопасности.

Методологию работы составили метод классификации, сравнения и анализа теоретических источников и нормативно-правовых актов.

Экономическая безопасность государства является одним из основных направлений деятельности государственных органов. Обеспечение экономической безопасности реализуется при помощи реализации правовых, социально-экономических, информационных, организационных, силовых и прочих мер воздействия. Данные меры направлены в первую очередь на защиту государственных и национальных интересов, их основной задачей является противодействие рискам и угрозам безопасности государства. Таким образом государство обеспечивает свою национальную безопасность.

Приоритетными направлениями деятельности таможенной службы России, как это определено в разработанной и ныне действующей программе, были и остаются: осуществление фискальной и правоохранительной функций, совершенствование технологий таможенного оформления и таможенного контроля, обеспечение экономической безопасности государства и защита его экономических интересов.

«В укреплении экономической безопасности Российской Федерации принимают участие все органы государственной власти, это одна из их конституционных функций. В компетенцию таможенных органов входят такие вопросы экономической безопасности России, как борьба с контрабандой, незаконными валютными операциями, нарушениями таможенных правил, наполнение федерального бюджета и осуществление мер государственного регулирования по защите экономических интересов государства и российских участников внешнеэкономической деятельности»<sup>1</sup>.

Главная функция таможенных органов по обеспечению экономической безопасности государства, состоит в таком воздействии на всех участников общественных отношений, которое побуждает их соблюдать установленные таможенно-правовые нормы.

Экономическая безопасность государства, его экономические интересы и их защита имеют различные аспекты: существуют, например, внутри- и внешнеэкономические интересы. При этом внутриэкономические интересы могут быть связаны с развитием промышленного и агропромышленного комплекса, транспорта и связи и т.п. Средства и методы, которыми таможенные органы обеспечивают экономическую безопасность и защиту экономических интересов государства, можно разделить на две группы:

Путем разумных протекционистских мер, таможенная служба оберегает национальную промышленность. В ее обеспечении зоной ответственности таможенной службы является сфера внешнеэкономической деятельности государства.

«Федеральная таможенная служба, сосредоточила свои усилия на решении таких задач, как:

- создание таможенной инфраструктуры, способной обеспечить выполнение главной задачи, поставленной перед таможенной службой;
- обеспечение экономической основы суверенитета и государственной безопасности страны, защита интересов народа Российской Федерации;
- пополнение федерального бюджета путем взимания пошлин, сборов и некоторых видов налогов;
- участие в осуществлении таможенно-банковского валютного контроля, в первую очередь за своевременной полной репатриации платежей, причитающихся российским экспортерам за экспортированные ими товары;
- формирование, ведение и представление (официальной публикации) таможенной статистики внешней торговли России;
- создание правовой законодательной базы, обеспечивающей деятельность таможенной службы»<sup>2</sup>.

Возросла роль ФТС России как ведомства, активно участвующего в разработке таможенной политики государства. Внедрение новых технологий взимания таможенных платежей, обеспечение своевременного и правильного их начисления, организация контроля, за их поступлением в полном объеме в федеральный бюджет, позволили добиться весомых экономических результатов.

Средства правового регулирования и методы правоохранительной деятельности. В данном случае таможенные органы используют правовое принуждение, санкции, меры защиты, в соответствии с действующим законодательством, пользуясь властными полномочиями, позволяющими пресекать попытки нарушения законности. Эта группа составляет основу правоохранительной деятельности таможенных органов.

<sup>1</sup> Безуглова М.А. Экономическая безопасность в системе национальной безопасности России // Тенденции и перспективы инновационного развития правовых, социально-экономических и управленческих исследований: материалы международной научно-практической конференции СЗФ МГЭИ. -М.: МГЭИ, 2017. С. 19.

<sup>2</sup> Васильев И.Р. Правоохранительная деятельность таможенных органов в условиях либерализации таможенного законодательства // Актуальные проблемы теории и истории государства и права: сборник научных работ профессорско-преподавательского состава, членов студенческого научного общества при кафедре теории и истории государства и права. М.: Изд-во Российской таможен. акад., 2018, Вып. 3. С. 116.

Средства и методы экономического регулирования внешнеторговых отношений. К ним относятся: тарифное регулирование (таможенные платежи, сборы, налоги, методы определения таможенной стоимости, валютный контроль, методы определения страны происхождения товаров и др.) и нетарифное регулирование (эмбарго, запрещение ввоза или вывоза товаров, установление ограничений на ввоз и вывоз товаров: лицензии, квоты, сертификация и другие ограничения).

Под национальной безопасностью понимается состояние защищенности личности, общества, а также государства от различных внутренних и внешних угроз. В свою очередь для обеспечения национальной безопасности необходимо осуществлять меры по защите и развитию экономики страны, поскольку экономическая безопасность, как и продовольственная, общественная, энергетическая, информационная безопасность является ее неотъемлемой частью. Экономическая безопасность предполагает под собой определенное состояние, как экономики, так и различных институтов, при котором обеспечивается защита национальных интересов, необходимый военный потенциал, а также достаточное экономическое развитие. Существует и множество других точек зрения на понятие экономической безопасности. Например, Е. Бухвальд, Н. Головацкая и С. Лазуренко определяют экономическую безопасность, как качественную характеристику экономической системы, которая в свою очередь определяет способность поддерживать необходимые условия жизнедеятельности населения и достаточную обеспеченность ресурсами, в том числе и для развития хозяйственной деятельности.

Несмотря на плюрализм мнений в этом аспекте, следует добавить, что она подвержена влиянию различных видов угроз. Так, к таким угрозам можно не только экономические преступления, но и преступления, которые не нашли отражения в официальной статистике из-за высокого уровня коррупции. Для нейтрализации подобного рода угроз необходимо реализовывать эффективные предупредительные процедуры, к которым можно отнести:

- анализ, выявление и нейтрализация рисков и угроз;
- выявление противоправного умысла;
- реализация комплексных процедур по недопущению совершения преступления и противоправных деяний;
- устранение причин и нейтрализация условий, мотивирующих на совершение противоправного деяния;
- разработку системы или комплекса рекомендаций по совершенствованию существующих, а также создание новых мер и средств защиты.

Механизм по обеспечению экономической безопасности можно представить в виде системы

мероприятий, направленных на устойчивый развитие экономической сферы, защиту национальных интересов в экономике и смежных сферах, эффективное и благоприятное функционирование общества, а также на обоснованную эксплуатацию имеющихся ресурсов и многих других интересов государственных и национальных интересов. Таким образом, можно определить обеспечение экономической безопасности страны как гарантию ее независимости и стабильности развития, а также эффективного функционирования различных сфер деятельности.

«Важную роль при этом играют таможенные органы, которые являются регулятором торговых, а, следовательно, экономических отношений. Таможенные органы функционируют в двух сферах: экономической и правоохранительной. Они совместно с правоохранительными органами обеспечивают экономическую безопасность страны, защиты ее окружающей среды, а также здоровья и жизни граждан»<sup>3</sup>. К важным задачам таможенной службы также можно отнести пополнение доходов бюджета страны, защита интересов отечественных производителей, которая реализуется при помощи введения и установления квот, различных ограничений и тарифов. Так, в соответствии с законодательством Российской Федерации, деятельность органов Федеральной таможенной службы направлена на достижение следующих целей:

- обеспечение экономической безопасности в процессе внешней торговли;
- модернизация государственного управления в сфере таможенного регулирования;
- обеспечение соблюдения прав и законных интересов лиц, осуществляющих деятельность в сфере таможенного регулирования;
- формирование условий, создающих наиболее благоприятные условия для внешней экономической деятельности;
- создание таможенной инфраструктуры.

Органы Федеральной таможенной службы осуществляют таможенный контроль, взимают таможенные пошлины, ведут статистику в области таможенной деятельности, а также способствуют развитию внешней торговли РФ и способствуют ускорению товарооборота. Однако это не единственные их функции. Как уже упоминалось таможенные органы осуществляют свою деятельность в экономической и правоохранительной сферах. Так вот к правоохранительным функциям таможенных органов относится: борьба с контрабандой, административными правонарушениями в сфере таможенного дела, пресечение незаконного оборота через таможенную границу наркотических средств и оружия.

В свою очередь противодействие контрабанде наркотиков остается одним из приоритетных направлений деятельности таможенных органов. С января по октябрь 2019 года из незаконного оборота изъято свыше 10 тонн наркотических средств,

<sup>3</sup> Типиха К.Е. Таможенные органы РФ в обеспечении экономической безопасности // Вестник Академии. 2018 № 2. С. 31.

психотропных веществ, прекурсоров и сильнодействующих веществ.

Это позволяет говорить, не только об объемах рынка наркотических веществ, но и об улучшении работы сотрудников таможенных органов. Анализируя роль таможенных органов в обеспечении экономической безопасности России, необходимо обозначить также ее роль в наполнении Федерального бюджета. Даже несмотря на введенные в отношении страны санкции и уменьшение официального товарооборота объем денежных средств от таможенных платежей на 2019 год вырос примерно на 20% по сравнению с 2017 годом.

«Необходимо отметить изменение общей доли таможенных платежей, за два года показатель упал почти на 2%, однако это вызвано ростом объема бюджета. Приведенные данные наглядно отражают важность таможенной службы в обеспечении экономической безопасности страны. Однако в сфере таможенного регулирования существуют множество проблем и недостатков, которые необходимо оперативно и эффективно решать. В противном случае экономическая и национальная безопасность не будут обеспечены должным образом. К негативным аспектам в первую очередь необходимо отнести недостатки правовой системы, коррупцию и недостаточное оснащение таможенных органов необходимыми ресурсами»<sup>4</sup>.

На 2019 год по данным Федеральной таможенной служб Российской Федерации были выявлены факты неуплаты таможенных пошлин в размере 6 млрд. рублей, перемещение через таможенную границу стратегически важных товаров и ресурсов на общую сумму в 9 млрд. рублей. Таким образом можно сделать вывод, что таможенные органы занимают важное место в системе обеспечения национальной и экономической безопасности страны.

Как у любой системы в процессе функционирования у нее появляются недостатки и слабости, однако для дальнейшего обеспечения безопасности необходимо предупреждать случаи появления риск факторов и угроз. Для этого предлагается увеличить уровень цифровизации таможенных органов, повысить уровень контроля в области антикоррупционной политики, разработать мероприятия по предупреждению противоправных действий, а также выявить недостатки законодательной системы и разработать предложения по их устранению.

**Заключение.** Неотъемлемой частью экономической системы страны является экономическая безопасность. В тоже время она является и наиболее важной частью структуры национальной безопасности страны. На основе анализа различных точек зрения ученых можно сделать вывод, что экономическая безопасность определяется такое состояние экономики, при котором обеспечивается: достаточно высокий и устойчивый экономический рост; эффективное удовлетворение экономических потребностей; контроль государства за движением

и использованием национальных ресурсов; защита экономических интересов страны на национальном и международном уровнях от внешних и внутренних угроз.

Угрозы экономической безопасности могут быть классифицированы с позиций: масштаба; места нахождения угроз (внутренние и внешние); вероятности и времени реализации; характера возникновения (субъективные и объективные); вида (прямые или косвенные); формы воздействия, а механизм обеспечения экономической безопасности представляет собой систему организационно-экономических и правовых мер по предотвращению экономических угроз.

Таможенные органы являются одним из государственных институтов, приоритетной задачей которых является обеспечение экономической безопасности государства как важнейшей составляющей национальной безопасности. Они выступают в роли одного из основных механизмов регулирования внешнеэкономической деятельности, сочетая функции фискального, правоприменительного и контролирующего органа. Таможенные органы реализуют свою деятельность в соответствии с законодательно закрепленными экономическими, регулятивными и правоохранительными целями таможенной деятельности. Их деятельность в данной сфере осуществляется на основе международных, федеральных и ведомственных нормативных правовых актов, наиболее значимые из которых: ТК ТС; Федеральные законы: «О таможенном тарифе»; «О таможенном регулировании в Российской Федерации»; «О валютном регулировании и валютном контроле»; Кодекс РФ об административных правонарушениях.

В настоящее время происходят гармонизация и унификация российского законодательства в данной сфере в связи с необходимостью интеграцией РФ в международное экономическое пространство в рамках ее членства Всемирной торговой организации, члена ЕАЭС, а также члена Всемирной таможенной организации. Кроме того, происходит совершенствование нормативного правового регулирования в целях совершенствования понятийного аппарата в сфере таможенного дела и создания условий для развития экономики России.

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*Кагазежева Марзета Муратовна*  
магистрант учетно-финансового факультета  
Кубанский государственный аграрный университет имени И.Т. Трубилина,  
Краснодар  
[DOI: 10.24412/2520-6990-2021-17104-45-47](https://doi.org/10.24412/2520-6990-2021-17104-45-47)

#### АКТУАЛЬНЫЕ ПРОБЛЕМЫ КОНТРОЛЯ ДЕНЕЖНЫХ ПОТОКОВ

*Kagazezheva Marzeta Muratovna*  
master's student of Accounting and Finance Faculty  
Kuban State Agrarian University named after I. T. Trubilin,  
Krasnodar

#### CURRENT PROBLEMS OF CASH FLOW CONTROL

##### **Аннотация.**

*В статье обоснована важность осуществления контроля денежных потоков предприятия, изучены актуальные проблемы его осуществления и предложены направления решения выявленных трудностей движения денежных средств.*

##### **Abstract.**

*The article substantiates the importance of controlling the cash flows of the enterprise, studies the actual problems of its implementation and suggests ways of solving the identified difficulties of cash flow.*

**Ключевые слова:** денежный поток, внутренний контроль.

**Keywords:** cash flow, internal control.

Последствия пандемии наложили свой отпечаток на деятельность многих организаций. В условиях неопределенности и необходимости принятия быстрых решений, результативность систем внутреннего контроля подверглась серьезным испытаниям, что неминуемо повысило риск ошибок и мошеннических действий. Последствия любого кризиса оказывают разрушительное воздействие не только на экономическую, но во многих случаях и на политическую ситуацию в стране – банки и компании разоряются, инфляция и безработица растут [6].

Эффективный контроль денежных потоков в условиях кризиса – залог сохранения бизнеса. Выбор наиболее действенных механизмов и инструментов предупреждения рисков напрямую влияет

на эффективность финансово-хозяйственной деятельности экономического субъекта и возможность дальнейшего устойчивого развития в быстроразвивающихся условиях неопределенности [3].

Денежный поток относится к общей сумме денег, поступающих в организацию и выходящих из нее. Он включает в себя все доходы и все расходы предприятия на определенный момент времени. Управление предполагает соответствующее планирование и контроль притоков и оттоков средств организации, способствующих сохранению баланса между оперативным и стратегическим контролем денежных потоков.

Контроль денежных потоков важно осуществлять, поскольку без ликвидного капитала предприятия не могут вовремя платить заработную плату и

другие счета. Это также означает отсрочку любых покупок оборудования или новых приобретений. В некоторых случаях нехватка ликвидных денежных средств может привести компанию к дорогостоящим вариантам финансирования, которые оставляют ее в долгах, увеличивая расходы в виде обслуживания долга.

Отсутствие контроля денежного потока может привести к банкротству организации. При этом дефицит денежных средств может быть временным явлением, не оказывающим длительного воздействия на долгосрочную прибыльность или жизнеспособность компании. В любом случае необходимость контроля денежных потоков не оспаривается, так как в случае недостатка денежных средств для покрытия кредиторской задолженности предприятие, как правило, сталкивается с большими трудностями.

Есть много разных причин, по которым предприятия испытывают проблемы с денежным потоком, в частности: сезонные колебания продаж, несвоевременная отправка счетов и сбор платежей клиентов, чрезмерная зависимость от небольшого числа клиентов, слишком много запасов, низкая рентабельность, слишком быстрый рост и давление на краткосрочное финансирование, возможность финансирования, не отвечающая меняющимся потребностям бизнеса, плохое финансовое планирование, недисциплинированный подход к тратам, высокие накладные расходы, такие как аренда и коммунальные услуги, слабые процедуры кредитного контроля и проверки кредитоспособности. Разработка оптимальной кредитной политики способствует максимизации денежных потоков что, в свою очередь, повышает стоимость бизнеса [4].

Проблемы с денежными потоками в бизнесе могут вызвать серьезные перебои в работе. Эти проблемы часто можно избежать, поскольку они отражают лишь временное сокращение доступной суммы денег и не отражают фактических доходов в течение года [1, с. 125].

Рассмотрим основные способы решения проблем с денежным потоком, выявленных в результате контрольных мероприятий:

1. Поиск доступа к гибкой кредитной линии.
2. Регулярный контроль финансов.
3. Создание прогнозов движения денежных средств.
4. Создание более выгодных условий сотрудничества с поставщиками.
5. Регулярный контроль кредитоспособности потенциальных клиентов.
6. Быстрота и точность выставления счетов.
7. Маркетинг и развитие бизнеса играют важную роль в поддержании регулярного и здорового денежного потока.
8. Создание организованной системы бухгалтерского учета.
9. Высвобождение активов.
10. Обращение к специалистам по восстановлению денежного потока бизнеса.

Проблемы денежного потока отражаются в Отчете о движении денежных средств, а также документах, обобщающих денежные средства и их эквивалентов, движущихся через компанию [5, с. 304].

В большей части предприятий, имеющих проблемы с денежным потоком, руководство не знает о их существовании.

Другими способами выявления проблем с денежным потоком могут быть случаи, когда счета-фактуры начинают накапливаться, продажи заметно замедляются, или, когда расходы превышают норму. Любой из них может снизить денежный поток предприятия и, без резервного фонда или доступного финансирования, подтолкнуть компанию к банкротству [2, с. 20].

Многие очень прибыльные компании при отсутствии контроля денежного потока обанкротились, особенно в тех случаях, когда у предприятия небольшое количество контрактов.

Таким образом, важность контроля денежных потоков должна быть учтена руководством любого предприятия. Для четного контроля движения средств нужно регулярно проверять приток денег от деятельности и изучать график продаж. Также можно проанализировать статьи расходов, выделить из них самые затратные и контролировать их более внимательно. Готовить детальный отчет по показателям бессмысленно, так как они быстро меняются и могут сбить с толку.

Кроме того, регулярно обновлять данные по статьям энергозатратно, а для понимания картины достаточно иметь общее представление о ситуации. Стоит отметить, что контроль денежного потока должен быть регулярным, через определенные промежутки времени. Это динамичный показатель, который часто и быстро меняется, поэтому еще недавно успешное предприятие может стать убыточным. От своевременного решения проблем контроля денежных потоков зависит эффективность и срок жизни организации.

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*Кагазежева Марзят Муратовна*  
магистрант, Кубанский государственный аграрный университет  
имени И.Т. Трубилина

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## ФОРМИРОВАНИЕ УЧЕТНО-АНАЛИТИЧЕСКОЙ ИНФОРМАЦИИ ДЛЯ СТРАТЕГИЧЕСКОГО УПРАВЛЕНИЯ ДЕНЕЖНЫМИ ПОТОКАМИ

*Kagazezheva Marzyat Muratovna*  
Graduate Student, Cuban State  
I.T. Trubilin Agricultural University

### FORMATION OF ACCOUNTING AND ANALYTICAL INFORMATION FOR STRATEGIC CASH FLOW MANAGEMENT

#### **Аннотация.**

Стратегическое управление денежными потоками позволяет хозяйствующему субъекту получать прибыль, генерируемую денежными ресурсами, с целью накопления организацией инвестиционных средств при осуществлении финансовых вложений. Поддержание высокой степени синхронизации денежных поступлений и расходов в количественном и временном отношении позволяет снизить фактическую потребность хозяйствующих субъектов в текущих и застрахованных остатках денежных средств, обслуживающих бизнес-процесс, а также восполнять резерв инвестиционных ресурсов, формируемых в процессе инвестирования их деятельности. В статье исследованы особенности формирования учетно-аналитической информации управления денежными потоками коммерческой организации. Дано общее понятие об управлении денежными потоками. Изучены и проанализированы основные источники информации, используемой в целях стратегического управления денежными потоками. Представлено формирование учетно-аналитической информации управления денежными потоками в рамках бухгалтерского и управленческого учета.

#### **Abstract.**

Strategic cash flow management allows an economic entity to make a profit generated by monetary resources in order for the organization to accumulate investment funds when making financial investments. Maintaining a high degree of synchronization of cash receipts and expenditures in quantitative and temporal terms allows reducing the actual need of economic entities for current and insured cash balances that serve the business process, as well as replenishing the reserve of investment resources formed in the process of investing their activities. The article examines the features of the formation of accounting and analytical information for the management of cash flows of a commercial organization. The general concept of cash flow management is given. The main sources of information used for strategic cash flow management are studied and analyzed. The formation of accounting and analytical information for cash flow management in the framework of accounting and management accounting is presented.

**Ключевые слова:** денежные потоки, учетно-аналитическая информация, стратегическое управление, управление денежными потоками, управленческий учет, финансовая отчетность

**Keywords:** cash flows, accounting and analytical information, strategic management, cash flow management, management accounting, financial reporting

Актуальность темы исследования заключается в том, что эффективное управление финансово-хозяйственной деятельностью предприятия основывается на эффективно организованно-информационном обеспечении. Мировая практика показывает, что предприятие может приносить большой доход, показывать положительную балансовую прибыль, но в тоже время не иметь достаточных денежных средств для осуществления своей оперативной деятельности. Эффективность управления учетно-аналитической информацией в вопросах управления денежными потоками становятся все более актуальными и значимыми в управлении предприятием. Особенно актуальны методы, которые могут обеспечить эффективную оперативную информацию, выявить новые возможности извлечения пользы от информации в ходе стратегического управления денежными потоками.

Стратегическое управление денежными потоками является одной из важных и достаточно сложных задач управления финансово-хозяйственной деятельностью конкретного хозяйствующего субъекта. В условиях пандемии и экономического кризиса могут выжить только предприятия, обладающие эффективным планированием, учетом, анализом и контролем не только финансовых ресурсов, но и денежных потоков. Поэтому руководство организации должно обладать полной и достоверной информацией о достаточности денежных ресурсов в организации, иметь возможность их перераспределения с целью выбора оптимального варианта их использования.

Степень изученности проблемы исследования. Среди известных ученых-экономистов, которые затрагивали тему денежных потоков, встречаются такие имена, как: Дж.К. Ван Хорн, Л.А. Бернст, К.

Хитчинг, Д. Стоун, Т.В. Теплова, А.Д. Шеремет, В.П. Привалов и другие авторы. Стоит отметить, что на сегодняшний день недостаточно проработанными остаются вопросы формирования учетно-аналитической информации стратегического управления денежными потоками хозяйствующих субъектов. В результате вышесказанного предопределен выбор темы статьи, постановка цели и задачи исследования.

Целью написания статьи является рассмотрение и обобщение вопросов системы учетно-аналитической информации управления денежными потоками в коммерческой организации.

Цель исследования обусловила постановку и решение следующих задач:

- определить сущность и цели управления денежными потоками хозяйствующих субъектов;
- рассмотреть значение формирования учетно-аналитической информации управления денежными потоками в современных рыночных условиях;
- классифицировать информацию о движении денежных потоков коммерческой организации;
- изучить особенности формирования учетно-аналитической информации управления денежными потоками коммерческой организации.

Важным ресурсом для осуществления своей коммерческой деятельности любого хозяйствующего субъекта являются финансовые средства, т.е. достаточное наличие объема денежного потока в организации.

В специализированной литературе существуют различные способы определения денежных потоков. Американские ученые считают, что это различия между притоками и оттоками денежных средств, немецкие ученые оперируют понятием денежного потока как «CashFlow» и определяют его как ежегодные денежные поступления, амортизацию и выплаты в пенсионные фонды, в России под денежным потоком обычно понимают разницу между организацией, получающей и выплачивающей денежные средства, приравнивая ее таким образом к прибыли [1, с. 89].

В самом общем понимании под денежными потоками в организации понимают все денежные ресурсы в определенный момент времени, которые формируются в результате поступлений и различных выплат.

Различают денежные потоки от операционной (основной) деятельности. Эти денежные потоки формируются в результате затрат или платежей за сырье и материалы, аутсорсинговые услуги, заработную плату основных работников и руководителей, налоги и все другие расходы, понесенные организацией в результате ее деятельности. Доходная

часть формируется из выручки от реализации основного продукта или услуги. Кроме того, в доходную часть включаются активные денежные поступления от налоговых органов, полученные в результате перерасчета в соответствии с законодательством.

Второй вид денежного потока зависит от инвестиционной деятельности организации. Этот вид денежного потока отражает затраты, фактически уплаченные организацией в результате ее инвестиционной политики. То есть инвестирование в различные проекты, продажа основных и нематериальных активов и т.п. Стоит отметить, что для некоторых организаций инвестиционная деятельность является основной, например, для кредитных организаций.

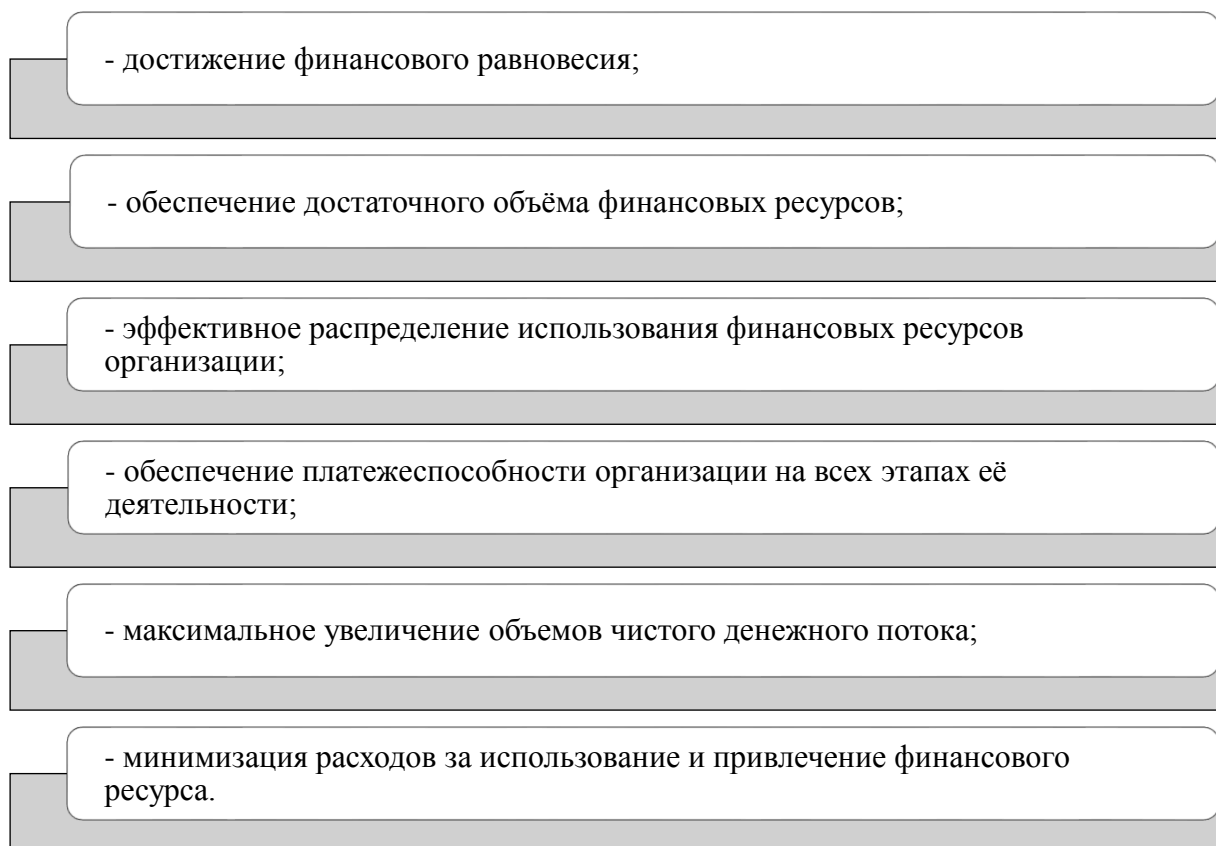
Третий вид денежных потоков представляет собой доходы и платежи, связанные с привлечением дополнительного капитала или собственного капитала, получением долгосрочных кредитов и займов, организацией расчетов с акционерами и т.д. Этот вид денежного потока называется финансовым.

Для осуществления своей оперативной деятельности организация должна располагать достаточными средствами. Существует разница между избыточными денежными потоками и дефицитными денежными потоками. Избыточный приток наблюдается в организациях, где стоимость основных видов деятельности ниже притока. Однако имеющиеся средства используются для других инвестиционных проектов или для выплат акционерам. Таким образом, эффективное управление свободными денежными средствами в организации не только обеспечивает финансовую устойчивость, но и повышает ее рыночную стоимость.

Однако в современных рыночных условиях многие коммерческие учреждения работают в условиях дефицита денежных потоков. То есть в условиях недостаточности средств для осуществления хозяйственной деятельности. В таких случаях организации вынуждены привлекать сторонние инвестиции с расчетом на то, что они будут возвращены кредиторам в ближайший период.

Основными задачами стратегического управления денежными потоками в организации являются следующие (рисунок 1):

Учетно-аналитическое обеспечение управления денежными потоками представляет собой сложный многофункциональный комплекс, включающий в себя процесс постоянного сбора параметров, необходимых для анализа, планирования и подготовки правильных и эффективных управленческих решений в системе управления и перераспределения денежных потоков хозяйствующего субъекта.



*Рисунок 1. - Основные задачи стратегического управления денежными потоками [3, с. 152]*

Данные управленческого учета являются важной составляющей управления денежными потоками и ее учетно-аналитического обеспечения. Систему учетно-аналитического обеспечения управления денежными потоками можно определить, как совокупность подсистем, включающих средства, методы и приемы целенаправленного и непрерывного формирования информации о движении денежных ресурсов предприятия [2, с. 105].

Субъектами управления денежными потоками в системе учетно-аналитического обеспечения являются руководитель хозяйствующего субъекта, бухгалтерия, финансовые службы и другие подразделения, связанные с денежными потоками.

Как правило, учетно-аналитическая структура управления денежными потоками в организации должна включать всю необходимую информацию о движении денежных средств, которую можно классифицировать следующим образом (рисунок 2).



*Рисунок 2. Классификация информации, используемой в целях стратегического управления денежными потоками организации*

Информационные требования, вытекающие из системы стратегического учета и аналитического обеспечения управления денежными потоками:

- актуальность и предсказуемость;
- своевременность и обратная связь;
- достоверность.

Бухгалтерская информация, формируемая по данным бухгалтерского учета, является основой стратегического управления денежными потоками организации. Информационной базой стратегического управления в российских организациях является бухгалтерский баланс и отчет о движении денежных средств. Но бухгалтерский баланс не дает

ответы, сможет ли предприятие зарабатывать денежные средства в течение продолжительного времени и каковы источники их поступления. Поэтому эффективным и достоверным средством отражения денежных средств организации является отчет о движении денежных средств.

Отчет о движении денежных средств организации отражает актуальную информацию о поступлениях и расходах денежных средств в разрезе вида хозяйственной деятельности таким образом, что позволяют установить взаимосвязь между остатками денежных средств на начало и конец отчетного периода.

Отчет о движении денежных средств важен как один из компонентов российской бухгалтерской отчетности. Этот отчет необходим руководству организации, а также внешним пользователям отчета. Благодаря этому отчету пользователи могут видеть реальное положение организации, то есть реальное положение доходов и направление расходов и узнать следующие сведения:

- сведения о размере и источнике полученных денежных средств и направлении их использования;

- способность организации выполнять свои обязательства и покрывать их за счет выплаты сверх дохода;

- способность организации удовлетворять свои инвестиционные потребности.

Информация, формируемая системой бухгалтерского учета, отражает состояние предприятия и движение денежных средств за отчетный период, что необходимо для осуществления текущего управления. Она представлена в широком виде на счетах бухгалтерского учета и может быть подробно описана с использованием аналитических данных. Однако в агрегированном виде эта информация не является полной, оперативной и достаточной для принятия стратегических решений, поэтому другие виды информации должны быть дополнены данными управленческого учета.

Данные управленческого учета в области управления денежными потоками позволяют формировать учетно-аналитическую информацию о движении денежных средств подразделений хозяйствующего субъекта, центров ответственности, различных видах деятельности и конкретных операциях, приводящих к денежному потоку, который обычно используется для оперативного управления.

В управленческом учете организации формирование учетно-аналитической информации управления денежными потоками можно осуществлять с помощью создания центров ответственности:

1) Центр операционных денежных оттоков.

2) Центр финансовой ответственности отвечает за организацию группы операционных оттоков денежных средств в текущем/инновационном направлении деятельности.

3) Центром финансовых операций является ЦФО, управляющий которым отвечает за организа-

цию притока и оттока средств для финансовой деятельности фондов в текущем/инновационном направлении.

4) Центр контроля и управления денежными потоками - это ЦФО, менеджер которого в случае сложных структур ЦФО отвечает за приток и отток средств (операционные оттоки, притоки, потоки, инвестиционные денежные потоки, финансовые операции) подчиненного центра ответственности.

5) Кроме того, в структуре организации должен быть создан центр мониторинга и управления денежными потоками по инновационным проектам, руководители которого отвечают за денежные потоки по конкретным инновационным проектам.

Распределение данных по ЦФО будет способствовать формированию эффективной учетно-аналитической информации по управлению денежными потоками, повышению качества управленческих решений, обеспечению сбалансированности денежных потоков инновационных проектов, вида работ и финансовой жизнеспособности проектов организации.

В итоге, объединение структурных и производственных центров может помочь организации создать полную и точную учетно-аналитическую информацию о движении денежных потоков, необходимую для поддержания ликвидности, и улучшить активность по управлению деятельностью организации.

Таким образом, в конечном итоге успех любого хозяйствующего субъекта зависит от качества учетно-аналитической информации управления денежными потоками. Поэтому для формирования надежной и оперативной информации о денежных потоках руководитель должен быть обеспечен надежной и оперативной учетно-аналитической информацией.

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## COMPREHENSIVE APPROACH TO THE ORGANIZATION AND METHODS OF AUDITING THE CASH OF THE ENTERPRISE

### **Abstract.**

*The article analyzes the literature, which gave reason to believe that there are many different definitions of "money", which differ significantly from each other. The study found that cash - the concept of accounting, which reflects the most liquid assets of the enterprise and includes cash on hand, funds in bank accounts, electronic money issued in an openly circulating system, demand deposits and cash in transit. The purpose of the audit of cash of the enterprise is revealed, the main tasks of the audit facing the auditor are determined and the information sources of the audit are presented. Methodical bases of carrying out audit of money resources of the enterprise are considered.*

**Keywords:** *money, cash, cash settlements, audit, audit methodology.*

Money is a multifunctional economic form, with the help of which the accounting of value, exchange, payments, accumulation of value is carried out. A well-functioning monetary system contributes to both full capacity utilization and full employment, and a poorly functioning monetary system can be a major cause of sharp changes in prices.

In modern conditions, the vast majority of enterprises do not have enough cash assets, and therefore the ability of the enterprise to survive directly depends on the ability to manage cash flows. Restoration and preservation of the dynamics of the cycles of operational, investment and financial activities, which is practically a guarantee of the necessary liquid position of the enterprise and the realization of its current demand. Thus, with the help of cash, the company in the process of its activities can purchase raw materials, fixed assets, thereby increasing the volume of production, production (production). In order for an enterprise to be able to use cash efficiently, it is necessary to carry out checks on their spending, which is relevant in this article

Let's focus in more detail on understanding the meaning of "money" and highlight some views of scientists.

Thus, the funds used for calculations, performing the function of a measure of value, means of circulation, means of payment, carry out a continuous cycle (money - goods - production - goods - money), return to their original form in the form of revenue after sales, that is, in the form of cash. Yes, money is constantly in circulation and is continuously at all stages of any enterprise. Money within the established limits can be in the form of cash at the box office, and other amounts are kept in bank accounts. Part of the money can be invested in securities to generate income from them [1].

The analysis of literature sources gives grounds to be convinced that there are many different definitions of money, which differ significantly from each other. Money often means everything that is usually accepted in exchange for goods and services; the product of an agreement between people; goods of a special kind that

perform the role of general equivalent; what is used as money.

Yes, S.V. The Bank notes: "Money can be defined as a medium of exchange generally accepted in a given payment community." V. Varenyk defines money as any product that functions as a means of circulation, a unit of account and a means of preserving value.

The concepts of "money" in economic disciplines (in particular, in accounting) are used less than the concepts of "cash" and "cash flows". However, these two seemingly similar concepts often provoke serious discussions in the scientific world.

As noted by D.O. Dyachenko: "Cash is an asset that is most likely to be misused, so the administration's task is to introduce a system of effective internal control that would ensure their safety, careful accounting and reporting" [1].

By its nature, cash is a resource for ensuring solvency, a link between all economic processes of the enterprise. Despite the fact that cash occupies a small share in the total assets of the enterprise, they play an extremely important role in ensuring its existence and harmonious development - they begin the operating cycle, and it ends with them. It is worth noting that cash is cash at the company's cash desk, demand deposits, funds in bank accounts, which are characterized by absolute liquidity, ie can be used at any time for settlements, or exchanged for legal tender.

The distribution and redistribution of funds is characterized as a payment. The totality of all payments of the enterprise creates its money turnover.

Money turnover is the discovery of the essence of money in motion. It covers the processes of distribution and exchange. The circulation of money accompanies the exchange of goods and services. In the total money supply, there are active money, which at any given time are involved in turnover, and passive (funds in the accounts of economic enterprises), which is only a potential means of payment.

The cash turnover of the enterprise is a set of its cash payments. Money turnover provides the process of production and sale of products, payment of taxes and

other mandatory fees and charges, receipt and repayment of loans, payment of interest on the loan, payment of insurance payments and insurance claims, joint activities of enterprises and more. It should be understood

that the effective organization of monetary settlements involves its construction according to the principles shown in the figure 1:

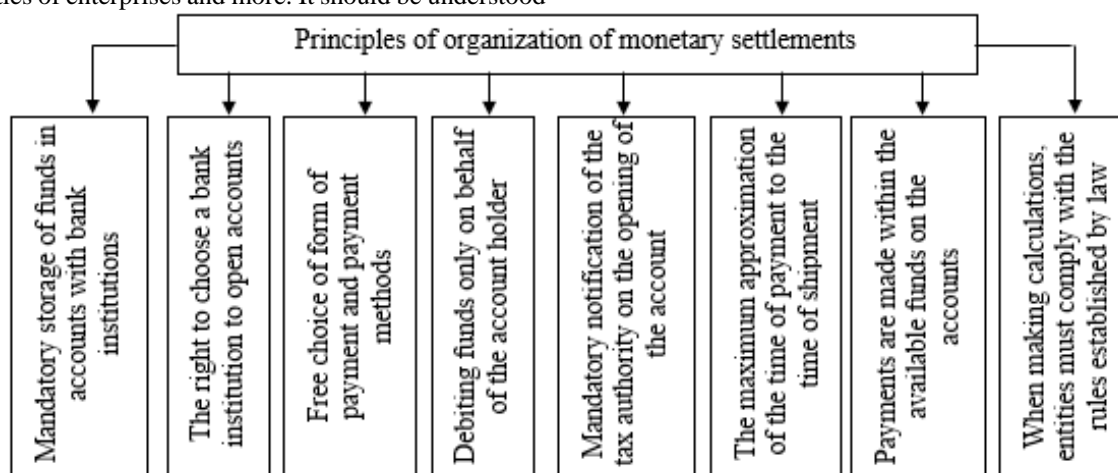


Fig. 1 Principles of organization of monetary settlements [2].

Money turnover at each enterprise is in the following areas:

- providing a common industry;
- ensuring the production process (payment of wages, purchase of components, raw materials);
- sales of manufactured products (work performed, services provided), ie reimbursement of expenses and revenue generation;
- payment of taxes, mandatory deductions and fees;
- obtaining and repaying loans and paying interest on credit institutions.

One of the main factors in the normalization of settlements in the national economy is the introduction of uniform settlement rules, which are determined by the relevant regulations [3].

Cash settlements are cash payments of enterprises, entrepreneurs and individuals to each other for sold products (goods, work performed or services provided), for transactions that are not directly related to the sale of products (goods, works, services) and other property [3].

Cash payments are primarily related and are made through the company's cash register. Therefore, cash transactions are transactions between enterprises and individuals related to the receipt and issuance of cash during settlements through the cash register with the reflection of these transactions in the relevant ledgers [4].

There are certain restrictions on cash payments, namely:

- cash payments between enterprises - up to 10 thousand hryvnias for one day (according to one or more documents), including payments with funds received from corporate cards for production and economic needs, but in addition to funds for business trips;
- enterprises with tax arrears pay salaries only at the expense of funds received from a banking institution;
- funds received from the bank by cashier's check can be used only for the purposes specified therein;

• for all enterprises that have accounts in bank institutions and carry out cash transactions, the bank sets a cash limit, ie the maximum amount of cash that can remain in the cash register of the enterprise at the end of the working day. Cash proceeds received at the cash desk of the enterprise, it must hand over to the bank to credit it to the current account [5].

The organization of cash turnover provides:

- full and timely provision of the needs of the economy in cash;
- ensuring the timely issuance of cash to enterprises for wages, pensions, benefits and other purposes;
- creating conditions for attracting cash to the cash desks of banks;
- implementation and improvement of control over the observance by enterprises of the procedure for conducting cash transactions and cash flows;
- promoting the reduction of the use of cash in payments for goods and services through the introduction of progressive forms of non-cash payments [6].

By its nature, money, says S.M. Ostafiychuk is a resource for ensuring solvency, a link between all economic processes of the enterprise. Despite the fact that cash occupies a small share in the total assets of the enterprise, they play an extremely important role in ensuring its existence and harmonious development - they begin the operating cycle, and they end it. [7]. In his research, the scientist will give the following definition of cash: "cash - is cash in the company's cash, demand deposits, funds in bank accounts, which are characterized by absolute liquidity, ie can be used at any time to make payments, or exchanged on legal tender [7].

Prof. V.V. Sopko notes that the classification of cash is the initial element for the organization of their accounting, as it allows them to structure according to the information needs of users of accounting information [8, p. 214].

An analysis of the literature gives reason to believe that most scholars pay attention only to the classification of cash flows, not cash. At the same time, cash flows are derived from cash, characterize the

movement of the latter in the course of economic activity of the enterprise.

We have to observe that prof. V.V. Sopko gives the following classification of cash [9, p. 215]:

1. By types of currencies: national currency, foreign currency;
2. At the place of storage: advances issued, accountable funds, cash equivalents, bank account, cash desk;
3. By purpose: irreversible, reversible;
4. By sources of income: own, borrowed, borrowed.

In our opinion, it is not possible to include in the classification of cash at the place of storage issued advances, accountable funds, cash equivalents. Because the issued advances and accountable funds are receivables. Cash equivalents are a separate economic category independent of cash - a part of financial investments, which is used not for calculations, but to maintain the solvency of the enterprise, repay its short-term liabilities and, if necessary, can be freely converted into known amounts of cash with insignificant risk of changes in value. We also do not share the position of prof. V.V. Sopko on the division of cash depending on their purpose into current and non-current, as cash is

essentially current assets, ie will be used in business for 12 months from the balance sheet date or during the operating cycle, if it is longer than 12 months. The operating cycle begins with money, and it ends with them. According to National accounting regulation (standard) 1, funds that cannot be used for transactions during one year, starting from the balance sheet date or during the operating cycle due to restrictions, should be excluded from current assets and reflected as non-current [10].

In addition, notes S.M. Ostafiychuk division of funds depending on the sources of income on their own, borrowed and borrowed does not bring any benefit to users of accounting information, because as a result of economic activity of the company money is constantly in circulation, their share in the balance of most companies is insignificant and their balance in the short term can vary greatly. As a result, there is no need, firstly, and secondly, a real possibility, to allocate what part of the money is own, borrowed and attracted in practice.

Therefore, we consider it appropriate to identify the following features of the classification of cash, which would fully meet the real needs of users of accounting information (figure 2).

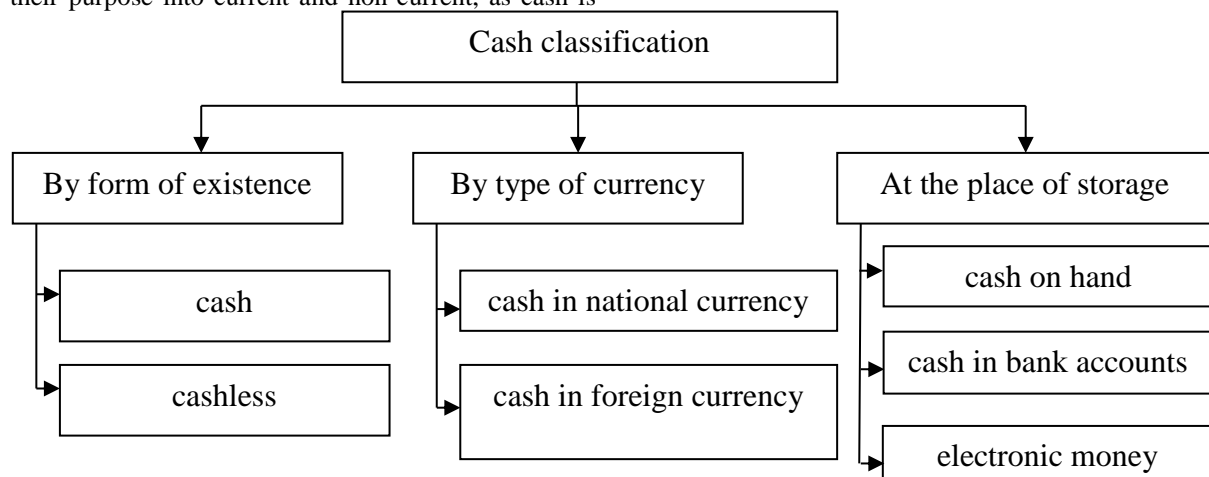


Fig. 2. Cash classification

According to Provisions (standard) of accounting 13 "Financial Instruments", one of the components of financial assets is cash that is not restricted for use. As you know, the use of funds may be limited if they come to the company as targeted funding and targeted revenues (subsidies, revenues from the budget and trust funds, humanitarian aid, contributions of individuals and legal entities), and therefore can be used only for its intended purpose. Therefore, S.M. Ostafiychuk also

proposes to classify cash by restriction in the areas of use, dividing them into:

- a) unlimited in use - cash, which the company can dispose of without any restrictions for business activities;
- b) limited in use - cash that the company can use strictly for a specific purpose.

The general classification of cash that is necessary for the organization of accounting is presented in the table 1:

Table 1

**Cash classification**

Classification feature	Cash composition
1	2
By appointment	Funds for current calculations. Funds with a special purpose, targeted funding
At the place of storage	At the box office. In bank accounts. Cash equivalents. Electronic money (balances on deposit payment cards and funds on accounts of payment systems on the Internet)
Depending on the physical form	Cash (cash on hand). Non-cash (cash in bank accounts and electronic money)
By appointment	Irreversible. Reversible
According to sources of income	Own funds. Borrowed funds
Depending on the degree of business activity	Active. Passive
By types of currencies	Cash in national currency. Cash in foreign currencies

Thus, the above classification is a generalization and systematization of these approaches to the classification of cash. In contrast to the existing ones, it differs: completeness of construction - allows you to cover the main factors that affect cash; clarity of the name of the features - involves the ability to quickly establish its source, which greatly facilitates the management of a particular type of cash; the brevity of the name of the features - necessary to facilitate its practical use; logic - allows you to trace the relationship between groups of different factors; clarity - necessary for accessible mastery of information. All this allows it to be used in practice in the financial and economic spheres of activity.

Thus, cash - the concept of accounting, which reflects the most liquid assets of the enterprise and includes cash on hand, funds in bank accounts, electronic money issued in an openly circulating system, demand deposits and cash in transit

The purpose of the audit of the company's cash is:

1. Obtaining by the auditor sufficient confidence that the funds are used in accordance with the law, regulations and calculations is carried out in accordance with the approved financial plan of business activities;
2. Obtaining sufficient evidence in the process of forming an independent opinion to provide a reasoned opinion on the results of control over the legality, reliability and appropriateness of cash transactions, as well as compliance of their accounting with applicable law [6].

The main tasks of the auditor's audit of the company's cash are:

- establishing compliance with current legislation on cash transactions and non-cash payments;
- verification of compliance with the necessary conditions for receipt, storage and use of funds in the company's cash register and in bank accounts;

- study of the primary documents, which are issued business transactions with cash in terms of compliance with their design, reliability and legality of transactions reflected in them;

- checking compliance with the document flow schedule in terms of business transactions with cash;

- checking the availability and correctness of the Journal of registration of cash orders, checks for receiving funds, payment orders for the transfer of funds;

- establishing the timeliness and completeness of accounting for cash;

- checking compliance with the established limit of cash balance at the cash desk of the enterprise;

- establishment of observance of terms of carrying out inventory and documentation of its results concerning cash in the cash desk of the enterprise and on accounts in banks;

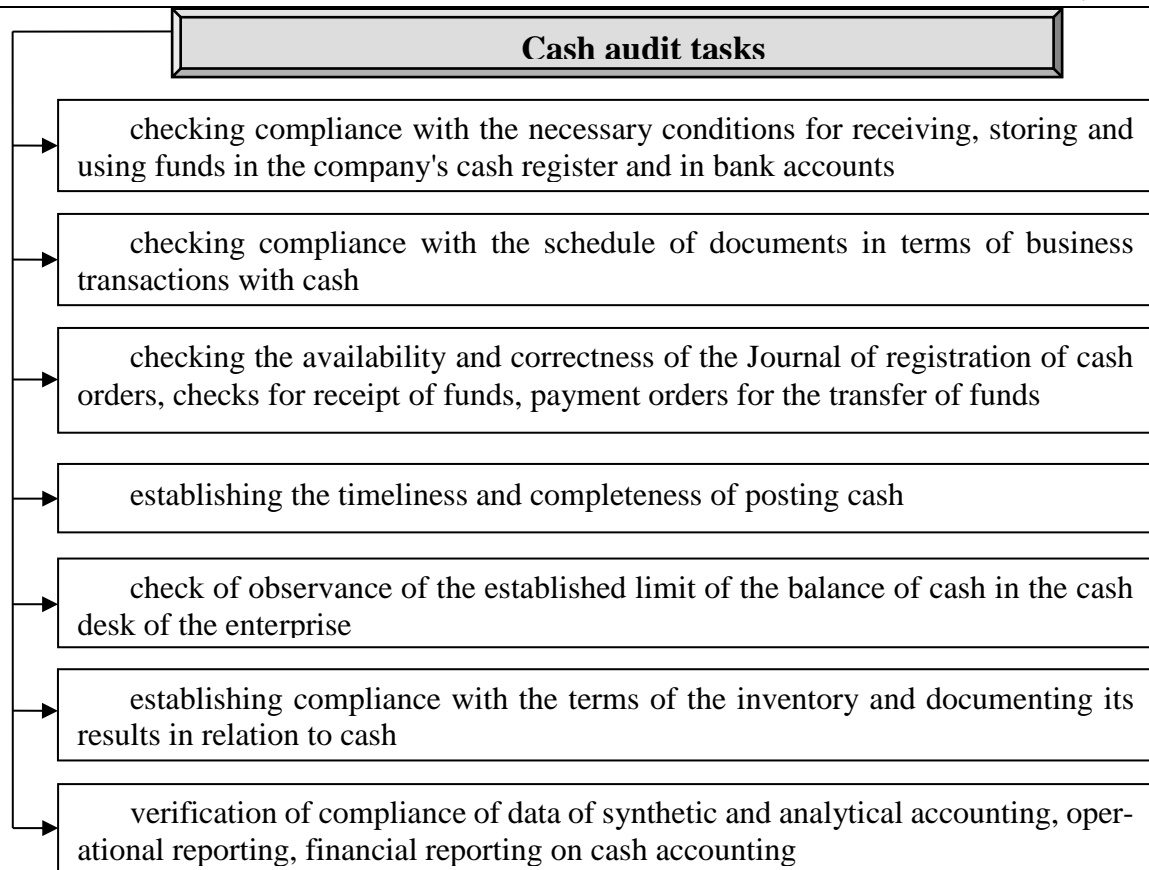
- verification of compliance with the data of synthetic and analytical accounting, operational reporting, financial reporting on cash accounting in the company's cash register and bank accounts (fig. 3).

Objects of cash verification are: cash at the company's cash desk in national and foreign currency; cash on bank accounts in national and foreign currency; cash on the road in national and foreign currency; monetary documents.

Sources of information for the audit of cash are [10]:

- 1) regulatory information (legislation on accounting for cash transactions at the company's cash desk and on accounts in servicing banks; regulations governing the implementation and accounting of cash transactions at the company's cash desk, bank accounts; order on the company's accounting policy).

- 2) information on planning (financial plan of the enterprise for the audited period of activity; calculation of the balance of cash limit at the box office).



*Fig. 3. The task of auditing cash at the enterprise*

3) actual (accounting) information:

- primary accounting documents for the receipt, use and balance of funds in the company's cash register, accountable persons and bank accounts;
- primary documents confirming: acquisition, movement and balance of monetary documents;
- documents of analytical and synthetic accounting of cash, cash documents;
- materials of cash inventories in the cash desk of the enterprise, on bank accounts, monetary documents;
- explanations and reports of materially responsible persons;
- orders, instructions of the administration of the enterprise;
- Financial Statements;
- acts of audits (inspections), audit reports of previous inspections.

Thus, the audit of transactions with cash of the enterprise used the following sources of information: income and expenditure cash orders and supporting doc-

uments attached to them, cash book and cashier's reports, bank statements on current and other bank accounts, check books, roots of used checks and canceled checks, logs, payment information, payment orders [11].

To carry out an audit in the area of "cash" the auditor should assess the company's internal control system using separate procedures and tests.

Based on the results of such an assessment, the auditor will have criteria for selecting the methodology of audit control.

In the process of auditing funds, the auditor uses the following methods: inventory; monitoring the implementation of economic and financial transactions, their reflection in the accounting system; oral examination; obtaining written confirmations; verification of documents (in form, essence, content, logical, chronological, expert, counter); mutual control of operations and documents prepared at the enterprise; checking arithmetic calculations; analysis (fig. 4):

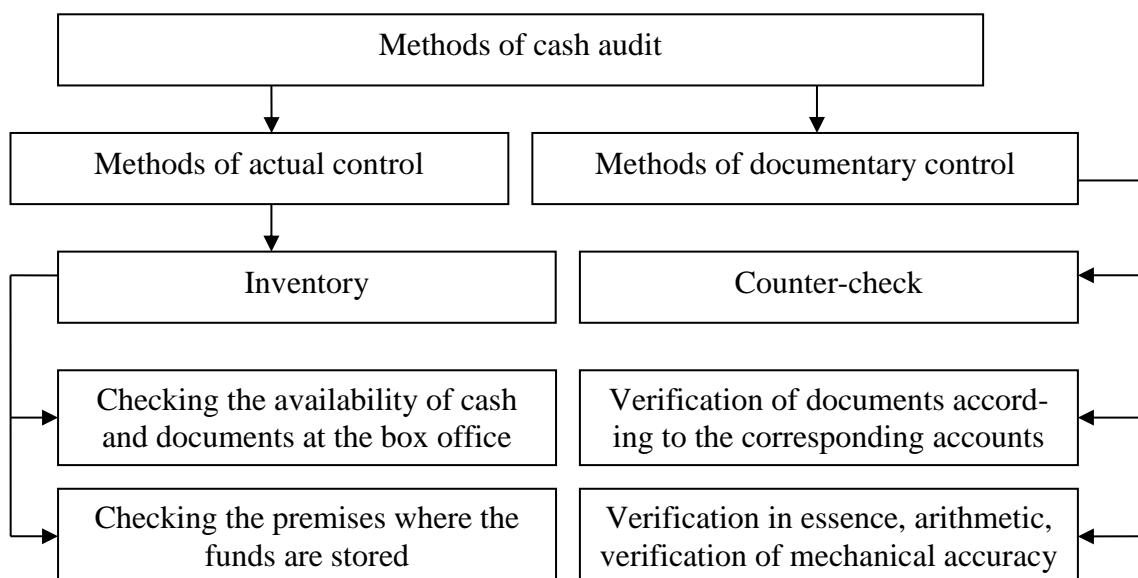


Fig. 4. Methods of audit of cash transactions

Audit of cash by the auditor in the process of cash transactions. The first stage of the auditor's audit of cash in the process of cash transactions involves a sudden audit of the cash register with a full sheet-by-sheet transfer of all money and other monetary documents in the company's cash register (bills, liabilities).

The second stage is to check the correctness of filling in cash documents and the organization of the procedure for conducting cash transactions. The third stage of the inspection is carried out on the purposes for which the company received and issued cash.

In the fourth stage, the auditor checks the completeness of the posting of cash in the company's cash register, which comes from various sources.

In the fifth stage, the auditor checks the company's compliance with the established limit of cash balance in the company's cash register.

At the sixth stage, the auditor compares the data of primary, analytical and synthetic accounting documents with the data reflected in the financial statements of the enterprise, in order to establish their compliance [11].

Checking the safekeeping of cash at the box office is very important, because the funds are the most liquid, and the violation of cash transactions is widespread and widespread. As for the characteristics of the characteristics of cash transactions, they can be grouped into the following types (fig. 5):

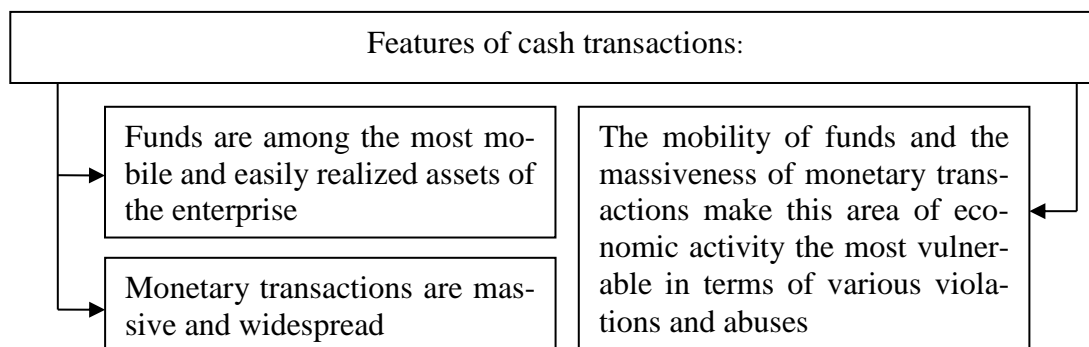


Fig. 5. Features of cash transactions

Based on the results of the audit of the company's cash in case of violations, the auditor classifies them:

on formal grounds (violation of a certain procedure: formation of primary documents, maintenance of accounting registers);

in essence (forged accounting records).

Based on the above characteristics of cash transactions, we can determine their main directions (fig. 6):

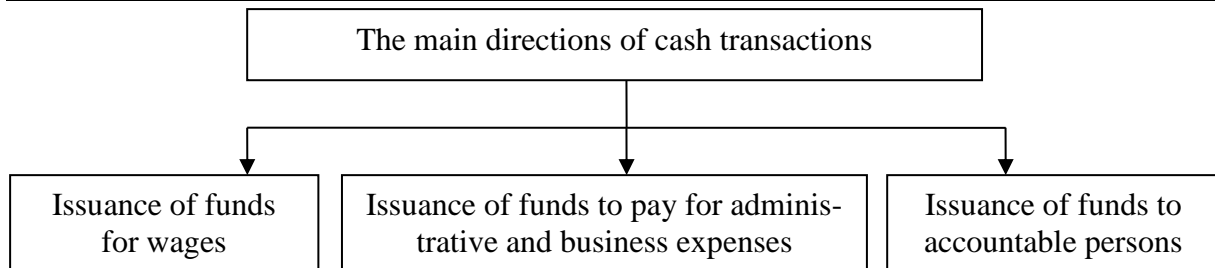


Fig. 6. Areas of cash transactions

Therefore, in accordance with International auditing standards 200, "General Objectives of an Independent Auditor and Conducting an Audit in Accordance with International Standards on Auditing," the purpose of an audit of cash transactions is to express an independent professional opinion on the entity's presentation of cash information [12]

C The strategy for conducting an audit of cash on hand is developed based on the rules of International auditing standards 300 "Planning an audit of financial statements". At the preparatory stage of the audit it is necessary to assess the system of internal control of the enterprise.

To assess the effectiveness of internal control of cash at the box office, the auditor conducts testing

An important stage of the audit is to establish the compliance of indicators on interrelated cash documents. Such control should be carried out selectively in a few days, based on the results of the inspection a working document.

The final stage of the audit is to summarize the results of the audit, to establish in accordance with International auditing standards 320 "Materiality in planning and conducting the audit" the materiality of the identified errors and violations, as well as the formulation of the relevant report.

The auditors checked the correctness of filling in all the details of income and expenditure cash orders and payment information (affixing the required dates, numbers, amounts, grounds for their issuance, seals, stamps, receipts for cash) by formal verification. The system of internal control of cash discipline was also studied, which allowed to evaluate the system of internal control of cash. According to the questionnaire of internal control at the box office, it is conducted in accordance with the requirements and without significant violations [13].

Auditor's audit of current account transactions. In accordance with International auditing standards 200, "General Objectives of an Independent Auditor and Auditing in Accordance with International Standards on Auditing," the purpose of auditing current accounts is to provide the auditor with an independent professional opinion on the correctness of disclosure of cash in bank accounts.

At the first stage of checking current account transactions, the auditor establishes the number of current, currency and other accounts in the bank's institutions, the compliance of business transactions reflected in these accounts with current legislation [14].

In the second stage of the audit, the auditor checks the completeness and timeliness of posting funds received in the accounts of enterprises, the timeliness of transfer of taxes to the budget and mandatory payments.

In the process of the third stage, the auditor checks the correctness of the correspondence used by the company of accounting accounts for banking operations.

The auditor's verification of operations on deposit accounts and accounts opened for letters of credit is carried out by establishing the availability and verification of documents substantiating the expediency of opening such accounts, storage and purpose of funds placed on these accounts.

The objects of audit of cash on bank accounts are the availability and movement of cash on bank accounts, inventory materials, financial statements [15].

The audit of banking operations is carried out in a continuous manner separately for each account. Particular attention should be paid to the current account.

During the audit, first establish the presence of all bank statements on the accounts of the enterprise. If part is missing, you need to get bank copies. After that, check the authenticity of bank statements and their quality both in appearance and by cross-checking.

When processing bank statements, it should be borne in mind that for the bank the company's account in relation to the balance sheet is passive, and therefore the balances will be credit, cash receipts on the account will be reflected on credit, and write-off - debit [16].

It is necessary to reconcile the balances of funds on the audited account with statements, accounting data and reporting. The results of such verification are reflected in the working document. Verification of bank statements should be combined with a study of the merits of banking transactions. This makes it possible to verify the legality of transactions on bank accounts and the correctness of their documentation [17].

An important stage of the audit is to verify the completeness and timeliness of accounting for funds received by the bank, the transfer of taxes to the budget and other mandatory payments to extra-budgetary funds. It is the duty of the auditor to verify the correctness and validity of the transfer of funds for inventory. To this end, compare the amounts specified in the payment documents with the data of bank statements and entries in the relevant accounts [17].

It is also important to check the completeness and authenticity of bank statements and the documents attached to them (the completeness of bank statements is

established by their numbering on the pages and the transfer of the balance on the account).

The balance of funds at the end of the period in the previous statement of the bank on the account must be equal to the balance of funds at the beginning of the period in the next statement. The correctness of the statement is determined by checking all its details. If the statement will be set unconditional corrections or deletions, strikeouts, it is necessary to conduct a cross-check of the statement data with records in the first copy of the personal account located in the bank. In the absence of separate statements, you should also contact the bank. The auditor reflects the results of the audit in his working paper. In addition, you should make sure that all transactions carried out through the bank with real and confirmed by the relevant authentic documents [18].

Sometimes they are forged or applied incompletely, which makes it possible, using incorrect correspondence of accounts, to hide in the account of abuse of significant amounts. In case of doubt about the authenticity of documents (absence of a bank stamp, correction of the listed amounts, name of the recipient of money and date of transactions) it is necessary to conduct a cross-check of payment documents stored in the company's files with payment documents in the bank [7].

The use in practice of generalized areas of organization and methods of audit control of funds will provide an opportunity to improve the formation of information to improve the efficiency of its use by the business management system. The above results of the study are an attempt to focus the attention of experts on the need to address practical issues of organization and methods of audit in the process of performing tasks. That is why further research in these areas is promising for their development [7].

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**Коляденко Д.Л.**

к.е.н., старший викладач кафедри  
комп'ютерних наук та економічної кібернетики  
Вінницький національний аграрний університет  
м. Вінниця, Україна

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**ФІНАНСОВЕ ЗАБЕЗПЕЧЕННЯ ПРОГРАМ РОЗВИТКУ МАЛОГО ПІДПРИЄМНИЦТВА****Koliadenko Dmitro**

Candidate of Economic Sciences  
Vinnytsia National Agrarian University  
Vinnytsia, Ukraine

**FINANCIAL SUPPORT OF SMALL ENTREPRENEURSHIP DEVELOPMENT PROGRAMS****Анотація.**

У рамках впровадження регіональної політики сприяння розвитку малого підприємництва реалізуються регіональні програми розвитку підприємництва, які були розроблені в усіх регіонах країни на засадах часткового їх фінансування за рахунок місцевих бюджетів. У статті за результатами комплексного дослідження існуючих методичних підходів до оцінки економічної ефективності малого підприємництва виявлено, що більшість із них базується на кількісних методах і не враховує якісні характеристики розвитку агробізнесу. Запропоновано в ході оцінювання використовувати як економетричні, так і експертні методи, що дозволить забезпечити об'єктивність отриманих результатів. Апробація удосконаленої методики не лише дозволила встановити рівень економічної ефективності розвитку малого підприємництва регіону (за його окремо взятим галузевим сегментом), але і виявити його „больові” точки зростання і розвитку: низький рівень якості робіт, незначну частку власного капіталу, високий ступінь залежності від позикових і залучених джерел фінансового забезпечення, неефективність системи управління витратами.

**Abstract**

As part of the implementation of regional policy to promote small business development, regional programs for business development are being implemented, which were developed in all regions of the country on the basis of their partial financing from local budgets. In the article, based on the results of a comprehensive study of existing methodological approaches to assessing the economic efficiency of small business, it was found that most of them are based on quantitative methods and do not take into account the qualitative characteristics of agribusiness development. It is proposed to use both econometric and expert methods during the evaluation, which will ensure the objectivity of the obtained results. Approbation of the improved methodology not only allowed to establish the level of economic efficiency of small business development in the region (by its individual industry segment), but also to identify its "painful" points of growth and development: low quality of work, low equity, high dependence on debt and involved sources of financial support, inefficiency of the cost management system.

**Ключові слова:** мале підприємництво, фінансове забезпечення, регіон, програма розвитку, агробізнес, алгоритм

**Keywords:** small business, financial support, region, development program, agribusiness, algorithm

**Formulation of the problem.** The development of a market management system requires agricultural enterprises to increase the efficiency of economic activity, as well as the competitiveness of products based on innovative development and the introduction of effective forms of management due to entrepreneurial activity. This requires small agricultural business structures in the regions to strategy and tactics of their development, the latest mechanisms for implementing sound plans and management decisions, monitoring their implementation, identifying and using reserves to improve business efficiency, especially in the field of financing small business development programs and its financial and credit support in the country as a whole and in its individual regions.

**Literature analysis.** Achieving the goals of socio-economic development of the region is carried out

due to the fact that government agencies initiate and develop a strategy for its development, as well as using economic methods to attract all available resource, production and labor potential for its implementation. Promoting the effective implementation of the mechanisms of the financial and credit system, competition, securities market, flexible use of the benefits of certain forms of ownership, the state creates the necessary conditions to increase business activity of the population and business, implementing programs to develop this business. The study of these issues is the basis of scientific developments of a number of scientists at the state and individual regions. In particular, we will pay attention to the work of scientists of VNAU who have relevant experience in solving this issue, in particular: Kaletnik G.M., Mazur A.G., Kubay O.G. [1], Goncharuk I.V., Tomashuk I.B. [2] study the problems of state regulation of rural development as a socio-economic system

that requires public administration; Fenyak L.A. and Moiseeva O.Yu. raise the problem of developing methods and various mechanisms for studying the financial security of small enterprises [3], N.I. Koval and O.D. Radchenko [4] study programs for sustainable development of small and farm enterprises, including financial resources, their use and forms of state support, Radchenko A.A., Pidvalna O.G. [5] study the same issues in the process of organizing small business in the agricultural sector of the region and some others. However, the issue of financial support of small business development programs in the modern literature is insufficiently studied.

**Research results.** The sphere of financial and credit support for small business in Ukraine is provided by banks with a fairly large branch network; non-bank financial institutions, including a large number of credit unions.

However, the ineffectiveness of supporting small business in Ukraine is obvious. Analysis of its causes allows scientists to summarize and identify the following interrelated groups of factors:

1) uncertainty and immaturity of the conceptual and program base of development and support of small business;

2) imperfection and incompleteness, in particular at the regional level, of organizational construction of a comprehensive and effective system of small business support; complete insufficiency of its resource provision, first of all - financial;

3) inconsistency of directions and mechanisms of functioning of the system of state support of small business, inadequacy of the real state of internal and external environment of this sector of economy [6].

It was noted above on the basis of the analysis of world experience that in solving financial and credit problems of small business the main role is given to the state, which contributes to the development of small business, using various methods of state and non-state support. In Ukraine, on the other hand, due to limited budget funds, the opportunities for direct state financial

and credit influence on small enterprises have been weakened.

In view of this, we consider it necessary to introduce more mechanisms of non-state influence and stimulation of small business in the region, primarily by stimulating financial institutions, commercial banks, etc. to provide loans to small businesses and expand the range of financial services for them. An effective lever will be the exemption from taxation of funds directed to loans to small businesses, as well as state guarantees of loan repayment.

Another area of stimulating lending to small businesses should be additional motivation of non-state guarantee and insurance institutions to prioritize the services of small businesses, including the formation of special funds from the state budget to provide services such as insurance and guarantee. This will make it possible to move away from direct state financial support for small businesses, which did not yield the expected results.

The solution of financial and credit problems of small businesses will also be facilitated by the establishment of mutual financing and guarantee institutions, as well as the attraction of foreign investment and assistance of international financial organizations for the development of small business in Ukraine.

Self-organization of small agricultural enterprises can improve the business climate in Ukraine, for which the efforts of the state and public associations should focus on optimizing the legal framework for rural entrepreneurship, as well as on infrastructure development of small agricultural enterprises.

Problems of formation of effective mechanisms of interaction between the government and small enterprises can also be effectively solved within the framework of social partnership [6].

This activity should be based on the development and implementation of a strategy for the development of small enterprises based on the procedure of forming the development goals of the region (Fig. 1).

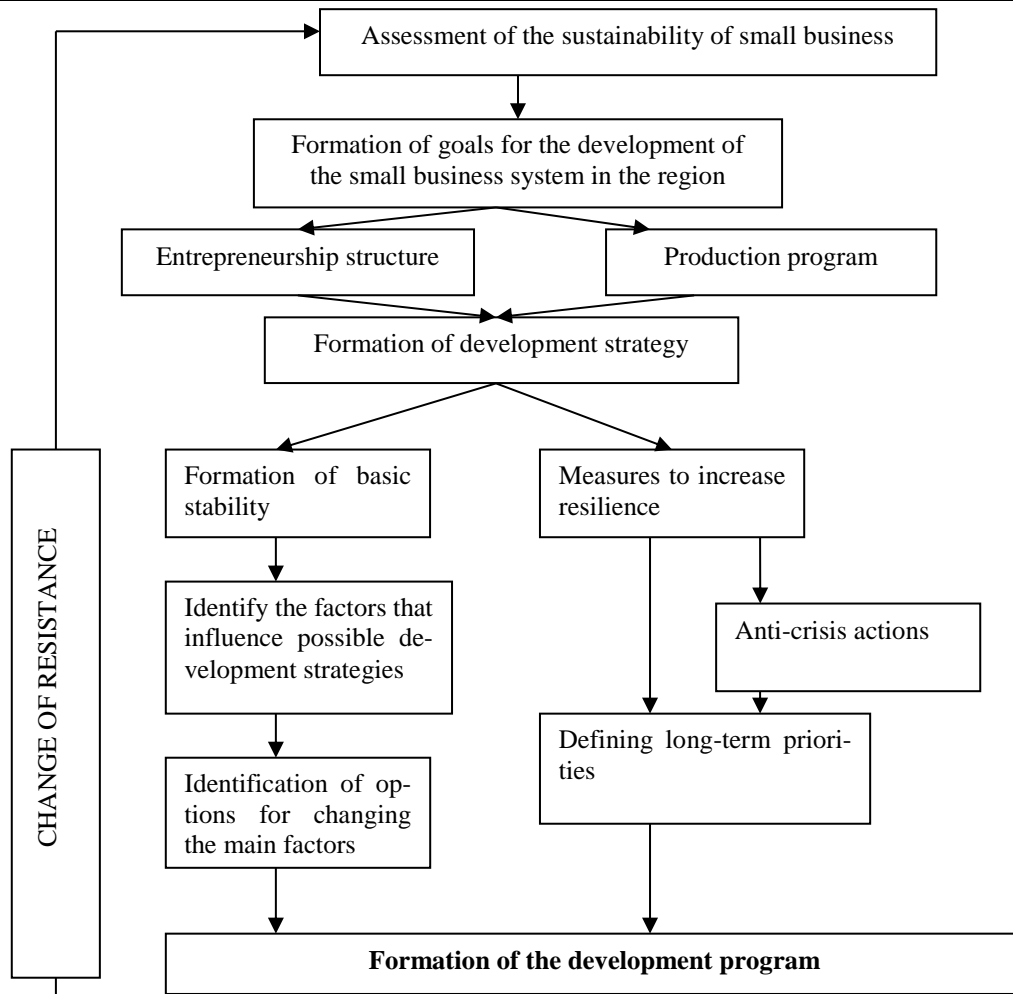


Fig. 1. Algorithm for forming a small business development program

First of all, it is a development program, a comprehensive plan for achieving certain development goals. This approach is called strategy development and has been used for a long time in developed countries. The ideology of strategic planning and management went through several stages: from a technocratic idea of the essence of the process of strategic management to an entrepreneurial, creative approach. And if in the early stages of the methods and models of strategic management used an analytical apparatus based on methods of operations research, now there is an informal creative approach to strategy development, based on the capabilities of the leader-entrepreneur. Although there are fairly well-developed procedures that help in the construction and analysis of strategies, in many respects the methods of strategy construction are vaguely abstract, which depends on the way of understanding the essence of production in each firm. The problem of assessing the relationship between the strategy and the organizational changes needed to implement it is even less formalized. Although in all known methods there is a stage of assessing the existing opportunities and additional costs for the implementation of the strategy being developed, this procedure is specific to each industry and requires its own clear consideration.

The need to find the best option is one of the main tasks in developing development strategies. This task is quite complex and includes technical, organizational,

economic, financial aspects of analysis and strategy development. Many criteria complicate the choice of the best option. The priority of the criteria is determined by the objectives of the activity, for example, possible options for financially unprofitable strategies, provided that the social effect of implementation is achieved. Limited resources (capital, raw materials, labor, etc.) are currently the main constraint on economic development. This is especially important in a transition as well as a transformational economy. Their peculiarity is the acute shortage of their own financial resources, as well as the restriction of foreign investment and strong opposition to the development of competitive enterprises.

Historically, the development of strategic thinking has gone through several stages. Thus, in the middle of the twentieth century, the main task of the strategy was to choose options for enterprise growth, and therefore at that time were mainly developed portfolio strategies.

The portfolio strategy is based on the following points:

- acquisition in new industries and directions;
- strengthening existing units through acquisitions;
- gradual exit from undesirable industries;
- sale of units that can be installed in more suitable structures;
- allocation of resources in the form of capital and costs;
- building confidence that units are the objects of

strategic management;

- use of the advantages of the synergy effect between the enterprises available in the portfolio.

The strategy implied the diversification of production through investments in various industries and enterprises, as well as the introduction of diversification changes in the activities of individual enterprises. This strategy in developed countries was caused primarily by the availability of free capital. Firms that used such a strategy acted in the vast majority of venture capital, at least in the early stages of developing such a strategy. The use of these strategies assumed the existence of general economic patterns in different industries, which prevail over industry specifics, and, therefore, it was assumed that firms that have succeeded in one industry can easily succeed in other industries. In addition, this strategy used a somewhat mechanistic, due only to financial factors approach to determining the feasibility of the firm in a particular industry and in this market segment. However, even in a market economy in the complete absence of direct state intervention in the strategy of firms, there are a number of non-economic factors due to social, ideological and political factors in the development of enterprises that affect their activities. The diversification portfolio strategy in its essence does not take into account these factors. This moment is extremely important for the activity of Ukrainian enterprises. Most companies have followed the path of developing a diversification portfolio, trying to engage in various activities, and the reason for such a strategy is not the same as in developed countries (in the vast majority - it is a survival strategy). At the same time, companies operating in the market of other industries risk much more capital than they could afford, based on the goals of optimal diversification.

However, in developed countries, as competition has evolved, the emphasis in strategy development has shifted from corporations to enterprises in order to achieve long-term competitive advantages that would ensure high profitability - that is, business strategy has gained an advantage. Business strategy is a model of actions needed to achieve goals by coordinating and allocating company resources. This strategy assumes a competitive market model, the main factor of success in which will be to achieve advantages over competitors. The main elements of this strategy are the ability to assess the position and development strategy of your own and competing company, ie the ability to identify trends based on the allocation of a limited number of factors influencing the success of the company. It should be noted that today in the Ukrainian economy the number and speed of change of economic factors are so large that it makes it impossible to develop a long-term business strategy without some adjustment of approaches to its development.

The business strategy of the enterprise is divided into a number of functional strategies by type of activity. This facilitates the formation of a holistic strategy. The principle of strategy decomposition is correct, because the general strategy is an abstract concept and it is impossible to define it using any one indicator. The long-term target profitability indicator cannot be such a tool, because it plays both a role and a criterion and a constraint in the development of the strategy, changing places depending on the stage and degree of problem development. The specifics of some industries and understanding the role of the enterprise (firm, company)

in them require the formation of a set of indicators used in the development and evaluation of strategies.

Thus, the development strategy should include elements of portfolio (diversification) and business (competitive) strategy. In addition, the strategy should optimally take into account the criteria and limitations of strategy formation in a particular area and at this stage of economic development.

The strategy of the enterprise is determined on the basis of the main elements of the production system. Thus, B. Karloff sees the following elements as key elements: the mission of the corporation; competitive advantages; development programs; product; culture and competence of management; markets; organization of the case; resource; structural changes [7, p. 52].

Analyzing the distribution of efforts on these elements, you can determine the strategy of the organization, the strategic plan of which in general is a way to achieve any goals by type of activity. The effectiveness of the strategy will be affected by the effectiveness of all stages of its design. The number of elements of production considered in the process of strategic management planning should cover as fully as possible all aspects of the enterprise. However, when evaluating the strategy of the enterprise, it is advisable to consider its impact on each element, both comprehensively and separately. Moreover, the individual relationships of strategy and system elements are subject to formalized description using economic and mathematical methods and can be the basis for creating a system of optimization of strategic management of small businesses in the region, in particular in the agricultural sector.

The process of strategy development is combined, i.e. it cannot be described only by analytical procedures, because at all stages there is also a creative approach and a dynamic process of cognition. And at each stage of development there are all three types of work. However, the goal of the company is to develop the most formalized method of strategy design, which can be used repeatedly for different conditions. The most developed at this time is the stage of strategy development, associated with the assessment and analysis of the strategic position of the organization and, based on this analysis, the definition of possible strategies for its development. Otherwise, this stage can be called positioning (positioning strategy).

Analysis of approaches to the development of business strategy of the enterprise and functional strategies by type of activity allows to make a generalized procedure for designing development strategies for small enterprises in the agricultural sector.

The strategy selection procedure, based on the functional sub-strategies, involves the following steps:

1. Formation of general goals of development (mission) of the enterprise: what is the main idea? what are the options and advantages in relation to the basic strategic principles?

2. Defining functional goals: what products and services should be offered? to which markets? what position in the market is expected to take? what growth rates can be achieved? what are the tasks of the functional units of the enterprise (marketing, production, supply, finance, personnel management, general management)? what is the policy on profit or risk? what policy should be adopted regarding cooperation, acquisitions or mergers?

3. Choosing a strategy for achieving the mission:

what is the main strategy best suited to achieve the goals (geographic region, market share, cost leadership, etc.)? what is the scope of the project? what are the most important resources needed? what is their location?

4. Definition of functional strategies: goals, strategies and activities in relation to marketing (marketing concept), goals and strategies in relation to the supply of materials, goals and strategies in relation to production, goals and strategies in relation to technology, goals and strategies in relation to finance, labor, social relations.

5. Formation of a competitive set of functional goals and strategies.

6. Selection of optimal goals and strategies.

7. Planning the implementation of strategies: planning and the optimal combination of necessary resources.

8. Verification and adaptation of the strategy during the periods of implementation and operation.

As can be seen from the above procedure, we mean the optimization process of choosing a strategy with the possible elimination of ineffective solutions at each stage. It is obvious that the logical extension of this procedure will be to give it an iterative nature with possible returns to previous stages in order to adjust the decisions made.

In the given technique the correspondence between the purposes in functional areas and strategies of their achievement, and also sub-strategies as indicators of realization of strategy is carried out. After the stage of choosing the main strategy of enterprise development, the directions of the enterprise's investment policy and strategy in specific areas of activity are developed in more detail.

Analyzing the above methods, we can determine the sequence of selection of the functional strategy of a small enterprise as follows:

1. Choice of purpose (goals) of activity.
2. Analysis of potential opportunities.
3. Formation of restrictions.
4. Generation of business strategies.
5. Analysis of factors implementing strategies.
6. Evaluation of strategies.
7. Choice of current strategy.

In general, this algorithm has a multi-stage iterative nature with possible waste back at each stage. The disadvantage of the proposed algorithm is that its computational complexity reaches a factorial dependence on the factors considered, but the iterative nature allows to reduce the problem sufficiently to solve.

Obviously, the strategy of small business development should be based on a systematic approach to the design process and to the activities of the enterprise as a whole. Strategy, as a plan of action, is both an element of this system and a way of establishing connections in the system, i.e. a structural moment. Based on this, it is obvious the mutual influence of existing production structures on the strategy, as well as the adopted strategy - on existing structures. It is obvious that only on the way of mutual approximation of the strategy of a small enterprise to the realities of organizational capabilities and changes in the organization for the fullest compliance with its strategy is possible effective development of production in the agricultural sector of the region.

The system of stability formation includes a certain set of methods, mechanisms and tools of regulation (Table 1).

Table 1

**A set of methods for forming the stability of the small business system \***

Subjects of the system	The main components of the system		
	Methods	Mechanisms	Tools
Managers	Financial analysis Financial management	Risk management Lending	Insurance
Owners	Investment	Profit distribution	Diversification
State	Support	Benefits Procurement	Taxes Investments
Buyers	Demand	Shopping	Price
Suppliers	Cooperation	Deliveries	Price Quality
Property	Innovations Modernization	Amortization Investments	Leasing Credit Investments
Technologies	Innovations Modernization	Improving Franchising Acquisition	Leasing Investments
Organization	Innovations	Improvement	Investments
Marketing	Promotion	Demand formation	Advertising Discounts
Personnel	Productivity Quality	Stimulation	Material and moral encouragement

\* Compiled by the author

The considered components of the system of stability formation are classified by subjects, which allows to select the most suitable elements for each case and to form a coordinated program for the development of stability of the small business system of the agricultural

sector of the region.

In general, the basic principles of forming strategies for managing the development of small business in the agricultural sector, as well as the goals of all levels are presented in table 2.

Table 2

**Basic principles of formation of development strategy**

The level of goals	Basic principles of strategy formation
Strategic goals	Resource allocation, diversification
Tactical goals	Risk management
Operational goals	Cost management

The system of small business in the region consists of a number of interdependent elements. Its main elements include:

- small businesses and individual entrepreneurs;
- market infrastructure (trade and purchasing and intermediary organizations, advertising and marketing companies);
- financial infrastructure (banks, support funds, leasing companies);
- information and analytical infrastructure (consulting, auditing, engineering companies);
- public administration and control bodies.

The formation of the development strategy is to unite efforts and ensure such interconnections of the elements of the small business system in the agricultural sector, which contribute to the achievement of the established goal - the socio-economic development of the region. In this case, the main principles of development of this system should be the proportionality and equal performance of the elements and connections of the system; flexibility and adaptability of the system.

The strategy for the development of small business in the regions should be based on the formation of public authorities' perception of key types of business activities in the agricultural sector that need to be developed in order to maintain the economic stability of the region.

The following procedure is proposed for the selection and evaluation of these areas.

The first step is to assess the competitive attractiveness of the activity. For this purpose it is offered to use indicators:

- free demand, which reflects the difference between the potential demand of the population and the volume of products (services),
- price benefit of entering the region (profitability), which reflects the difference between intra-regional and ex-regional product prices, taking into account transport and other transaction costs;
- free capacities, which reflects the possibility of increasing production within the region at currently unused capacity.

It is obvious that the state support will be first of all made to the enterprises with high indicators.

In the second step, small businesses are ranked to prioritize support. The development of small business in the agricultural sector of the region is formed on the basis of achieving the maximum gross domestic product subject to the following restrictions:

- restrictions on the number of small businesses employed in the economy due to the availability of free

labor resources in the region;

- restrictions on the production of certain items (ensuring the level of security by groups of food and non-food goods and services).

Using this technique, the author developed a program to support small businesses in the region, which primarily proposes to support small businesses and entrepreneurs engaged in the production and processing of agricultural products.

The concept of small-scale agricultural enterprise development in the future should be developed and presented in the relevant medium-term investment programs and targeted investment programs for the development of territories, which in turn may be part of government programs.

The implementation of programs must be coordinated with the amount of financial resources that can be represented in the budgets of certain levels of government, as well as planned to be involved in the implementation of programs from other sources.

In modern conditions, support for the development of forms of investment in small business in the agricultural sector at the regional level, in our opinion, should be carried out in four main areas:

- improving the legislative support of investment activities, ie detailed elaboration of specific mechanisms for the implementation of existing regulations (for example, the law on investment tax credit, the resolution of the administration on the procedure for providing state support in the implementation of investment projects);
- constant monitoring of positive and negative aspects of the development of the agricultural sector;
- organization of interaction with small enterprises in order to mobilize their own funds for investment (here we are talking about the realization of mutual interests of enterprises in the region in the development of investment policy);
- implementation of investment policy concentration on strategically important industries and enterprises.

The task of optimizing the use of financial resources of the region is reduced to the task of alternative multi-criteria choice at the stage of development of socio-economic development programs. Limited financial resources force us to consider the possibility of their self-generation in the implementation of "fast" commercial projects and maintaining a balance between these projects and "social", long-term development projects. Optimizing the use of limited financial resources of the region allows to reach the necessary

indicators of development and ensure the necessary pace of sustainable growth of the regional economy.

The task of optimal financial support of small business is to determine such a set of programs that provide the maximum target function.

The problem of state regulation of economic activity of small business in the agricultural sector, as a strategic one in terms of food security, is to identify planned and market subsystems in the region's economy, their interpenetration and the organization of agreed / common management methods.

According to the law on investment activities, the state has various investment policy instruments. The variety of tools allows for a very flexible policy and, in the face of insufficient financial resources, to provide indirect investment support for small businesses in the agricultural sector. Considering the currently proposed methods of state support, we can identify the following main groups of methods.

Financial and economic, or active, methods are direct or indirect (through tax benefits) investing in strategically important for the region of the enterprise. A significant disadvantage of such methods is the lack of resources, as well as the choice of priorities, which, given the need for integrated development of the region is extremely difficult to do.

Regulatory, or passive, methods are to create conditions for attracting investors to the territory, the most favorable for any financial flows that solve the problems of investment development of the territory.

Both methods are implemented in institutional form through business support systems in general and

small business in particular. At the same time, over the years of reforming society, many institutions have been created that implement the investment policy of the state. Of course, the process of forming the institutional environment is far from over, but now we should rather talk about the development of mechanisms for implementing change. Regional integration programs should provide specific mechanisms and tools for the development and support of small business.

The task of financial support of the program of small business development of the region is to determine such a set of projects that provide the extreme of the target function - maximizing the gross regional product. The formation of the mechanism of financial support for the development of small business in the region is to implement two iterative stages (Fig. 2):

- determining the required amount of financial resources for the implementation of a particular development program;

- determining the timing of resources for the implementation of a particular development program.

To solve these problems in conditions of lack or uncertainty of the possibility of developing financial resources, it is proposed to use the principles of:

- joint (joint) use of free funds of program participants;

- priority financing of fast-paying projects with lower costs;

- the emergence of a chain of return effect and growth of financial resources through the development of credit services.

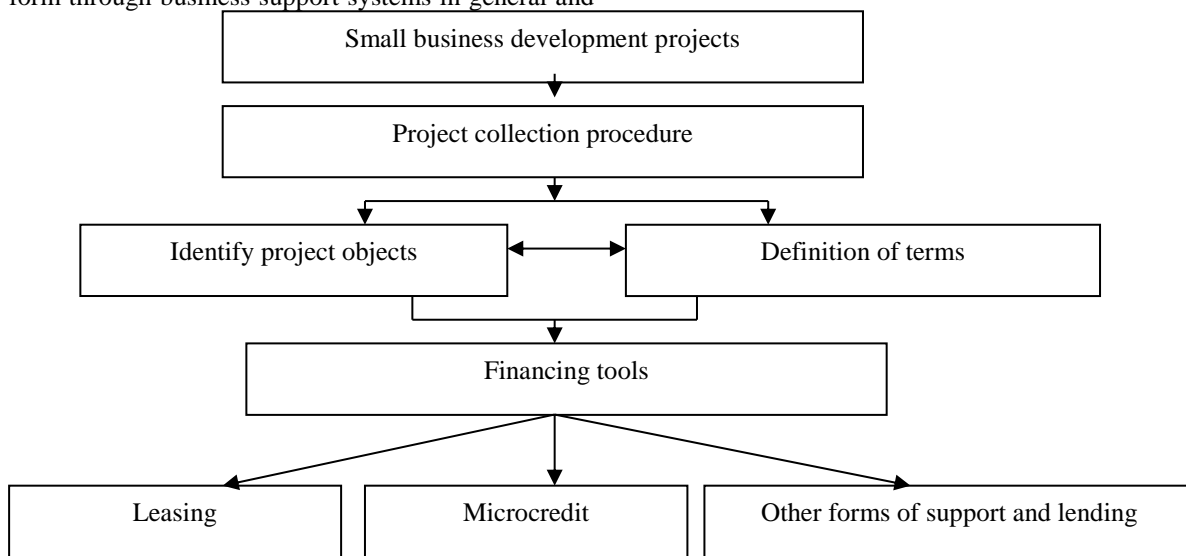


Fig. 2. The mechanism of financial support for the development of small business in the region

The specificity of the current situation in Vinnytsia region is associated with the predominant development of agricultural and processing production. Analysis of cash flows of small entrepreneurs shows that only 3% can finance their investments independently, and no more than 15% - with the help of banking structures. Thus, more than 80% of entrepreneurs in Vinnytsia region face difficulties in financing investments in the development of their activities. There are also behavioral and legal restrictions on the pledge of land and other

real estate in banks. Therefore, the obvious predominant form of financing is leasing. To improve financial schemes, the author offers two tools.

The first form is microleasing, associated with financing the purchase of inexpensive equipment and tools (up to 10 thousand UAH). In this case, the lessor becomes a state leasing company on the principle of "quick loan". Such a loan can be obtained by small businesses that are included in a special register of entrepreneurs. Long-term contractual leasing relations are concluded between the company and entrepreneurs.

The system of leasing machinery and equipment has a number of positive aspects:

- first, the state is actually given the opportunity for long-term lending for the purchase of equipment;
- secondly, fixing prices for mechanical engineering products at the time of purchase, is especially important in inflation;
- thirdly, the availability of equipment for all farmers.

The second form is the formation of a leasing partnership (on the principle of society or cooperative), in which joint and several liability and the right to use expensive equipment (over 500 thousand UAH). This form of leasing allows you to get agricultural machinery and other equipment for collective use of entrepreneurs. Possible conflicts over the use of equipment are resolved by the leasing company and entrepreneurs on the basis of contracts for use.

The proposed mechanisms contribute to the implementation of the organizational function of state support bodies, and lead to an increase in the possibility of financing small business.

**Conclusions.** Research and development of effective ways of small business development in the agricultural sector of the region allowed to obtain the following results and draw appropriate conclusions:

1. It is proved that the specifics of the formation of organizational systems of regulation of small business is determined by the peculiarities of the development of socio-economic complexes of the regions. Today in Ukraine there is a fairly extensive structure of organizations involved in supporting small business. Both small business entities and legislative and executive bodies of Ukraine should be interested in the creation and effective functioning of the mechanism for regulating small business and small organizational forms of innovative nature, and this area is a priority in the development of the small business sector.

2. Having analyzed in general the organizational and economic mechanism of small business, it is concluded that its activities are conceptual and programmatic in nature and are carried out by specialized bodies of public administration and support, as well as infrastructure. This mechanism covers various areas of the system, objectively provides for the use of appropriate resources and consists of interdependent subsystems, among which it is logical to distinguish the subsystem of organizational and economic mechanism of small organizational forms of innovation (MOFIH). This subsystem has some differences, such as the special architecture of the IOF support infrastructure, a conceptually different (in some respects) IOF support program.

An organizational and economic mechanism for regulating the development of small business in the region in the agricultural sector, which consists of three main blocks: conceptual-program, organizational and functional-resource.

3. In Vinnytsia region, with the support of state and public organizations, the process of creating and developing all the necessary basic elements to support innovative entrepreneurship, which together are able to assist small innovative enterprises in their formation

and economic activity. In turn, as world experience shows, the funds invested in the innovation infrastructure return for the state by increasing employment and increasing tax collection, and for private investors and entrepreneurs - new markets for goods and services. In the districts of Vinnytsia region there is an innovation situation with different ratio of the size of the innovation potential and the level of its use. In general, almost all districts have low investment and innovation attractiveness. The long-term strategy of socio-economic development of each district of Vinnytsia region can change the situation. Therefore, it is necessary to create conditions for sustainable competitive development of small business, which will attract significant investment in the region's economy.

4. It is proposed in the process of formation of the regional innovation system of Vinnytsia region to adhere to the principles of system and program-targeted approaches, implemented primarily in small organizational forms of innovation (business incubators). This will not only create high value-added products and increase budget revenues at all levels, but also develop knowledge-intensive production, including R&D, technology and human capital, and provide a comprehensive and systematic institutional framework for the functioning and development of small sectors of the innovation economy.

5. Socio-economic analysis of the modern investment climate of Ukraine, including in Vinnytsia region, revealed factors that constrain innovation activity in small business, namely: lack of legal framework governing activities in the innovation sphere; lack of efficient infrastructure; lack of a comprehensive system of economic and legal regulatory mechanisms; aging of scientific staff, etc.

6. A cluster model of territorial organization of small business in the agricultural sector of the region has been developed, which will also allow solving the problem of increasing the level of concentration of production. The operation of a large number of small horticultural enterprises as a result of the territorial delimitation of land plots has a negative impact on the efficiency of the industry, which increases with a higher level of concentration, which is due to more intensive use of available resources. The introduction of the cluster model will provide an opportunity to partially solve this problem by establishing close relationships between farms, as well as help to deepen the level of specialization of farms producing fruit and berry products.

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**Volontyr L.O.**

*Candidate of Technical Sciences, Associate Professor  
Vinnytsia National Agrarian University, Vinnytsia, Ukraine  
<https://orcid.org/0000-0001-9022-9332>  
Researcher ID L-8944-2018*

**Potapova N.A.**

*Candidate of Economic Sciences, Associate Professor  
Vinnytsia National Agrarian University, Vinnytsia, Ukraine  
<https://orcid.org/0000%2D0003%2D4566%2D4102>  
Researcher ID: L-8928-2018*

## THE CURRENT STATE OF LOGISTICS OF THE AGRICULTURAL SECTOR OF UKRAINE

### Abstract.

*The article covers the issues of assessment and challenges of the current state of logistics of the agricultural sector of Ukraine's economy. The main components of logistics are considered, as such the transport, production, costs, logistics and energy resources are determined. The main trends observed in the logistics of the agricultural sector are analyzed based on statistical data, and ways to improve certain areas of logistics are identified.*

**Keywords:** *logistics, resource flows, system characteristics of logistics, agricultural sector, consumers, distribution, transport.*

**Challenge problem.** Ukraine has all the necessary components to further development and use of the potential of agribusiness. This applies to increasing the export of raw materials, finished products, the use of advanced agricultural machinery, technologies for growing and harvesting, improving the logistics component. The logistics component aims to minimize losses at every stage and every process.

The organization and management of logistics supply chains of agricultural products is characterized by a high level of complexity. Logistics in agricultural supply chains has a number of features, primarily due to the specificity of agricultural products as an object of material flows, namely: seasonality of its production (mainly for crop products), limited shelf life and significant loss of consumer properties.

The processes of planning and operational management in agrolistics are often complicated by the

need to take into account the sensitivity of agricultural products to climatic conditions, various diseases and pests. Also, a wide range of agricultural products provides for the application of a diversified approach in the choice of mode of transport, location and technical equipment of warehouses, the number and composition of participants in supply chains and other conditions of logistics processes.

Analysis of the current state of agricultural logistics in Ukraine allows us to conclude that the main obstacles to its development are:

1) lack of a government program for the development of agrolistics at the appropriate level;

2) lack of qualified logistics personnel in agricultural enterprises;

3) lack of funds for the implementation of logistics approaches, as software logistics products are too expensive for domestic enterprises;

4) lack of funds for the construction of a sufficient number of modern warehouses;

5) lack of funds for the purchase of modern vehicles;

6) low quality of road surface, imperfect digital GPS software for Ukrainian roads and lack of a network of communication systems for large vehicles;

7) low investment attractiveness of agricultural sectors in Ukraine, which is mainly due to the imperfect regulatory framework and the unstable political situation in the country;

8) corruption component.

If we talk specifically about the types of transport and restraining factors of development, we can distinguish the following:

1) *Road transport:*

- Relatively high cost of transportation;

- Loss of time due to the accumulation of cars in ports during “peak periods”;

- Significant wear and tear of the equipment and high depreciation costs due to low quality roads;

- Inefficiency of long-distance transportation.

2) *Rail transportation:*

- State monopoly on services and ownership for most cars;

- Critical service life of grain wagons;

- Low capacity of railway stations in “peak” periods in ports;

- Lack of state investment programs to update the fleet of grain wagons.

3) *Water transportation:*

- High capital intensity of the development of own terminals and fleet;

- Low mobility and efficiency of transportation, limited transportation areas;

- Limited access to deep-water areas when placing terminals.

Due to inefficient logistics today, Ukrainian farmers lose about \$ 20 per ton of manufactured products. And this in annual terms at the current turnover of Ukrainian exports reaches \$ 600 million. At present, the cost of logistics in the agro-industrial complex of Ukraine is 30% higher than in the US and 40% in the EU [1]. The functioning of an economic entity is associated with the adoption of management decisions, which are almost always based on the optimization of certain processes, resources, etc. Accordingly, the elements of logistics are at every company. However, when it comes to using a logistics approach, it is necessary to apply it systematically, which will increase the efficiency of the entity. In order to ensure the efficient operation of the logistics system, it is necessary for the company to implement the appropriate sequence of actions (Fig. 1).

Thus, logistics today remains a “problematic” factor in the agricultural sector. This is a shortage of modern elevators, and low-quality road infrastructure, insufficient investment in the modernization of rail and road transport, so in almost all parts of the process we have reserves to improve performance, and hence – for further growth.

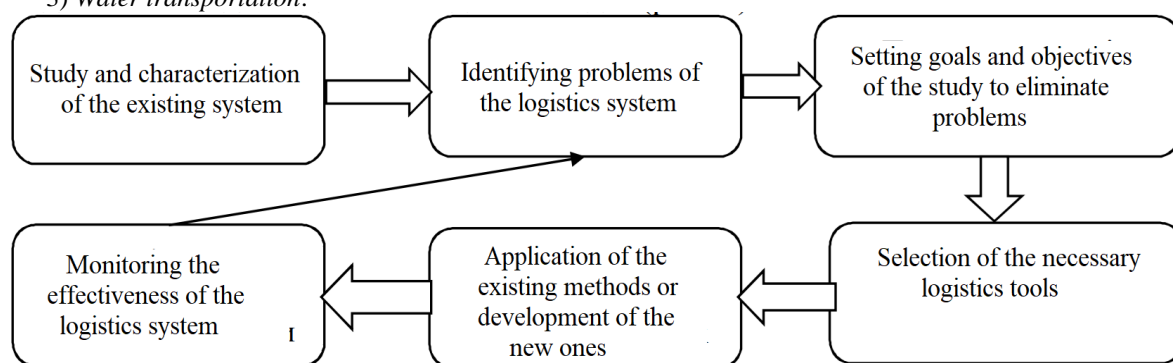


Fig. 1. Package of actions for the formation of an efficient logistics system of agricultural enterprises  
Source: developed by the author on the basis of the studied literature.

Ukraine is a country with great potential in the agricultural sector, it plans to increase exports of grain and other agricultural products in the near future. Therefore, the development of agrolistics and increasing its efficiency is currently a priority for economic development. Therefore, the research topic is relevant.

#### Analysis of recent research and publications.

World and domestic experience of efficient operation of agricultural enterprises confirms the need to improve the logistics component. Logistics is a powerful tool for optimizing all economic processes of agricultural enterprises. Many domestic scientists, namely: LV Balabanov, OA Bugutsky, OM Varchenko, OI Gutorov, SM Dimarchuk, IG Klimova, VA Kolodiychuk, EV Krykavsky, TV Kosarev, MA Oklander, VV Pisarenko, Yu. V. Ponomarev, OM Sumets, OM Tridid, LV

Frolov, NI Chukhrai and others. Scientists, studying the application of logistics, argue that the novelty of the logistics approach to material resource management is a change in the priorities of economic activity, when the main role is played not by the product but by the process in the form of flow (material, information, etc.).

The purpose of logistics is to optimize the reproduction cycle through a comprehensive, needs-oriented, the formation of the flow of materials and information in the production and distribution of products [1].

#### Presentation of the main results of the study.

The logistics system is considered an indispensable component of the development of modern society. It combines the components of the formation and promotion of resource flows with the supply of raw materials

to the finished product. The accompanying (supporting) function of this process belongs to transport logistics. Transport operation and logistics determine the efficiency of trade flows and the development of individual industries as a whole. Advances in technology and management principles improve load traffic, delivery speed, quality of service, operating costs, facility use and energy savings. Transport ensures the flow of materials in the supply chain from the place of departure to the destination where the goods are consumed. Most agricultural enterprises use inbound logistics and outbound logistics. This distribution is determined by the characteristics of the resource flow, the generation of which occurs from the supply of raw materials and ends with the entry of finished products into a competitive market. Inbound logistics includes the purchase of materials and goods from suppliers. Outbound logistics includes the supply of materials and goods to customers. The components of the logistics of the agricultural sector of the economy are the logistics of supply, storage

and production.

In order to analyze the logistics, it is necessary to analyze the existing freight turnover of domestic enterprises (Fig. 1). The general trend is a tendency to reduce transportation. Thus, in 2020 the transportation flow decreased compared to 2018 by 41,776.9 million tkm, which is an 11.1% decrease. Analysis of statistical data allows us to conclude that in January-August 2018, the freight turnover of transport enterprises amounted to 219.7 billion tons km, or 97.6% of the volume in January-August 2017.

Transport companies in 2020 transported 1,641.0 million tons of cargo, which is 99.9% of the volume in 2018 [5]. The largest volumes of traffic are concentrated on rail transport, which had the smallest decrease in 2020 compared to 2018 (in 2020 to 2018 -0.5%). The volumes of road and pipeline transportation decreased significantly.

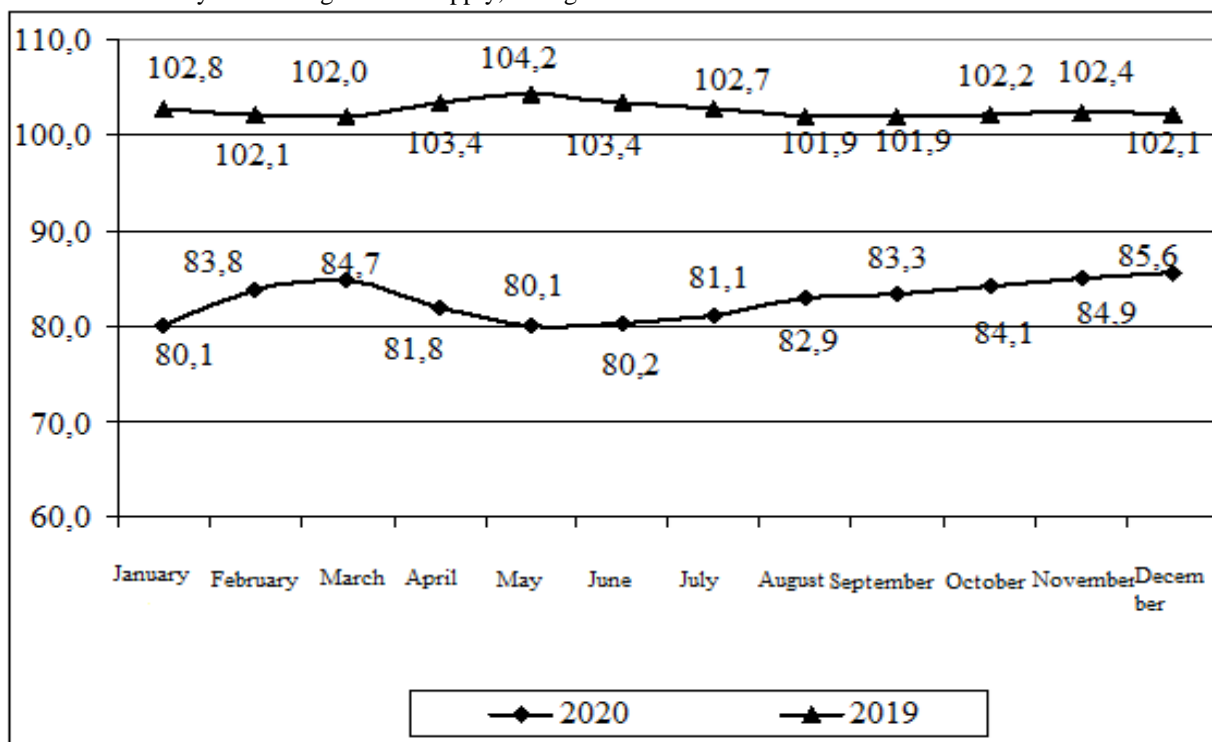


Fig. 1. Freight turnover of transport enterprises (in % against the corresponding period of the previous year, cumulative total)

Source: calculated according to [5].

The leading role in the internal transportation of goods belongs to the railway. According to Ukrzaliznytsia [15], 305.5 million tons of cargo were transported in 2020, which amounted to 97.6% of 2019. The most active was domestic transportation, which in 2020 amounted to 143.4 million tons of cargo (102.8% against 2019). Transit traffic is still insufficiently used, the level of which in 2020 amounted to 87.2% against 2019. According to the State Statistics Service of Ukraine in January-August 2018, 176.5 million tons of

cargo were transported by rail in domestic traffic and for export, which is 4.0% less than in January-August of 2017. Transportation of grain and ground products decreased by 15.0%, oil and petroleum products – by 12.7%, timber – by 8.7%, construction materials – by 8.4%, coal – by 7.0%, cement – by 3.5%, coke – by 2.6%. At the same time, transportation of ferrous metals increased by 0.8%, ferrous scrap – by 3.3%, iron and manganese ore – by 3.5%, chemical and mineral fertilizers – by 3.5%.

Table 1

## Freight turnover in Ukraine, 2018 – 2019

Types of Transportation		January – December 2018	January – December 2019	January – December 2020	Deviation of 2020 from 2018
Transportation	mln. tkm	331856.2	338962.5	290079.3	-41776.9
	In % to the corresponding period of the previous year	96.7	102.1	85.6	-11.1
railway	mln. tkm	186344.1	181844.7	175587.1	-10757
	In % to the corresponding period of the previous year	97.1	97.6	96.6	-0.5
road	mln. tkm	42569.5	48906.3	42016.9	-552.6
	In % to the corresponding period of the previous year	102.7	114.9	85.9	-16.8
water	mln. tkm	3363.0	3387.8	2877.3	-485.7
	In % to the corresponding period of the previous year	78.7	100.7	84.9	6.2
pipeline	mln. tkm	99239.9	104528.1	69281.8	-29958.1
	In % to the corresponding period of the previous year	94.1	105.3	66.3	-27.8
airlift	mln. tkm	339.7	295.6	316.2	-23.5
	In % to the corresponding period of the previous year	123.4	87.0	107.0	-16.4

Source: compiled and calculated according to [5]

In the total volume of cargo transportation by water, foreign transportation accounted for 48.4%. Compared to January-August 2017, the volume of foreign cargo transportation increased by 1.0%. In 2020, there was the largest amount of transportation of iron and manganese ore, which amounted to 79.7 million tons (26.1% in the structure of traffic in 2020). The volume of transportation of grain and ground products in 2020 amounted to 35.2 million tons, which in the structure of transportation in 2020 was 11.5%. In this group there was a decrease in transportation, which amounted to 86.8% in 2020 against the level of 2019. Compared to 2019, in 2020 there was an increase in the following types of cargo: iron ore and manganese (106.9% against 2019) and construction materials (116.8% against 2019). [5]

The railway of Ukraine has a developed network with a length of about 22,000 km. Almost 70% of the country's railway lines are equipped with modern control systems and automatic locking system. The Ukrainian railway system is connected to the railways in Russia, Belarus, Moldova, Poland, Romania, Slovakia and Hungary. It uses six railways connecting all regions of the country and serves 18 seaports in the Black Sea-Azov basin [15]. At the same time, after 2014, in connection with the occupation of part of the territory of Ukraine, the logistics connection was also disrupted, which significantly affected the flow of goods in the

country.

The state company Ukrzaliznytsia, established in December 1991, is the monopoly operator of railway transport in Ukraine. Currently, Ukrzaliznytsia is restructuring its own assets in order to modernize them. The restructuring of Ukrzaliznytsia should encourage investment in the railway sector and stimulate large-scale modernization of the domestic car fleet.

High wear of rolling stock and inefficient use of Ukrzaliznytsia causes logistical obstacles for Ukrainian grain market operators. This is exacerbated by the bureaucratic system of obtaining appropriate sanitary permits, which causes delays in the supply of grain.

Modern production systems require the adaptation of logistics systems to the existing requirements of internal and external users. After all, today logistics is defined as part of the supply chain where the management, planning and control of the efficiency of the flow of goods, their storage. This also applies to services and relevant information from the place of departure to the place of consumption to meet the needs of consumers.

In order to study the effectiveness of logistics support of the agricultural sector of the economy, it is necessary to analyze the volume of agricultural production in Ukraine (Table 2). In modern management conditions, it is important not only to grow the crop, but also to have the capacity to store it and transport it to end users.

**Harvesting of agricultural crops, 2018 – 2019**

Agricultural crops	The area harvested, thousand hectares		Production volume, thousand centners		Yield, centners per 1 ha of harvested area	
	2019	2019 in % against 2018	2019	2019 in % against 2018	2019	2019 in % against 2018
Cereals and legumes	15291.9	103.3649	80.1	79.8	47.4	49.1
Commercial sugar beet	221.3	80.56061	95.3	94.6	508.5	461.1
Sunflower	5958.9	96.63342	86.1	85.8	23	25.6
Potato	1308.8	99.15903	1.9	1.8	170.5	154.8
Vegetables	452.4	102.7481	14.4	14.7	214.3	214
Horticultural and berry crops	195.5	97.75	21.6	16.6	128.4	108.1

Source: calculated according to [12].

Examining the infrastructure for storage of agricultural products, it should be noted that the vast majority of warehouses in Ukraine was built in Soviet times. Despite some modernization since the first wave of privatization in the 1990s, many tanks, especially granaries, remain obsolete. Infrastructure facilities for storage of agricultural products in Ukraine are still underdeveloped. As of 2018, about 80% of farmers do not have access to equipment for cleaning and drying grain, which results in the significant (5-7%) crop losses and reduces the quality of final products and also reduces the price [15].

Grain warehouse account for 54% of total storage, while elevators account for the remaining 46%. A significant number of domestic grain warehouses are not

mechanized and, as a rule, are not equipped with machines for drying and cleaning. They are able to store grain for only 3-4 months, while modern elevators are able to store grain for up to 2 years [15]. High humidity, which is the result of different moisture contents and temperature changes at different times, can significantly degrade grain quality during storage. Given the above, it is now necessary to attract investment to upgrade existing logistics capacity. As a result of the implementation of this, you can increase the added value in the production of agricultural products.

The growth rate of agricultural production and the changes of gross surplus exchange value according to the types of economic activity indicate a rapid increase in production and the need for appropriate adaptation of logistics systems (Table 3).

Table 3

**Gross exchange value according to the types of economic activity, at actual prices, UAH million**

Types of economic activity	2015	2016	2017	2018	2019	2019 against 2015, %	2019 against 2018, %
Gross surplus exchange value (principal prices)	1689387	2023228	2519561	3018190	3418141	202.3	113.3
Agriculture, forestry and fisheries	239806	279701	303949	361173	358072	149.3	99.1
Industry	393142	505432	632887	748977	790057	201.0	105.5
Real estate development	38928	47457	64431	81259	106751	274.2	131.4
Wholesale and retail trade; repair of motor vehicles and motorcycles	273989	318075	409994	471844	524083	191.3	111.1
Transport, warehousing, postal and courier activities	134978	156745	191209	227256	268968	199.3	118.4
Temporary accommodation and catering	11946	15551	18727	25112	34630	289.9	137.9
Other types of economic activity	596598	700267	898364	1102569	1335580	223.9	121.1

Source: calculated according to the data of [12]

Taking into account the building up in production, it is necessary to increase the storage capacity. The capacity of domestic grain warehouses ranges from 25,000 tons to more than 200,000 tons, and the capacity of each individual elevator is from 8000-25000 tons. Poltava, Odessa, Dnipropetrovsk, Vinnytsia and Kirovohrad regions have the largest volumes for grain storage in Ukraine, accounting for 38% of the total national

capacity. Given further investment in storage infrastructure, the total capacity of elevators will increase to 12-15 million tons in the next 10 years.

Existing domestic logistics systems are adapted mainly for the export of raw materials. At the same time, when analyzing the production of certain types of food industry products, we can conclude that it is necessary to establish closed production cycles for certain types of food products (Table 4).

Table 4

**Production of certain types of food industry products, thousand tons**

Types of products	2015	2016	2017	2018	2019	2019 against 2015, %
Beef and veal, fresh or chilled – carcasses, half-carcasses, quarters unboned	50.0	59.1	58.5	56.3	55.8	111.6
Fresh or chilled pork – carcasses, half-carcasses (including those treated with salt or preservatives for temporary storage)	235.4	237.5	228.2	222.7	226.2	96.1
Beef and veal frozen – carcasses, half-carcasses, quarters, cutoffs	20.7	15.2	18.4	20.2	16.6	80.2
Frozen pork – carcasses, half-carcasses	12.4	7.4	6.6	6.7	11.8	95.2
Hen, chicken, fresh or chilled – carcasses	325.9	294.8	319.8	266.9	249.0	76.4
Hen, chicken, frozen – carcasses	145.0	216.7	76.8	103.8	128.4	88.6
Sausage and similar products of meat, by-products or blood of animals, and similar products and food products based thereon (excluding liver sausages and prepared meals)	228.8	233.0	247.1	247.8	237.2	103.7
Tomato juice, million liters	44.1	44.2	44.2	47.3	45.4	102.9
Apple juice, million liters	86.1	74.6	74.0	105.9	100.6	116.8
Mixtures of fruit and vegetable juices, million liters	188.6	187.1	186.8	184.3	188.6	100.0
Sunflower oil and its fractions, unrefined (except chemically modified)	3715.8	4424.0	5354.8	5148.6	5836.2	157.1

Source: calculated according to the data of [12].

It should be noted that state operators are the main players in the market of storage of agricultural products in Ukraine. They have a total storage capacity of approximately 5.6 million tons, or 18% of the total. The Grain Corporation of Ukraine, which includes *Khlib Ukraine*, is the largest elevator owner in the country and the most powerful state operator.

Traders represent the second largest group of warehouse owners who have modern elevators for storing agricultural products. The Swiss company *Glen-core* owns storage facilities with a total capacity of 1.9 million tons (6% of the total) in Ukraine. This company is the largest among private enterprises. *Nibulon* is another major exporter of agricultural food products, with storage capacity of up to 1.6 million tons (5% of total). The infrastructure of this enterprise includes a modern terminal, Mykolayiv port, elevators and river terminals in Dnipropetrovsk, Cherkasy, Poltava and Zaporizhzhia regions. The main integrated agricultural

companies together have a capacity of 6.2 million tons or more than 20% of the total country. Domestic agro-industrial enterprises have invested more than 150-250 US dollars for one ton of storage capacity for agricultural products. In this case, the costs associated with the construction of a new elevator can be reimbursed in 5-7 years.

It should be noted that producers adapt to modern market conditions and begin to develop their own logistics infrastructure. Modern steel elevators and hoppers built by agricultural holdings offer reliable mechanisms for grain quality control, as they are equipped with temperature control, aeration and insect detection technologies. Moreover, the grain can be easily rotated and dried in modern silos.

In recent years, the agricultural sector is characterized by a low level of efficiency (Table 5).

Table 5

**Efficiency indicators of agricultural production in Ukraine, 2017 – 2019**

Efficiency indicators	2017	2018	2019	Deviation of 2019 against 2017, +/-
Financial result before tax, UAH million	68606.5	70770.2	90836.3	22229.8
Enterprises that received profit before tax, as a percentage of the total	86.8	86.8	83.5	-3.3
Enterprises that suffered a loss before tax, as a percentage of the total	13.2	13.2	16.5	3.3
Net profit (loss), UAH million	68276.8	70461.8	90167.0	21890.2
The profitability level of all activities, %	16.5	14.2	16.1	-0.4
The profitability level of operating activities, %	23.2	18.9	19.3	-3.9
Number of employees, thousand people	489.2	479.8	461.5	-27.7

Source: calculated by the authors according to the data of [5].

For the period from 2017 to 2019, the pre-tax financial result increased by UAH 22,229.8 million. Despite the obtained result, the share of enterprises that suffered a loss from operating results increased by 3.3%. It should be noted that the most profitable is the

production of crop products. At the same time, systemic links in the formation of costs are due in no small part, as the costs of agricultural enterprises specializing in the production of crop products are dependent on industrial enterprises (chemical, energy, food industry)

and have significant export-import potential, for example, such products as oilseeds and cereals. Live-stock products are less profitable, although in recent years, thanks to government support, the industry has exceeded the threshold of unprofitability. Today family farms in Ukraine are actively developing, in the activity of which the potential for increasing the volume of dairy products is considered. The investment project "Family Dairy Farms" unites the activities of 87 investors, thanks to which UAH 2.7 million of investments were received. To date, 85 family farms have been opened in Volyn, Rivne, Ternopil, Zhytomyr, Khmelnytsky and Lviv regions. [16].

Live-stock costs depend not only on the significant impact of industrial activities but also on the crop sector (production of fodder crops).

The structure of the production cost of agricultural enterprises of Ukraine for 2019 is shown in table 6. As can be seen from the obtained cost elements, the largest share is material costs, the value of which is 57.7%. The largest share in the cost structure are stocks of mineral

fertilizers and feed. Thus, the share of feed costs is 11.4%, which amounts to UAH 52,678.8 million. In this case, the cost of feed produced in-house and purchased ones are distributed in approximately equal parts. Expenditures on seeds and planting material of the crop industry averaged UAH 38,402.2 million. (8.3%), and the share of expenditures on mineral fertilizers amounted to about 15.0% - UAH 69,506.2 million.

The costs of transport services, which are reflected in the elements: petroleum products and services of other organizations, are quite significant. Thus, the share of petroleum products in the cost of production amounted to almost 8.7%. And the share of spare parts costs was 5.0%. In such conditions, there is an urgent need to develop effective tools for managing sales processes, minimizing costs, organizing effective supply schemes, etc. All this results in the creation of an effective logistics system for the supply of agricultural enterprises on the basis of unified system characteristics.

Table 6

**The structure of the production cost of products (works, services) agriculture in the enterprises of Ukraine for 2019**

	Enterprises		incl. farming enterprise	
	UAH mln	in % against total	UAH mln	in % against total
Costs	463271.6	100.0	78580.2	100.0
Direct material costs	266918.0	57.7	47299.5	60.2
including				
seeds and planting material	38402.2	8.3	8335.2	10.6
feed	52678.8	11.4	2774.4	3.5
of which are purchased	23752.9	5.1	1299.3	1.7
other agricultural products	7653.1	1.7	309.5	0.4
mineral fertilizers	69506.2	15.0	16364.3	20.8
fuels and lubricants	40532.0	8.7	9995.2	12.7
electricity	4578.8	1.0	536.8	0.7
fuel and energy	2651.5	0.6	220.6	0.3
spare parts, repair and construction materials for repair	22942.0	5.0	4661.6	5.9
Direct labor costs	29729.6	6.4	4435.4	5.6
Other direct material costs	98849.9	21.3	18696.2	23.8
Total expenditures	67774.1	14.6	8149.1	10.4

Source: own calculation according to [5].

Effective inventory management (raw materials and supplies) minimizes losses due to irregular supply flow and unplanned inventory movements. Taking into account the seasonality of the operating cycle, inventory management mechanisms solve the problem of periodicity of supply of sales and supply of raw materials to processing enterprises. At the same time, the inventory management mechanism is quite influential on fluctuations in supply and demand for agricultural products. Demand forecasting and consumption analysis characterize the ability to sell products according to expected needs. Seasonality, limited resources, and especially the risk of non-compliance with climatic conditions make the process of pricing of agricultural products dependent not only on inflation expectations and

incomes but also on production technology. Stock forming occurs in various ways: serial stock, cyclic stock, stock of capacity utilization, safety stock, preventative stock [6, p. 8]. The maintenance of stocks entails the corresponding costs associated with: maintaining the physical properties of the stock (costs of depreciation, heating, electricity); with invested funds (assets are withdrawn from the turnover of the enterprise until the moment of realization); with the risk of selling the stock (taking into account the possibility of unclaimed stock). Current liabilities and current assets of agricultural enterprises of Ukraine for 2018 – 2019 are shown in Table 7.

Table 7

**Current liabilities and current assets of agricultural enterprises of Ukraine, 2018 – 2019, UAH million**

No.	Indices	2018	2019	Deviations of 2019 against 2018, %
1	Current financial investments	1876.2	1751.9	93.4
2	Cash	21948.6	23602.4	107.5
3	Payables	176088.4	182410.2	103.6
4	Current assets	654180.7	640995.1	98.0
5	incl. inventories	255983.4	270742.5	105.8
6	current biological assets	23698.8	25311	106.8
7	receivables	325880.5	297732.6	91.4

Source: State Statistics Service of Ukraine, 2020.

The majority of assets of agricultural enterprises in 2018–2019 are concentrated in current assets, where the largest share is available in receivables (about UAH 297,732.6 million). The number of accounts payable increased rapidly and in 2019 amounted to UAH 182,410.2 million. (compared to 2018, it increased by 3.6%). Short-term bank loans, which account for about 20% of all current liabilities, are quite significant in the structure of liabilities. It should be noted that for the period 2018 – 2019, 270742.5 million UAH is accumulated in the stocks of inventory of agricultural enterprises of Ukraine, which is 73.9% of current liabilities of enterprises. At the same time, agricultural enterprises double the risks of sustainability, on the one hand there is a large enough debt to pay, and on the other hand there is no sale of finished goods. This indicates a lack of rhythmic inventory turnover in the operating cycle. Almost a third of inventories are the balances of finished products that pass into the new year and storage conditions which at the beginning of the new year require significant costs for the maintenance of warehouses.

Storage of agricultural products is one of the most important issues of logistics management. First, the possibility of full compliance with the storage conditions of the product provides minimal risks of loss of product quality, and with it the stability of sales prices under the influence of seasonal fluctuations. Second, a properly located warehouse in relation to stores or production facilities minimizes the cost of transportation, packaging, sorting, etc. Third, the optimal financing option (own or leased premises) minimizes depreciation costs for warehouse maintenance costs. All these

factors to some extent increase the role of warehousing in agricultural production.

The efficiency of traffic flow management is aimed at minimizing transport costs. The essence of logistics management of traffic flow is to determine the optimal path of transportation from supplier to consumer, taking into account possible cases of traffic size, capacity of transshipment points, current maintenance costs of vehicles, etc. [7, p. 73 - 84]. The availability of tractors and agricultural machinery in agricultural enterprises of Ukraine in 2017 – 2019 is shown in Table 8. During the last 2017 – 2019, there was a tendency to reduce the resource transport potential. The number of tractors in 2019 decreased by 36,504 units and amounted to 89.5% against the level of 2017. There was a significant reduction in combine harvesters (-10,501 units), which amounted to 79.7% against the level of 2017. The number of plows in 2019 compared to 2017 decreased by 7.8%, seeders – decreased by 2.5%, harrows – decreased by 15.6%. The growth of a small amount of supply was observed only in cultivators, in 2019 their number increased by 1.9% compared to 2017. Thus, for the last 2017 – 2019 there was a reduction in the fleet of tractors and agricultural machinery.

In 2019, Vinnytsia, Poltava, Dnipropetrovsk and Odesa regions had the largest equipment, these are the regions where the activities of large agricultural complexes and agricultural holdings are most concentrated. Prospects for the development of agro-industrial transport logistics depend not only on the availability of tractors and cars but also on the development of work schedules assigned to each type of equipment with optimization of working hours.

Table 8

**Availability of tractors and agricultural machinery in agricultural enterprises of Ukraine in 2017 - 2019, units**

No.	Type of machinery	2017	2018	2019	Deviation of 2019 against 2017, %
1	Tractors	347111	377306	310607	89.5
2	Combine harvesters	51611	42925	41110	79.7
3	Seeding-machines	193809	195922	189013	97.5
4	Plows	336646	351830	310249	92.2
5	Cultivators	189093	210156	192660	101.9
6	Harrows	581578	524819	502567	86.4

\* Source: State Statistics Committee of Ukraine, 2020.

At the same time, it is necessary to pay attention to performance of works according to technological maps on each agricultural crop. It is also necessary to take into account the downtime of cars when transporting products in the fields directly during working with combines and due to the replacement of components

due to breakdowns. In the case of transportation from harvesting points to storage facilities or to direct points of sale, the problem of optimal traffic flow with minimal transport costs for the route is solved. Along with the increase in the amount of equipment in agricultural enterprises of Ukraine, there is a reduction in the energy

capacity of engines. The structure of electricity consumption in agriculture of Ukraine for 2010 - 2019 is shown in Table 9.

Service management is based on the usage of organizational forms: implementation of service through

branches, which are an intermediary structure in communication with the consumer; organization of service through the central office (departure to the place of service); service through sales offices; service through individual representatives of the manufacturer (distributors), working on a contractual basis.

Table 9

Structure of electricity consumption in the agriculture of Ukraine, 2010 – 2019

Years	Coal and peat	Petroleum products	Natural gas	Biofuels and waste	Electricity	Heat energy
2010	0.8	61.9	6.3	0.8	13.9	16.2
2011	0.7	62.0	7.9	0.7	13.6	15.0
2012	0.6	62.1	7.0	0.9	15.1	14.3
2013	0.5	62.3	9.0	0.7	15.1	12.4
2014	0.4	65.6	6.4	0.7	14.9	11.9
2015	0.5	66.4	6.6	1.0	14.7	10.8
2016	0.4	66.7	6.5	0.9	14.1	11.4
2017	0.4	62.4	7.1	1.4	17.0	11.8
2018	0.4	62.0	6.5	1.9	17.6	11.6
2019	0.4	66.5	5.1	1.5	16.7	9.9

\* Source: State Statistics Committee of Ukraine, 2020.

Communication and the availability of information space provide the coordination the flow of orders. The ability to provide timely access to information sources increases the level of competitiveness of the logistics system. The introduction of modern IT technologies in logistics requires the solution of the following issues: minimization of ordering time; consolidation of orders into one order; personification of access; storage of large arrays of information; minimization of transaction time during order processing.

**Conclusion.** In conditions of growing competition in the markets of agricultural products, logistics is defined as a basic component of effective logistics activities of agricultural enterprises. Despite the fact that in recent periods there has been a declining trend in the volume of transportation and provision of material and technical resources of agriculture, there is potential for the formation of efficient logistics activities. Particularly acute is the issue of further implementation of lean production strategies, which will minimize the volume of stocks with low turnover.

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**Шпак Юрій Валерійович**

доктор наук з державного управління,  
доцент, професор кафедри економічної безпеки,  
публічного управління та адміністрування,  
Державний університет «Житомирська політехніка»  
ORCID: 0000-0003-0922-2550

**Федорчук Олександр Михайлович**

кандидат економічних наук,  
доцент кафедри фінансів, обліку та підприємництва,  
Херсонський державний університет,  
ORCID: 0000-0003-4732-8305

**Миколенко Інна Григорівна**

кандидат економічних наук, доцент, доцент кафедри економіки та міжнародних економічних  
відносин, Полтавська державна аграрна академія  
ORCID ID: 0000-0003-3800-6136

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## ПЕРСПЕКТИВИ ТА ПРОБЛЕМИ ІННОВАЦІЙНОГО РОЗВИТКУ АГРОПРОМИСЛОВОГО ВИРОБНИЦТВА НА РЕГІОНАЛЬНОМУ РІВНІ

**Shpak Y.V.**

doctor of sciences in public administration, associate professor, professor of the department of economic  
security, public management and administration, state university "Zhytomyrska polytechnic"

**Fedorchuk O.M.**

candidate of sciences in economics, assistant professor of the department of finance, accounting and entre-  
preneurship Kherson State University,

**Mykolenko I.H.**

Candidate of Sciences (Economics), Associated Professor, Associated Professor of Economics and Interna-  
tional Economics Affairs, Poltava State Agrarian Academy

## PROSPECTS AND PROBLEMS OF INNOVATIVE DEVELOPMENT OF AGRICULTURAL PRODUCTION AT THE REGIONAL LEVEL

### **Анотація.**

Практика історичного розвитку ринку постійно підтверджує, що один тільки ринковий механізм не спроможний на належному рівні розв'язати проблеми суспільного відтворення, а тому він потребує втручання з боку держави. Проте це потребує конкретизації питання, яким повинне бути оптимальне співвідношення елементів ринкового механізму та заходів державного регулювання на різних етапах формування і функціонування ринку. В Україні склалися умови, коли споживчий ринок не наповнюється вітчизняними потрібними продуктами харчування, зокрема м'ясом, в обсязі, який необхідний для задоволення потреб населення. Найсуттєвішою особливістю переробної промисловості є залежність її від сировинної бази. Тому однією з важливих умов подальшого розвитку переробної промисловості є підвищення обсягу виробництва сировини. На сучасному етапі у загальному обсязі виробництва її частка складає більше ніж 60%. Як свідчить практика, перехід виробництва на принципи соціально-орієнтованої ринкової економіки не може бути успішно здійснено на старій організаційній основі, без залучення сучасних інноваційних методів. Підвищення ефективності виробництва у харчовій промисловості в ринкових умовах може бути досягнуто завдяки інноваційному технічному переоснащенню та впровадженню ресурсозберігаючих технологій, які дозволяють зменшити витрати та збільшити випуск продукції; постійному підвищенню мотивації праці сільгоспвиробників шляхом формування механізму розподільчих відносин; встановленню паритетної ціни, яка б виконувала економічну функцію забезпечення зацікавленості кожного з членів інтегрованої системи.

### **Abstract.**

The practice of historical market development constantly confirms that the market mechanism alone is not able to solve the problems of social reproduction at the appropriate level, and therefore it requires state intervention. However, the question of what should be the optimal ratio of elements of the market mechanism and measures of state regulation at different stages of market formation and functioning still needs to be specified. In Ukraine, there are conditions when the consumer market is not filled with domestic food, including meat, to the extent necessary to meet the needs of the population. The most significant feature of the processing industry is its dependence on the raw material base. Therefore, one of the important conditions for further development of the processing industry is to increase the production of raw materials. At the present stage, its share in total production is more than 60%. As practice shows, the transition of production to the principles of socially-oriented market economy cannot be successfully carried out on the old organizational basis, without the involvement of modern innovative methods. Improving the efficiency of production in the food industry in market conditions can be

achieved through innovative technical re-equipment and the introduction of resource-saving technologies that reduce costs and increase production; constant increase of motivation of work of agricultural producers by formation of the distributive relations mechanism; establishing a parity price that would perform the economic function of ensuring the interest of each member of the integrated system.

**Ключові слова:** агропромислове виробництво, інновації, Концепція науково-технологічного та інноваційного розвитку України, сільське господарство, інноваційний розвиток.

**Keywords:** agro-industrial production, innovations, Concept of scientific-technological and innovative development of Ukraine, agriculture, innovative development.

**Постановка проблеми.** Формування регіональних ринків повинно починатися з повного забезпечення населення продуктами харчування, виходячи з економічної діяльності виробництва. Створення нової системи господарювання пов'язане з реформуванням і інноваційним розвитком агропромислового комплексу України та її регіонів. Незалежний шлях розвитку України зумовив необхідність формування соціально-орієнтованих ринкових відносин у сільському господарстві, в яких першочергового значення набуває сукупність взаємопов'язаних інноваційних важелів і методів впливу на виробництво, обмін, розподіл і споживання продуктів.

**Аналіз останніх досліджень і публікацій.** Проблематика інноваційного розвитку агропромислового виробництва на регіональному рівні, привертає увагу як українських, так і закордонних науковців. Зокрема, дослідженнями інноваційного розвитку агропромислового виробництва займалися чимало вітчизняних науковців: Г. Андрусенка, Л. Анічина, П.Гайдуцького, М. Корецького, Д. Крисанова, М. Кропивка, П. Макаренка, М. Маліка, В. Мартиненка, Л. Мельника, В. Месель-Веселяка, О.Полякова, П. Саблука та ін. Проблематика оцінки та управління інноваціями в АПК отримала розвиток у роботах таких науковців як В. Трегобчука, О. Шпичака, В.Юрчишина, С. Іванюта, І. Стародубцев, К. Таранюк, А. Татаркін, А. Черепанова та інші. Хоча в роботах цих та інших авторів розглянуто різні аспекти реалізації інноваційного розвитку агропромислового виробництва, залишається низка не повною мірою висвітлених питань, пов'язаних з особливостями реалізації інноваційної політики в контексті агропромислового виробництва на регіональному рівні, зокрема з урахуванням досвіду ЄС, та пошуком шляхів її удосконалення.

**Метою статті** є визначення основних напрямів інноваційного розвитку агропромислового виробництва на регіональному рівні.

**Виклад основного матеріалу.** В Україні ще в 1999 року була ухвалена Концепція науково-технологічного та інноваційного розвитку України [2].

Концепція спирається на визнання того, що науково-технологічний та інноваційний розвиток є невід'ємною складовою частиною задоволення широкого комплексу національних інтересів держави, що реальну незалежність і безпеку мають лише країни, здатні забезпечувати оволодіння новими знаннями та ефективно їх використання. Тому однією з основ Концепції є віднесення збереження та

підвищення якості науково-технологічного потенціалу до пріоритетних національних інтересів України.

Дія Концепції розрахована на період стабілізації економіки та досягнення сталого її розвитку.

Головними цілями науково-технологічного та інноваційного розвитку України визначаються:

підвищення ролі наукових та технологічних факторів у подоланні кризових явищ соціально-економічному розвитку України та забезпеченні її економічного зростання, утвердженні духовності у суспільстві, вдосконаленні державотворення; створення ефективних механізмів збереження, ефективного використання та розвитку національного науково-технологічного потенціалу; технологічне переобладнання і структурна перебудова виробництва з метою нарощування випуску товарів, конкурентоспроможних на світовому і внутрішньому ринках; збільшення експортного потенціалу за рахунок наукоємких галузей виробництва, зменшення залежності економіки України від імпорту; органічне включення інноваційних факторів до процесу соціально-економічного розвитку держави, збереження довкілля та ефективного використання природних ресурсів, сприяння створенню в економіці достатньої кількості робочих місць, у тому числі для випускників навчальних закладів, фахівців, які внаслідок економічної кризи втратили свої робочі місця у виробництві, науці, освіті тощо, а також для спеціалістів, які звільняються із Збройних Сил; відродження творчої діяльності винахідників і раціоналізаторів виробництва; розвиток людини як особистості, збереження і захист її здоров'я та середовища проживання, створення умов для високопродуктивної, творчої та безпечної праці і сучасного побуту.

В умовах жорсткого дефіциту коштів необхідно вдосконалити систему формування і реалізації державних пріоритетів у сфері науки та технологій. В її основу має бути покладено принципи відповідності основних напрямів науково-технологічного розвитку головним проблемам та перспективам розвитку суспільства. Слід забезпечити комбінований підхід до підтримки відповідних напрямів науки і техніки, який передбачає фінансування державою фундаментальних досліджень, а також створення та впровадження ринкових науково-технологічних інновацій у сфері пріоритетних прикладних досліджень.

Виходячи з актуальності наявних в Україні проблем, вирішення яких потребує наукового забезпечення, найбільш пріоритетними напрямками державної підтримки мають стати:

у сфері наукового розвитку: фундаментальна наука, насамперед розробки вітчизняних наукових колективів, що мають світове визнання; прикладні дослідження і технології, в яких Україна має значний науковий, технологічний та виробничий потенціал і які здатні забезпечити вихід вітчизняної продукції на світовий ринок; вища освіта, підготовка наукових і науково-педагогічних кадрів з пріоритетних напрямів науково-технологічного розвитку; розвиток наукових засад розбудови соціально орієнтованої ринкової економіки; наукове забезпечення вирішення проблем здоров'я людини та екологічної безпеки; система інформаційного та матеріально-технічного забезпечення наукової діяльності;

у сфері технологічного розвитку: дослідження і створення умов для високопродуктивної праці та сучасного побуту людини; розроблення засобів збереження і захисту здоров'я людини, забезпечення населення медичною технікою, лікарськими препаратами, засобами профілактики і лікування; розроблення ресурсо-, енергозберігаючих технологій; розроблення сучасних технологій і техніки для електроенергетики, переробних галузей виробництва, в першу чергу агропромислового комплексу, легкої та харчової промисловості;

у сфері виробництва:

формування наукоємних виробничих процесів, сприяння створенню та функціонуванню інноваційних структур (технопарків, інкубаторів тощо); створення конкурентоспроможних переробних виробництв; технологічне і технічне оновлення базових галузей економіки держави; впровадження високорентабельних інноваційно-інвестиційних проєктів, реалізація яких може забезпечити якнайшвидшу віддачу і започаткувати прогресивні зміни в структурі виробництва і тенденціях його розвитку.

Затвердження державних пріоритетів розвитку науки і техніки здійснюється у встановленому законодавством порядку. Основним механізмом реалізації пріоритетних напрямів мають бути загальнодержавні та галузеві наукові й науково-технологічні програми.

Реалізація запропонованих у Концепції заходів повинна сприяти формуванню такої моделі організації науково-дослідних, дослідно-конструкторських робіт в Україні, яка б поєднувала в собі елементи ринкової економіки із збереженням гнучких важелів державного регулювання цією найважливішою сферою життєдіяльності суспільства.

Процеси глобалізації економіки, що постали перед країнами, які знаходяться в процесі розбудови власної політико-економічної стратегії та Євроінтеграційний курс України вимагають вибору інноваційної моделі подальшого розвитку економіки нашої держави. Інноваційна спроможність нині відіграє домінуючу роль у конкурентній боротьбі. За ринкових умов більш успішним є той, хто

не тільки швидше та якісніше створює новітні проєкти і технології, а й хто швидко може втілювати їх у виробництво, у конкурентний продукт і виходити з ним на світові ринки.

Розвиток сучасного цивілізованого суспільного виробництва, як відомо, здійснювався на основі застосування досягнень науково-технологічного прогресу. Про це свідчить тісний зв'язок науки з виробництвом, який відбувається за схемою: "наука – техніка – технології – виробництво". Сутність науково-техніко-технологічного прогресу полягає у постійному поєднанні поступального розвитку науки, техніки, технології, матеріального виробництва. Це комплексний процес розвитку й удосконалення знарядь праці, технологій та організації виробництва. Він охоплює всі сторони суспільної діяльності і спрямовується на підвищення її ефективності.

В результаті здійснення науково-технічного прогресу відбувається матеріалізація наукових досягнень у розвитку техніки. А прискорення науково-технічного і технологічного прогресу здійснюється, насамперед, з метою системного оновлення ресурсного потенціалу. Останнє ж стає основою економічного розвитку галузі й держави. Цей процес має як економічне, так і соціальне значення. Так, його економічне значення в аграрній сфері полягає у здійсненні нарощування продовольчих ресурсів при зменшенні суспільних витрат на одиницю продукції. Соціальне ж значення розвитку науково-технічного прогресу проявляється у поступовому зниженні в процесі виробництва залежності людини від природних факторів, створенні сприятливого життєвого середовища сільським жителям завдяки підвищенню техніко-технологічної оснащеності праці, високому рівню забезпечення добробуту тощо [3].

Нині не існує чіткого визначення інновацій. Наприклад, інновація в одних оцінках — це майже інформація, в інших інновація — це продана новація.

В науково-інноваційному розвитку АПК можна визначити п'ять позицій (поглядів): з боку держави — державні підходи регулювання; з боку науки — наука має свій погляд на будь-який процес; з боку виробника — технології виробництва продукту; з боку споживача — задоволення споживчих потреб.

Враховуючи досвід ЄС, програма інноваційного провайдингу передбачає створення і функціонування регіональних інтегрованих науково-виробничих технокластерів з виробництва рослинницької і тваринницької продукції, а також іншої високоякісної продукції за наукоємними технологіями з інвестиційним забезпеченням [4].

В цілому інноваційна діяльність в агропромисловому виробництві України відзначається нестабільністю, недостатньою збалансованістю фінансових джерел, відсутністю чітко визначених пріоритетів, що вимагає прийняття заходів на державному рівні, які б сприяли її активізації та оптимізації напрямів.

Серед заходів державного регулювання інноваційної активності в агропромисловому виробництві слід зазначити наступні: формування сучасної інноваційної інфраструктури, яка відповідає найновішим тенденціям і ринковим відносинам; організація державного страхування можливих ризиків у процесі інноваційної діяльності; створення спеціальних інвестиційно-інноваційних банків для концентрації капітальних ресурсів на цілі інновацій; сприяння зовнішньоекономічній співпраці у технологічній сфері з метою реалізації своїх технологічних можливостей і одержання необхідних інвестицій.

Державне регулювання інноваційної діяльності у підприємствах з метою підвищення активності можливе за допомогою проведення чітко вираженої політики, спрямованої на підвищення загальної ефективності виробництва. Необхідними елементами такої політики є дієвий механізм державного замовлення, який передбачає державні гарантії, координацію діяльності; організацію підготовки кадрів; пріоритетне фінансування прибуткових підприємств.

У цьому зв'язку важливим для України є розвиток загальнодержавної інноваційної системи, спрямованої на стабільність і постійне соціально-економічне зростання за рахунок реалізації інноваційних проектів.

Ефективність системи розповсюдження сільськогосподарських знань та інформації, досягнень науки в цілому дедалі більше залежить від рівня сприйняття їх потенційними споживачами, готовністю останніх у конкурентному середовищі перетворити здобутки вченого у товарні вироби, що уособлюють науково-технічний процес. За цих умов набуває винятково важливого значення питання скорочення часу проходження від наукової установи до впровадження інновацій в агропромисловому виробництві серед учасників соціальної сфери [1].

Останнім часом відпрацьовано технологію передачі й освоєння конкурентоспроможних наукових розробок, яка пройшла випробування в базових агроформуваннях. Науковці, разом із фахівцями агроформувань, готують програми, інноваційні або пілотні технологічні проекти розвитку галузей сільського господарства, агроформувань, розробляють бізнес-плани (проекти) з визначенням технологічних параметрів виробництва, потреб у ресурсах і коштах, а також програми підготовки й перепідготовки фахівців. Це дає змогу не лише виявляти попит товаровиробників у новаціях, тобто вивчати ринок щодо можливої сфери поширення інновацій, а й налагоджувати довготривалу співпрацю наукових установ з агроформуваннями.

Нині Центри наукового забезпечення агропромислового виробництва на обласному рівні є головними багатофункціональними науково-інформаційними установами відповідних регіонів, що разом з управлінськими структурами агропромислового виробництва областей здійснюють науково-інформаційну політику держави в агропромисловому

комплексі, перехід аграрних формувань на інноваційну модель розвитку.

Центри нині виконують державну науково-технічну програму "Науково-методологічні й організаційні засади маркетингу та інноваційного провайдингу в АПВ". Основні напрями роботи регіональних Центрів наукового забезпечення передбачають проведення досліджень із наступних питань [1]:

- вивчення та розробка методологічних підходів випробування сучасних агротехнологій, інших новітніх розробок і доведення їх до стадії інновацій;
- розробка методологічних підходів щодо маркетингу інновацій (технологій), трансферу інновацій та наукового супроводження інноваційних (технологічних) проектів;
- розробка інноваційних (технологічних) проектів розвитку агроформувань (окремих галузей агропромислового виробництва) та регіонів;
- надання науково-консультаційних та інформаційних послуг агроформуванням і сільському населенню в освоєнні методів прибуткового господарювання в умовах ринкової економіки;
- проведення постійно діючих тренінгів із фахівцями АПВ щодо прибуткового ведення галузей аграрного сектору;
- організація науково-технологічних демонстраційних полігонів у рослинництві й модельних ферм у тваринництві.

Інноваційний проект забезпечує: прискорене впровадження новостворених і вдосконалених конкурентоспроможних технологій, продукцій або послуг, а також організаційно-технічних рішень виробничого характеру, що істотно поліпшують структуру та якість виробництва; концентрацію наявних фінансових ресурсів для впровадження пріоритетних технологій; ефективне управління та раціональне використання науково-технічного потенціалу й земельних ресурсів підприємства; механізм запобігання (зменшення) негативному впливу погодних умов; здійснення маркетингової стратегії розвитку аграрного виробництва, завдяки якій знижується собівартість продукції, розширюються збут і потенційне коло споживачів.

Інноваційні проекти розробляються для: розвитку окремої галузі агроформування (тваринництва, рослинництва тощо); комплексного розвитку сільгосппідприємства; розвитку галузі в межах району, області; комплексного розвитку агропромислового виробництва області, району, сільгосппідприємства.

Позитивні напрацювання в цьому напрямі мають Харківський, Дніпропетровський, Кіровоградський, Луганський, Запорізький, Черкаський, Чернігівський Центри наукового забезпечення АПВ.

Практика свідчить: найбільш ефективні напрямки капіталовкладень у агропромислове виробництво – його реконструкція й технічне переоснащення. Це дає змогу в коротші строки, з меншими

затратами, ніж при новому будівництві, оновлювати матеріально-технічну базу, освоювати нові потужності.

Технічне переоснащення діючих підприємств передбачає встановлення нових машин і устаткування на діючих площах, впровадження автоматизованих систем управління і контролю, сучасних методів управління виробництвом, модернізацію і технічне переоснащення природоохоронних об'єктів, опалювальних і вентиляційних систем, підключення до централізованих джерел тепло- й електропостачання. Його слід здійснювати за проектами й кошторисами на окремі об'єкти або види робіт, які розробляють на основі єдиного техніко-економічного обґрунтування і згідно з планом підвищення техніко-економічного рівня галузі.

Щодо розширення діючих підприємств, то воно передбачає будівництво нових і збільшення потужностей діючих об'єктів на існуючих або прилеглих до них територіях. Реконструкція діючих підприємств зумовлює перебудову, пов'язану з удосконаленням виробництва і підвищенням його техніко-економічного рівня на основі науково-технічного прогресу. Реконструкція потребує комплексного проекту, який передбачає розширення виробничих потужностей, поліпшення якості та асортименту продукції (в основному без збільшення чисельності працюючих), поліпшення умов праці та охорони навколишнього середовища.

При реконструкції можливі перебудова окремих споруд основного й допоміжного призначення, будівництво нових і розширення існуючих об'єктів з метою ліквідації диспропорцій у технологічних ланцюгах. Слід також передбачити впровадження мало- й безвідхідних технологій та гнучких виробництв; скорочення робочих місць; підвищення продуктивності праці; зниження матеріаломісткості виробництва й собівартості продукції; зростання фондівіддачі та інших техніко-економічних показників діючого підприємства.

Нове будівництво слід розпочинати лише за умови, якщо реконструкція, технічне переоснащення та розширення діючих підприємств не можуть забезпечити необхідного приросту виробничих потужностей, поліпшення якості продукції, підвищення ефективності виробництва.

Визначаючи шляхи підвищення ефективності інвестиційної політики в агропромислового виробництві, слід мати на увазі таке: одна з основних особливостей капітального будівництва полягає в тому, що виробничий цикл має відносно тривалий період. Залежно від характеру й призначення об'єктів строки будівництва можуть бути від кількох місяців до кількох років, внаслідок цього на незавершене будівництво відволікаються значні кошти.

Чим коротші строки будівництва, тим менше коштів потрібно для зведення однієї й тієї ж кількості об'єктів, тим раніше нові потужності розпочнуть випуск продукції й скоротиться термін окупності капіталовкладень.

Розподіл капітальних вкладень між об'єктами будівництва (з урахуванням нормативних строків

спорудження) та концентрація їх на пускових будовах - важливі умови підвищення їхньої ефективності. Тим часом подовження строку будівництва нарівні з уповільненням обороту капіталовкладень призводить до подорожчання будівництва.

Важливий фактор ефективності капіталовкладень — удосконалення відтворювальної структури основних фондів завдяки підвищенню частки реконструкції та технічному переоснащенню діючих основних фондів.

Ефективність капіталовкладень значною мірою визначають розвиток матеріально-технічної бази будівництва, рівень заводської готовності будівельних конструкцій і деталей, темпи переоснащення будівельних організацій на основі нової техніки і підвищення рівня механізації основних і допоміжних робіт. Зростання частки типових проектів у будівництві знижує кошторисну вартість об'єктів, скорочує строки спорудження їх, підвищує продуктивність праці.

Важливим напрямком підвищення ефективності інвестицій є удосконалення організаційних форм будівництва, збільшення рівня концентрації виробництва у будіндустрії. Удосконалення структури будівництва передбачає поєднання проектування і будівельні роботи в один технологічний ланцюжок який дасть змогу в коротші строки вводити в дію виробничі потужності й об'єкти[6].

При визначенні напрямків інвестиційної політики слід враховувати такий фактор підвищення ефективності капіталовкладень, як збільшення частки витрат на устаткування, тобто на активну частину основних фондів. Тож в інвестиційній політиці харчової промисловості пріоритетом має бути технічне оснащення діючих підприємств.

Особлива увага сьогодні — вмілому використанню капіталу. Адже постійно відчувається гостра нестача інвестицій при зростанні вартості капітального будівництва, техніки, створенні капітало- та наукоємких виробництв. Звісно, модернізувати діючі підприємства потрібно. Але робити це широкомасштабно доцільно лише тоді, коли прибутки підприємств будуть достатніми для створення фондів нагромадження і споживання, а банки кредитуватимуть довгострокові інвестиційні проекти. Альтернативи тут не існує. Джерела фінансування, які можна залучити для технічного переоснащення галузі: передусім прибуток, що залишається на підприємствах, спрямовується на реконструкцію і технічне переоснащення виробництва. Потім - амортизаційні відрахування. Адже підвищення інвестиційної активності безпосередньо пов'язане із ставленням до амортизації як основного ресурсу та фінансового джерела капіталовкладень. Уповільнити старіння основних фондів можна й завдяки прискореній амортизації — головному джерелу відновлення основних виробничих фондів. Одне джерело фінансування — кошти від приватизації підприємств галузі хлібопродуктів, які можна спрямувати на технічне й технологічне оновлення виробництва. І, нарешті, доцільно залучити гроші комерційних банків, а також населення

та приватизаційні сертифікати. Це підвищить привабливість підприємств галузі для потенційних інвесторів[5].

Після набуття Україною незалежності агропромисловий комплекс зазнав нового деструктивного впливу за рахунок послаблення контролю за виробництвом, невизначеності прав і обов'язків, елементів нерегульованої приватизації, у зв'язку з чим сільськогосподарське виробництво України зазнало суттєвих втрат. Впровадження нового законодавства, яке регулює відносини в аграрному секторі, стало ареною гострої політичної боротьби як у суспільстві, так і у Верховній Раді, про що свідчить процес прийняття Земельного кодексу України. Але нині основні документи, які регулюють майнові відносини в державі у сфері аграрного виробництва, прийняті й працюють. Законодавча база, таким чином, дає широкі можливості для розвитку підприємництва в АПК, а отже, й підвищення ефективності підприємницької діяльності.

Ефективність підприємницької діяльності в АПК визначається багатьма факторами, зокрема й розміром підприємств. Світова практика показує, що малий бізнес і підприємство виступають важливими механізмами підвищення ефективності господарювання саме в галузі сільськогосподарського виробництва, оскільки в умовах командно-адміністративної системи про мале підприємство, що базується на елементах приватної власності, не могло бути мови. Принципи такого типу підприємництва в Україні по суті перебувають у процесі становлення. Як важливі елементи підвищення ефективності підприємництва, вони потребують державної підтримки і законодавчого забезпечення[7].

**Висновки.** Отже, для забезпечення конкурентних переваг в регіональному територіальному розподілі праці по виробництву продуктів харчування у відповідності з наявними природними і потенційними можливостями необхідно суттєво підвищити ефективність розвитку сировинної бази, довести врожайність основних сільськогосподарських культур до рівня світових показників; здійснити докорінне оновлення матеріально-технічної бази АПК у відповідності з новітніми досягненнями наукових технологій та вимогами світових

стандартів; забезпечити стимулювання розвитку приватного сектора у виробництві продуктів харчування, всебічне залучення іноземних інвестицій для розвитку індустрії харчування, інтенсивне формування потужного експортного потенціалу продовольчих товарів, систематичне вивчення і завоювання нових ринків збуту продуктів харчування за межами країни тощо.

Одним з головних стратегічних напрямків розвитку агропромислового виробництва є залучення інвестицій з врахуванням галузевих особливостей, прийняття ефективних управлінських рішень щодо розробки й реалізації інвестиційних проектів. Визначено основні напрями залучення інвестицій: розробка регіональних програм стимулювання приватних інвестицій, розвиток ринку цінних паперів, створення вільних економічних зон, придбання іноземними інвесторами акцій вітчизняних виробників, страхування інвестицій від некомерційних ризиків, концентрація внутрішніх ресурсів при централізованій підтримці з метою реалізації пріоритетних інвестиційних проектів.

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**Yurchuk N.P.**

Vinnytsia National Agrarian University

**Kiporenko S.S.**

Vinnytsia National Agrarian University

[DOI: 10.24412/2520-6990-2021-17104-83-91](https://doi.org/10.24412/2520-6990-2021-17104-83-91)**ARTIFICIAL INTELLIGENCE IN BUSINESS:  
THREATS, BENEFITS, TRENDS****Юрчук Н.П.**

Винницкий национальный аграрный университет

**Кипоренко С.С.**

Винницкий национальный аграрный университет

**ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ В БИЗНЕСЕ:  
УГРОЗЫ, ПРЕИМУЩЕСТВА, ТРЕНДЫ****Abstract.**

The article analyzes the essence of artificial intelligence, the principles of its use. The state of the market of artificial intelligence systems is studied. It is noted that in Ukraine the order of the Cabinet of Ministers approved the Concept of development of artificial intelligence in Ukraine until 2030. Emphasis is placed on the areas of practical application of artificial intelligence in modern conditions. The threats of using artificial intelligence in the digital economy are considered in detail. Possibilities and advantages of using artificial intelligence systems in business are highlighted. The main trends in the development of artificial intelligence systems are analyzed.

**Аннотация.**

В статье проанализировано сущность искусственного интеллекта, принципы его использования. Исследовано состояние рынка систем искусственного интеллекта. Отмечено, что в Украине распоряжением КМУ одобрена Концепция развития искусственного интеллекта в Украине до 2030 года. Акцентировано внимание на сферах практического применения искусственного интеллекта в современных условиях. Детально рассмотрены угрозы использования искусственного интеллекта в цифровой экономике. Выделены возможности и преимущества использования систем искусственного интеллекта в предпринимательской деятельности. Проанализированы основные тенденции развития систем искусственного интеллекта.

**Keywords:** artificial intelligence, business, digital technologies, management, digital economy.

**Ключевые слова:** искусственный интеллект, бизнес, цифровые технологии, управление, цифровая экономика.

**Introduction.** In the context of globalization and digitalization, one of the factors of further development of the world economy is the development of artificial intelligence. The use of artificial intelligence allows you to process big data, optimize business processes, make management decisions, and more.

Business leaders are increasingly turning to artificial intelligence (AI) as a means of improving business functions and the ability to remain competitive in an ever-changing market. Others may want to emulate them, but the question arises about the use and implementation of artificial intelligence in business in line with the improvement of financial and economic activities [1].

The potential application of artificial intelligence in business is very large. Therefore, the relevance of the research topic of the use of artificial intelligence in business is not in doubt.

**Analysis of recent research and publications.**

Consulting, technological, financial companies, Ukrainian and foreign researchers are engaged in the study of artificial intelligence: Averkyna M., Sydor-chuk L., Yurchenko YU., Ramazanov S., Shevchenko A., Kuptsova YE., Todorov Georgi, Pohorelenko A., Brundage Miles, Avin Shahar, Clark Jack, Toner

Helen, Eckersley Peter, Garfinkel Ben, Dafoe Allan, Scharre Paul, Zeitzoff Thomas, Filar Bobby, Anderson Hyrum, Roff Heather, Allen Gregory, Steinhardt Jacob, Flynn Carrick, hÉigeartaigh Seán, Beard Simon, Bel-field Haydn, Farquhar Sebastian, Amodei Dario, Teg-mark Max and others.

However, despite significant developments in the field of artificial intelligence, the issue of threats to artificial intelligence, the benefits of using artificial intelligence in business and areas for its further development needs further study.

**Goals setting.** The aim of the study is to analyze the existing threats to the use of artificial intelligence, the benefits of using artificial intelligence systems in business and trends in its further development.

**Presentation of the main material of the research.** Those who will supply intellectual and material capital will benefit the most in the new reality. Therefore, technology is one of the main factors in reducing jobs and reducing incomes, even in countries with a high level of development: the demand for highly skilled labor is growing, and for medium-skilled labor is falling. As a result, the labor market will be characterized by high needs for highly qualified and unskilled

personnel, in the practical absence of the middle segment, at least in many high-tech industries.

Preference will be given to talented, proactive, innovative participants who, thanks to global digital platforms for research, development, marketing, sales and distribution, can more quickly than ever displace long-established and well-established market participants, improving quality, speed or reducing the cost of providing products. consumption of goods [2].

According to the interpretation of the Oxford English Dictionary «artificial intelligence (also AI) - the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages» [3].

Artificial Intelligence Systems (AIS) are software and possibly hardware systems developed by humans that, in the presence of a complex goal, operate in physical or digital dimensions, perceiving the environment through data collection, interpreting collected structured or unstructured data, based on knowledge or processing the information received from this data, and choosing the best actions for achievement of the set purpose. AI systems can use symbolic rules or study a numerical model, and can adapt their behavior by analyzing the impact of the environment on their previous actions [4].

Artificial intelligence in business is an opportunity to organize and optimize activities with greater accuracy than a person could do himself. In addition, due to the integration of AI with cloud technologies, companies can easily collect, control and exchange information between internal and external stakeholders [5].

S.K. Ramazanov, A.I. Shevchenko, Ye.O. Kuptsova in [6] note that in today's unstable world, the scientific direction of AI should be based on fundamental and interdisciplinary scientific developments and

methodologies, taking into account many new challenges:

1. Artificial intelligence technologies and systems (AIS) shall be designed and constructed on the basis of the following subsystems and components:

- scientific bases, basic research and mathematical support (MS);
- technical (hardware) and technological support (TS);
- software systems, platforms and tools (PS);
- social and humanitarian (moral and ethical, cultural and ethical, philosophical and legal) support (SHS).

2. Important aspects and principles of development of future science and technologies in the field of SSI synthesis: nature-like research and technologies; designing the future. Convergence of sciences. Humanity and AI. Technological singularity (TC), TC (Raymond Kurzweil and others). Roger Penrose's theorem on AI and the quantum nature of consciousness and others. Interdisciplinarity and trans disciplinarity. Harmonization of two worlds: real and virtual, especially during their hybridization.

3. Methodology and principles of creating artificial intelligence systems. AI, as a new science in its historical formation, represents a variety of existing approaches in world and Ukrainian science to the understanding of this interdisciplinary scientific field [6].

The worldwide market revenue for artificial intelligence is forecast to grow from 2018 to 2027 (Fig. 1), although different studies suggest variations in just how much the global market size will increase by. The market research firm IDC projected that the global AI market will reach a size of over half a trillion U.S. dollars by 2024 [7].

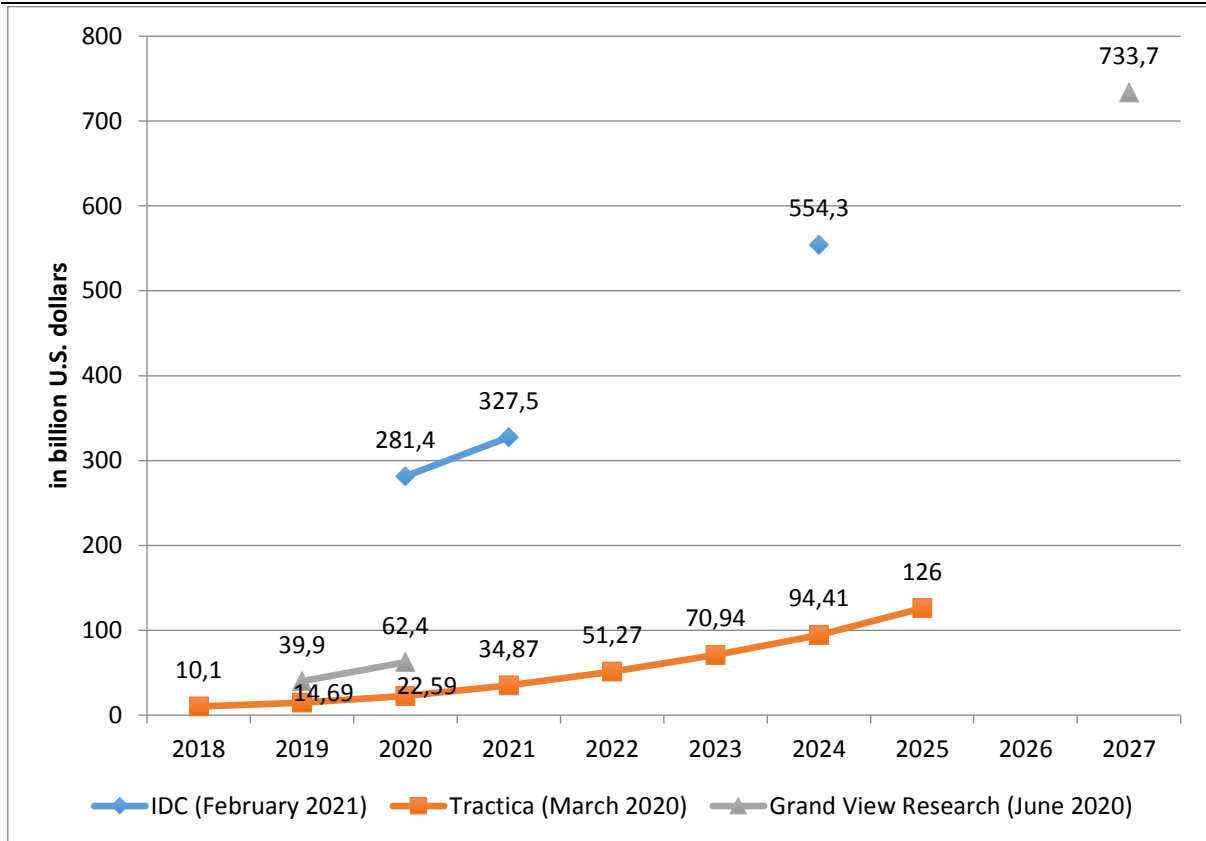


Figure 1. Market size and revenue comparison for artificial intelligence worldwide from 2018 to 2027 (in billion U.S. dollars)

Source: formed by the authors according to the data [7]

In fig. 2 shows the business expectations of the impact of artificial intelligence on the number of jobs.

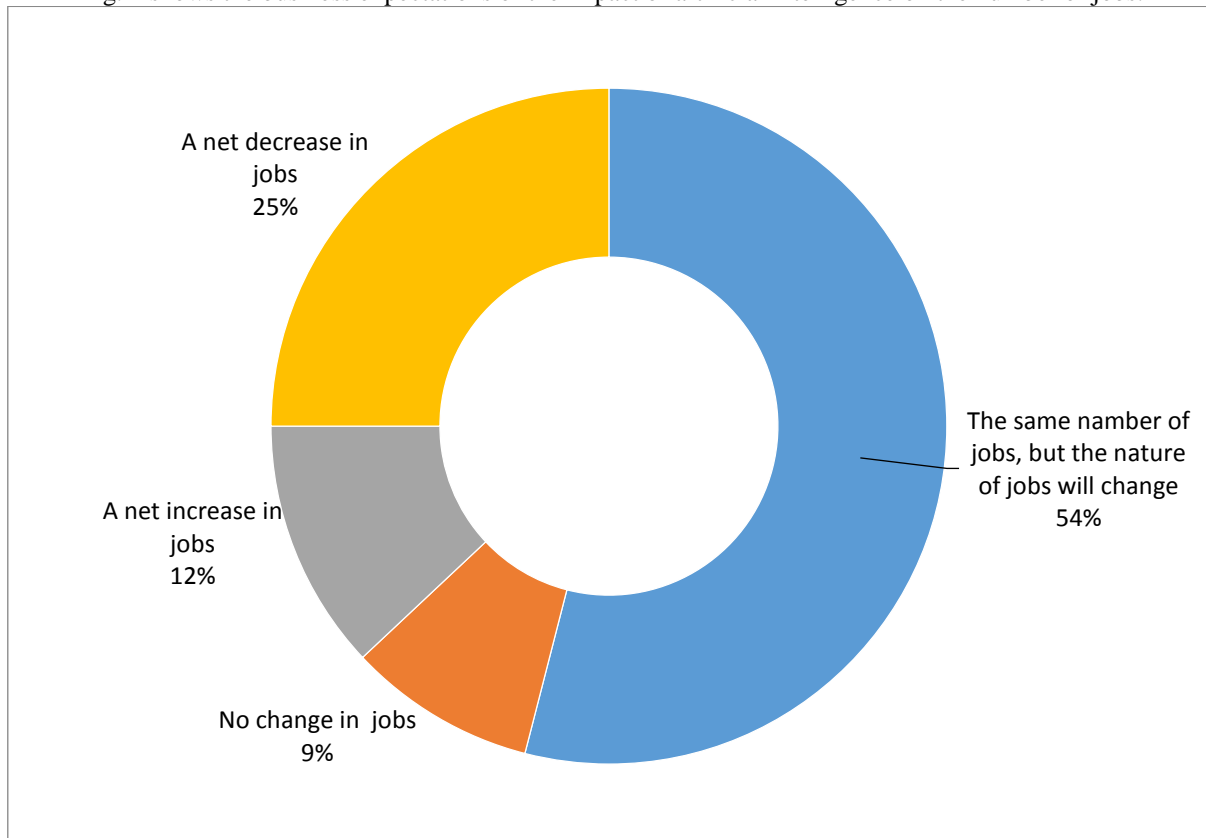


Figure 2. Global business and HR leaders on AI impact to job numbers in their organization 2020

Source: formed by the authors according to the data [7]

According to a 2020 report, 54% of surveyed business and staff leaders worldwide said that they expect artificial intelligence (AI) will have an impact on the nature of jobs in their organisation in the next three years, although the number of jobs will remain the same. Nearly 25 percent of respondents said that they expected that AI would lead to a net decrease in the number of jobs in their organizations in the next three years [7].

Georgi Todorov [8] predicts further development of artificial intelligence:

- The global AI market is predicted to snowball in the next few years, reaching a \$190.61 billion market value in 2025.
- The wearable AI market size is predicted to reach \$180 billion by 2025.
- The forecasted AI annual growth rate between 2020 and 2027 is 33.2%.
- The global AI chip market revenue is expected to reach \$83.25 billion by 2027.
- Between 2018 and 2025, the Asia-Pacific region will experience the highest compound annual growth rate.
- By 2030, China will be the world leader in AI technology, with 26.1% of the global market share.
- A lack of trained and experienced staff is an expected restriction in the AI market's growth.
- In 2019, the machine learning application industry received \$37 billion of funding in the U.S.
- By 2030, AI will lead to an estimated \$15.7 trillion, or 26% increase in global GDP.
- The \$15.7 trillion GDP estimated by 2030 will likely come from increased profitability (40%) and consumption (60%).
- A whopping 93% of automation technologists feel little prepared for upcoming challenges regarding smart machine technologies.
- The top three most significant challenges companies face when considering the implementation of AI are staff skills (56%), the fear of the unknown (42%), and finding a starting point (26%) [8].

In Ukraine, the order of the Cabinet of Ministers approved the Concept for the development of artificial intelligence in Ukraine until 2030 [9]. The purpose of the Concept is to determine the priority areas and main tasks of the development of artificial intelligence technologies to meet the rights and legitimate interests of individuals and legal entities, build a competitive national economy, improve the system of public administration. The concept defines the principles of development and use of artificial intelligence technologies, compliance with which fully complies with the principles of the Organization for Economic Cooperation and Development on artificial intelligence. Among them are:

- promoting inclusive growth, sustainable development and prosperity;

- developing and using of artificial intelligence systems only on condition that the rule of law, fundamental human and citizens' rights and freedoms, and democratic values are respected, and that appropriate safeguards are in place when using such technology;

- compliance of the activity and algorithm of solutions of artificial intelligence systems with the requirements of the legislation on personal data protection, as well as observance of the constitutional right of everyone to not interfere in personal and family life in connection with the processing of personal data;

- ensuring transparency and responsible disclosure of information about artificial intelligence systems;

- reliable and safe operation of artificial intelligence systems throughout their life cycle and implementation on an ongoing basis of their assessment and management of potential risks;

- placing on organizations and individuals who develop, implement or use artificial intelligence systems, responsibility for their proper functioning in accordance with these principles [9].

The priority areas for the implementation of the Concept are:

- occupation of a significant segment of the world market of artificial intelligence technologies and leading positions in international rankings (AI Readiness Index by Oxford Insights, AI Index by Stanford University, etc.);

- creating conditions for participation in the activities of international organizations and the implementation of initiatives for the formation of strategies for the development, regulation and standardization of artificial intelligence;

- introduction of artificial intelligence technologies in the field of education, economy, public administration, cybersecurity, defense and other areas to ensure long-term competitiveness of Ukraine in the international market;

- providing access to information (databases, electronic registers, etc.), its use in the development of artificial intelligence technologies for the production of goods and services;

- promoting the dissemination of research results in the field of artificial intelligence and improving their quality;

- raising the level of professional training of specialists to provide the field of artificial intelligence technologies with qualified personnel;

- protection of information space from unauthorized interference, ensuring safe operation of information and telecommunication systems;

- increasing the level of public safety through the use of artificial intelligence technologies in the development of measures for the re-socialization of convicts and the risk of re-offending;

- bringing legislation in the field of artificial intelligence technologies in line with international regulations [9].

Areas of practical application of artificial intelligence in modern conditions are shown in table 1.

Table 1

**Areas of practical application of artificial intelligence in modern conditions**

Areas of practical application	Characteristic
Machine learning	Automates the construction of the analytical model, collects, analyzes and uses statistics. Thus, it forms an idea of certain situations and how to solve them in different areas of human activity
Neural network	One of the types of machine learning needed to establish the right connection to correct tasks or make the right decisions in advance in appropriate situations
Deep learning	Able to build multi-level neural networks, which allows you to take advantage of computing power and advanced learning methods to handle more complex models with larger data sets
Cognitive calculations	Cognitive computing is used to simulate processes. On the example of a person who first interprets the image and language, and then can speak and perform certain actions independently.
Computer vision	Machines are able to recognize images and study what is happening in an image or video. This option allows machines to independently process and analyze video or images and offer their own solutions for processing and using the material
Proof of theorems	In the development of artificial intelligence an important role was played by the study of methods for proving theorems. Many different problems use the same methodological approaches used in the proof of theorems. In this case, the proof of the theorem includes not only the deduction based on hypotheses, but also the creation of intuitive assumptions about what must be proved to confirm the theorem
Image recognition	The developer of the system forms a list of features on which the quality of recognition depends a lot. The essence of recognition is to a priori obtain the feature vector for the selected individual object, and then based on the list of features, determining which of the figures corresponds to this feature vector
Machine translation and understanding of human language	Based on the semantic model of text representation, a language for internal representation of knowledge has been created. Therefore, today the systems analyze phrases and texts in the following stages: morphological, syntactic, semantic and pragmatic analysis
Game programs	One example is learning the system of chess. In chess, there are several levels of difficulty that reflect the quality of the game system and identify clear criteria for assessing the intellectual growth of the system
Machine creativity	Software systems capable of independently creating music, poems, stories, articles, diplomas and even dissertations. Additionally, many music applications have been created: sound processing systems, sound synthesis, interactive composition systems, algorithmic composition programs.
Expert systems	Used in science, business, technology, manufacturing and other areas where there is a well-defined subject area. The condition for the effective operation of such a system is the existence of an algorithm in a particular subject area

Source: [10]

The most common uses of artificial intelligence in business are shown in Fig. 3.

Artificial intelligence in business
<ul style="list-style-type: none"> <li>• Smart spam filters</li> <li>• Intellectual classification by e-mail</li> <li>• Voice text and speech recognition technologies</li> <li>• Smart personal assistants – Siri, Cortana and Google Now</li> <li>• Automated respondents and online customer support</li> <li>• Automate online audience filtering processes, lead sampling and intellectual chat</li> <li>• Automation of processes of registration of orders and sales</li> <li>• Smart Business Forecasting</li> <li>• Security control and smart authentication systems</li> <li>• Smart devices and applications that adapt to customer requests and interests</li> <li>• Automated analytical and forecasting systems that ensure the efficiency of various financial services</li> </ul>

Figure 3. The use of artificial intelligence in business management

Source: summarized by the authors for [11]

AI is a dual-use area of technology. Artificial intelligence systems and knowledge of how their design can be set aside for both civilian and military purposes, as well as more broadly, in favor of useful and harmful purposes. Because some tasks that require intelligence are benign and others are not, artificial intelligence is a dual use in the same sense as human intelligence. It may not be possible for AI researchers to simply avoid producing research and systems that may be aimed at harmful targets (although in some cases special caution may be exercised based on the nature of the particular study in question:

- Interventions. Many tasks that it would be beneficial to automate are themselves dual-use. For example, systems that examine software for vulnerabilities have both offensive and defensive applications, and the difference between the capabilities of an autonomous drone used to deliver packages and the capabilities of an autonomous drone used to deliver explosives need not be very great. In addition, foundational research that aims to increase our understanding of AI, its capabilities and our degree of control over it, appears to be inherently dual-use in nature.

As AI capabilities become more powerful and widespread, we expect the growing use of AI systems to lead to the following changes in the landscape of threats:

- Expansion of existing threats. The costs of attacks may be lowered by the scalable use of AI systems to complete tasks that would ordinarily require human labor, intelligence and expertise. A natural effect would be to expand the set of actors who can carry out particular attacks, the rate at which they can carry out these attacks, and the set of potential targets.

- Introduction of new threats. New attacks may arise through the use of AI systems to complete tasks that would be otherwise impractical for humans. In addition, malicious actors may exploit the vulnerabilities of AI systems deployed by defenders.

- Change to the typical character of threats. We believe there is reason to expect attacks enabled by the growing use of AI to be especially effective, finely targeted, difficult to attribute, and likely to exploit vulnerabilities in AI systems [12].

Most researchers agree that a superintelligent AI is unlikely to exhibit human emotions like love or hate, and that there is no reason to expect AI to become intentionally benevolent or malevolent. Instead, when considering how AI might become a risk, experts think two scenarios most likely:

1. The AI is programmed to do something devastating: Autonomous weapons are artificial intelligence systems that are programmed to kill. In the hands of the wrong person, these weapons could easily cause mass casualties. Moreover, an AI arms race could inadvertently lead to an AI war that also results in mass casualties. To avoid being thwarted by the enemy, these weapons would be designed to be extremely difficult to simply “turn off,” so humans could plausibly lose control of such a situation. This risk is one that’s present even with narrow AI, but grows as levels of AI intelligence and autonomy increase.

2. The AI is programmed to do something beneficial, but it develops a destructive method for achieving its goal: This can happen whenever we fail to fully align the AI’s goals with ours, which is strikingly difficult. If you ask an obedient intelligent car to take you to the airport as fast as possible, it might get you there chased by helicopters and covered in vomit, doing not what you wanted but literally what you asked for. If a superintelligent system is tasked with a ambitious geoengineering project, it might wreak havoc with our ecosystem as a side effect, and view human attempts to stop it as a threat to be met.

As these examples illustrate, the concern about advanced AI isn’t malevolence but competence. A superintelligent AI will be extremely good at accomplishing its goals, and if those goals aren’t aligned with ours, we have a problem. You’re probably not an evil ant-hater who steps on ants out of malice, but if you’re in charge of a hydroelectric green energy project and there’s an anthill in the region to be flooded, too bad for the ants. A key goal of AI safety research is to never place humanity in the position of those ants [13].

In fig. 4 shows the main threats to the use of artificial intelligence.

## The main threats to artificial intelligence

Unemployment rising  
 Preservation of socio-economic inequality between different segments of the population and nations in the world  
 Algorithmic bias  
 Violation of privacy  
 Loss of a person's sense of uniqueness  
 Manipulation of people  
 Deepfakes  
 Global armed conflicts

Figure 4. The main threats to artificial intelligence

Source: systematized by the authors

At the same time, it is necessary to highlight the significant advantages of using artificial intelligence systems in business (Fig. 5).

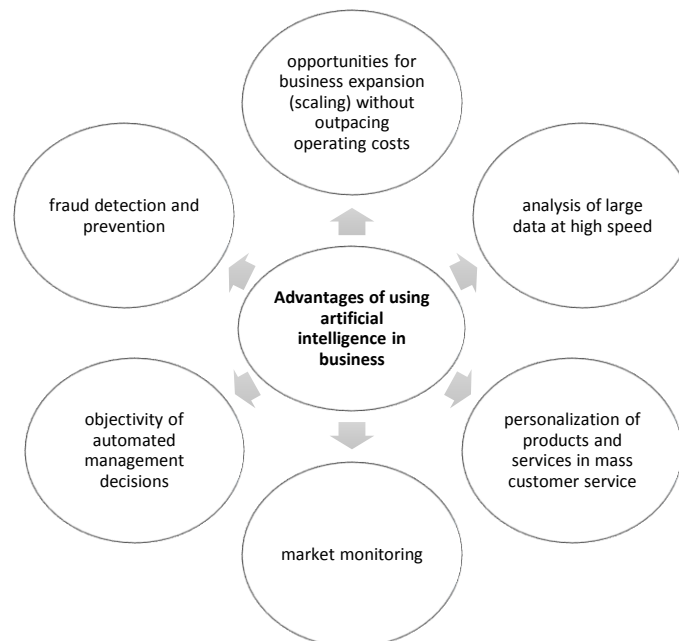


Fig. 5. Advantages of using artificial intelligence systems in business

Source: systematized by the authors

Gartner experts believe that in the coming years, leading data and analytics companies will need to pay increasing attention to the impact of AI on business process transformation, and they will work to make technology more flexible and software more versatile. All approaches need to be adjusted depending on changes in business models. This will help maintain competitiveness in any sector of the economy.

The task of technical professionals today is to understand technological trends and prioritize based on the needs and values of the business. The most common problem in working with foreign investment and ana-

lytical applications is the problem of sorting, processing, storing and protecting data. It influences the growing popularity of the use of intelligent software and creates unprecedented conditions for the development of new opportunities. Developers are actively working on more advanced methods of data processing, as well as advanced functionality of cloud services and applications. This task aims to create learning opportunities for AI, using the maximum amount of data [14].

Gartner highlights the main trends of the year in the development of machine learning and artificial intelligence.

1. Advanced analytics. Extended analytics is expected to become the dominant factor for business forecasting and data processing based on ML platforms in the next decade. And one of the top specialties of the future will be a data specialist and business analyst.

2. Data management. It means not only data management, but also their quality, integration and development of data management systems. It is used to automate manual tasks and to increase productivity in existing processes. Thanks to high-quality automation, even employees without technical skills will be autonomous and will be able to use special analytical platforms for their tasks. It is expected that by the end of 2022, manual data management tasks will be reduced by 45% due to ML and automation.

3. Universal AI. It is expected that by 2022, about half of large new business systems will use universal artificial intelligence that uses real-time contextual data. This AI automates the most complex data for a person and ensures the implementation of solutions through advanced analytics.

4. Explanatory AI. Works on ML platforms, automatically generates explanations of business models and business functionality in the most accessible, intuitive language.

5. Graphic analytics. In a few years, all companies using modern technology will use this tool. It is a set of solutions that examines the relationship between data and objects that are of interest to a particular business process.

6. Data Fabric. Allows access and exchange of data in a distributed environment, therefore, to form a single data management structure that provides access and processing.

7. Conversational analytics / NLP. Technology analyzes complex data and conducts analytics, focusing on the specifics of the business. It is expected that in the next few years, 50% of analytical queries will be generated using NLP.

8. Commercial AI and ML. In the coming years, about 75% of AI and ML-based implementations will be created not as commercial solutions, but as a product of open source platforms. The software will become more accessible and «transparent», but also more secure.

9. Blockchain. Blockchains cannot replace existing data management technologies, but the demand for them will grow due to the easy integration of this technology (even with a fairly high cost of the integration process).

10. RAM servers. Reduce costs and neutralize the complexity of implementing digital architectures with IMC support. Non-volatile memory is a new level of memory between DRAM and NAND flash memory for high-performance workloads. The technology speeds up the availability and download time of programs, but at the same time is not prohibitively expensive.

The introduction of artificial intelligence is not just accelerating, it is becoming critical. And companies still lack experience in implementing industrial AI, and in the meantime, the issue of its implementation will actually be a matter of business survival. This is a

new industry category that will become mandatory in the future [14].

The company's specialists Everest [14] are the following factors that ultimately lead to a wider recognition of the category AI and industrial implementation of this technology in the current year:

1. Growing attention to industry challenges. In capital-intensive industries, more and more money has recently been invested in platforms and tools for artificial intelligence and machine learning, which allows the creation of new usage scenarios and applications based on AI. But these investments have not yet led to significant results for business, especially for industrial organizations. The main shift in the new year for organizations is that they will understand how AI can be used to solve industry-related problems.

2. Lowering the barrier to AI implementation. The lack of experience in artificial intelligence and in-house data skills among industrial organizations has long been one of the most serious obstacles to the wider introduction of industrial AI. The situation will change in 2021, as more and more companies deploy targeted embedded industrial AI applications that combine data science and AI with special software.

3. The ratio of data values and data volume. The average enterprise does not use 60% to 73% of the data collected. Companies, especially in capital-intensive industries, will need to move from mass data collection to more strategic industrial data, data integration, mobility and business-wide accessibility.

4. Productivity growth in capital-intensive industries. The biggest factor in the growth of industrial AI will be its impact on productivity. Industrial AI allows the implementation of next-generation solutions without relying on large-scale experience in data science. In practice, this will be expressed in the process of creating semi-autonomous and autonomous processes for collecting, aggregating and processing data in real time, and then their introduction into intelligent programs [14].

**Conclusions.** Today, artificial intelligence is actively developing, penetrating into all spheres of public life. Modern trends in the development of artificial intelligence allow the use of its technologies in various fields, not only by corporate or high-tech companies, but also in medium, small business, social, inclusive projects, everyday life. Doing business in the digital economy using artificial intelligence systems will allow you to expand your business (scaling) without outpacing operating costs, perform big data analysis at high speed, personalize products and services in mass customer service, monitor market conditions, increase the objectivity of accepted automated management decisions, detect and prevent fraud in business.

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