



## Higher School of Social and Economic in Przeworsk



MONOGRAPH

# Modern management technologies

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**MODERN MANAGEMENT  
TECHNOLOGIES**

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## INTRODUCTION

The analysis of modern management concepts indicates the need to implement approaches and principles ensuring the integrity of the research object as the social, ecological, and economic system, which is a separate enterprise or region. Such approach allow to consider issues as complex at each level and identifying risks, making forecasts regarding changes in the environment, evaluating opportunities for development and ensuring an acceptable life quality for people, the human development level in terms of natural resource and environmental limitations and other local and global challenges.

Currently, the need to accumulate human intellectual efforts is becoming more and more obvious. It forms a new paradigm of its existence in the conditions of non-antagonistic self-development and coexistence with the surrounding world, economic interests' subordination to interests of ecological expediency and social responsibility.

Therefore, it is necessary to form a new management paradigm with worldview level emphasis and basic values that combine environmental, economic, social, and political aspects.

This monograph based on the authors research results, which developing the ideas of the sustainable development transition necessary, and basics of a green economy and a socially oriented market economy.

The presented materials have both applied (theoretical and methodological) and didactic value, as they demonstrate the implementation conditions and features of effective management's tools and methods to solve urgent development problems of enterprises, activity spheres and territories. Therefore, it will be essential and useful for enterprises' managers, local self-government bodies, scientists and university students.

*Larysa Cherchyk*

## **CHAPTER 1**

# **SUSTAINABILITY MANAGEMENT:**

**RESPONSIBILITY,**

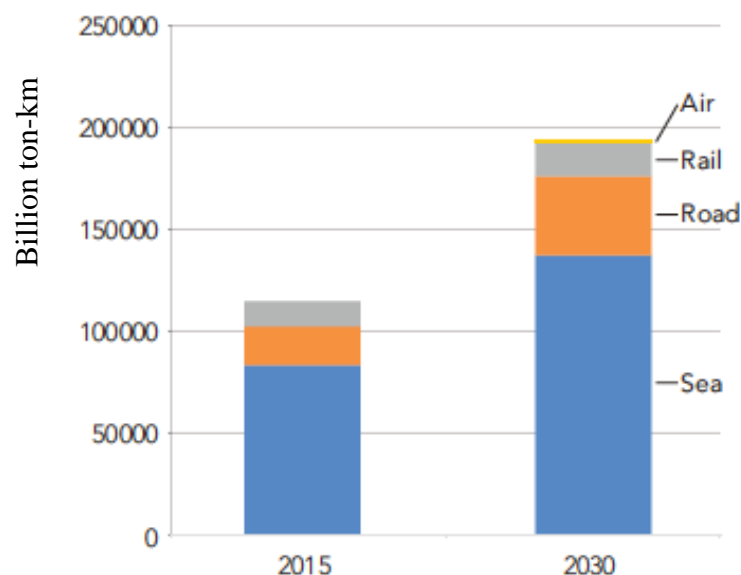
**EFFECTIVENESS**

**AND MULTI-WIN SOLUTIONS**

## 1.1. THE CONCEPT OF MECHANISMS FOR TRANSPORT AND LOGISTICS SYSTEMS MANAGEMENT ON THE BASIS OF SUSTAINABLE DEVELOPMENT

### *1. Threats and risks of providing transport services in the direction of sustainable development*

Transport is an important component of economic and social development. Until today, the global growth of the transport component on a global scale occurred in parallel with the increase in greenhouse gas emissions. The consequence of the use of traditional transportation technologies and classic types of transport rolling stock is significant volumes of carbon dioxide, which makes the transport sector key in these problems, contributes to global anthropogenic climate changes.



Pic. 1.1. World volumes of cargo transportation

*Source: (ITF, 2021).*

By 2030, annual passenger traffic will reach 80 billion passenger-km, i.e. a 50% increase. Freight transportation will reach 70% and, in addition, by 2050, there will be 1.2 billion cars on the road – doubling from today's figures (see pic. 1.1, 1.2) (ITF, 2021). Such trends, in turn, have a significant impact on the state of the environment.

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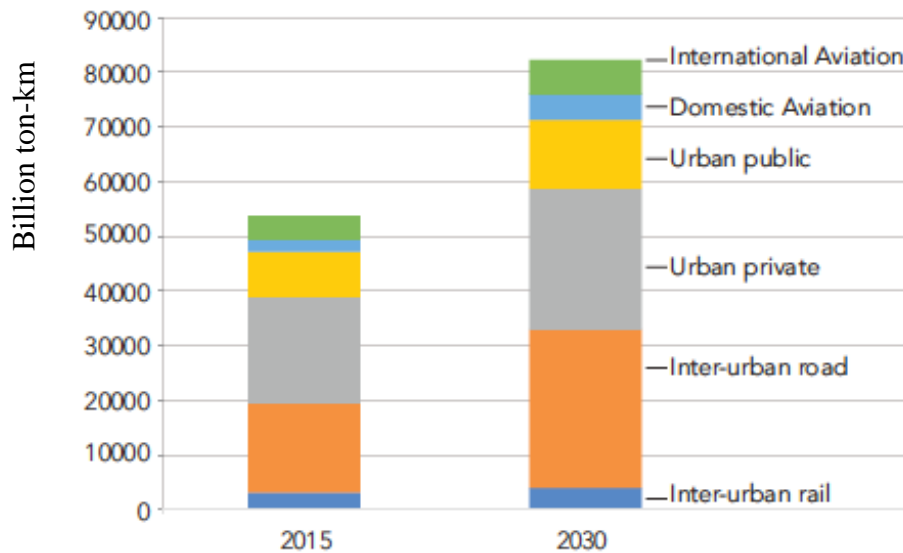
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Indeed, over the past decade, greenhouse gas emissions from the transportation sector have grown faster than emissions from any other sector of the economy. Therefore, in order to fundamentally solve the problems of global climate change, there is an urgent need to transform transport policy and the practice of functioning and management of the transport sphere around the world.

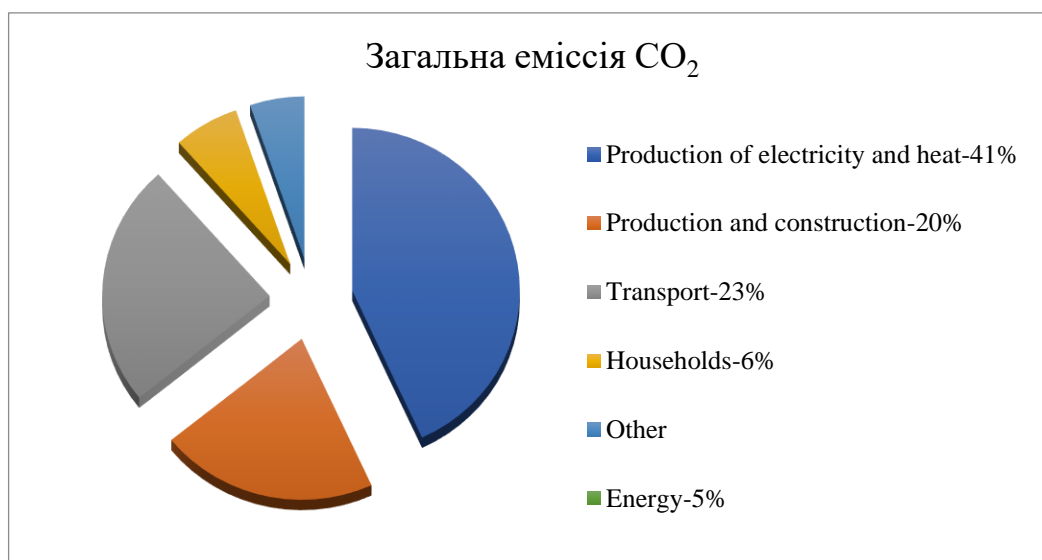


Pic. 1.2. World volumes of passenger transportation  
*Source: (ITF, 2021).*

At the international level, for this purpose, the Global Environment Facility (GEF) (GEF, 2021) was formed, which works on the development of projects of sustainable transport, environmental protection, economic growth and energy security. The Fund is an independent financial mechanism for providing developing countries with grants for the implementation of projects, the results of which make it possible to positively influence the state of the global external environment, unites 182 countries, supports partnership relations with international institutions, non-governmental organizations, local communities, as well as with private sector, with the aim of solving global environmental problems and supporting national initiatives (for 25 years of existence, allocated 9.2 billion US dollars of its own funds and attracted more than 40 billion US dollars in order to co-finance more than 2,600 projects in developing countries and in countries with transition economies). Only in the previous year, the GEF financed 50 projects related to the development of urban transport in 43 countries around the world, the analysis of the results of which led to the conclusion that these projects had a direct impact on reducing greenhouse gas emissions and, at the same time, on increasing the profitability of transport enterprises.

According to the International Energy Agency, the amount of CO<sub>2</sub> emissions from the work of the transport sector is estimated at 6.5 gigatons per year, or 23% of the

world's energy consumption. Road transport accounts for  $\frac{3}{4}$  of the total transport volumes of CO<sub>2</sub> (pic. 1.3.).



Pic. 1.3. Global CO<sub>2</sub> emissions from fossil fuel combustion (by types of pollution sources)

This is due to the growth of the car fleet, especially and primarily in developing countries. An analytical report from the Council for Sustainable Development (WBCSD/SMP) highlights that the number of passenger vehicles worldwide will grow to approximately 1.3 billion units by 2030, and to more than 2 billion units by 2050, nearly tripling exceeds the current level. The peculiarity is that almost all the increase will be in developing countries. Based on this, the demand for oil (excluding biofuels) is projected to grow from 87 million barrels per day (MBPD-2010) to 99 MBPD in 2035. All of the net increase in oil demand is in the transport sector in developing countries, where economic growth is driving demand for personal mobility and freight transport.

This trend is associated with rapid urbanization throughout the territory – 75% of the population of industrialized countries and 40% of the population of developing countries live in cities (according to the Intergovernmental Panel on Climate Change Assessment – IPCC). At the same time, it is necessary to take into account the current stable trends in the number of urban populations, which are growing faster than they were growing before.

Decentralization contributes to the growth of demand for access to transport. According to UN estimates, every 7 out of 10 people in the world will live in urban areas by the middle of this century. Economic growth and urbanization increase demand, so the supply of transport services will also need to increase to meet these demands. Therefore, given current trends, energy consumption in transport and,

accordingly, CO<sub>2</sub> equivalent in emissions will increase by almost 50% by 2030 and by more than 80% by 2050 (according to the IEA). Such trends require the search for innovative new approaches to prevent negative phenomena.

This is, first of all, the improvement of vehicle designs, fuel quality and the implementation of state policy in this direction. The technologies needed in the transport sector should include the improvement of vehicles to reduce the amount of greenhouse gas emissions, the production/use of high-efficiency engines, the production and use of biofuels, the modernization of transport infrastructure, the improvement/construction of roads and railways, the use of geographic information systems and traffic management systems. In general, there are three ways to solve the problems of growing greenhouse gas volumes: 1) reducing the number of road trips, 2) switching traffic to a more efficient mode of transportation, 3) improving the energy efficiency of car traffic.

The first, the reduction of demand for road transport, carried out through better spatial planning of cities, introduction of price mechanisms, for instance, in relation to parking. Thus, in the long term, local clusters of economic activity should be less in need of private mobility, as planning will reduce: - traffic congestion, - fuel consumption, - infrastructure maintenance and renewal costs.

The second way, the transition to a more efficient mode of movement of vehicles. Greenhouse gas emissions can be reduced by offering efficient and optimized public transportation, integrating transit with efficient land use, increasing the use of non-motorized transportation such as walking and cycling, and encouraging mini and electric vehicles. Based on global experience, bus rapid transit (BRT) with exclusive right-of-way use is becoming more common, which can be seen as a cost-effective complement to light rail transit (LRT) – high-speed tram, and as an improvement over conventional bus combination. In addition to reducing harmful transport emissions, public transport such as BRT has the social benefit of increasing the level of mobility of people without access to cars.

The transport demand management mechanism can also be interesting, thanks to the use of which the control of traffic volumes is carried out, which contributes to the productivity of transport traffic and reduces too much dependence on the use of road transport for the population.

Third, increasing the energy efficiency of travel could “mitigate” carbon emissions by up to 50% by 2030, compared to current travel patterns. As the demand for vehicles and transport travel is predicted to increase in the coming decades, the implementation of the presented mechanisms is crucial. Therefore, the volume of total emissions will depend on whether the requirements for energy efficiency in transport will be met, or whether the population will continue to exploit used cars with internal combustion engines. In the medium to long term, electric and fuel cells can play an

important role in these efforts, although their market penetration is currently not high. From the point of view of the state mechanism for regulating the type of fuel, the use of tax mechanisms for such cars and the provision of certain grants and awards to users and vehicle owners can be effective for the promotion of high-efficiency cars. Changes in driving practices are important, where the use of green driving strategies, better maintenance, the use of high-tech in-car aids, more efficient tire changes, reduced idling, better traffic management and routing can improve the environmental efficiency of transportation by 5–20%

The use of emission reduction mechanisms covers a wide range of possible options for mitigating the consequences of inefficient impacts from the functioning of the transport sector. However, the best choice of certain mechanisms depends on the technological structure of the economy, geography, natural resources, political conditions and many other factors. The local economy, geography, population and culture influence the feasibility and effectiveness of each of the options for measures. Each strategy and related measures should be developed or supplemented taking into account local conditions, carefully assessing the existing situation and carrying out consultations with relevant stakeholders. It is also important to support new measures with appropriate legal conditions, educational programs for the population, and the development of public information campaigns. In addition to reducing greenhouse gas emissions, these changes will also provide other benefits, including reducing local air pollutants, easing traffic congestion, improving access to vehicles, reducing noise, accidents and efficient transport modes. By addressing these challenges concurrently with efforts to struggle against climate change, these measures can be mutually integrated, potentially offering both reduced costs and risks to public health and the quality of local ecosystems. For instant, the Institute for Global Environmental Strategies (IGES) estimated that a 1 tonne reduction in CO<sub>2</sub> emissions from the construction of Bus Rapid Transit (BRT lines) is accompanied by a reduction of 5.8 tonnes of nitrogen oxides (NO<sub>x</sub>) and 1.5 tonnes of particulate matter (IGES, 2011). Measures taken to reduce greenhouse gas emissions from the transport sector can also contribute to the country's economic growth and energy security.

The sustainable development of transport and the level of its use are essential factors in achieving the goals of sustainable development (17), introduced by the UN. From the entire list of goals, two are dedicated exclusively to solving transport problems: № 11 – ensuring access to a safe, affordable, economically attractive, reliable transport system for all segments of the population, improving road safety, significantly increasing the share of public transport use with the possibility of using it the most vulnerable sections of the population, children and women, persons with disabilities and the elderly; № 9 is also related to transport and is aimed at the development of quality, sustainable, reliable and safe infrastructure, including regional

and cross-border infrastructure, supporting economic development and the quality of life of the population, reliable and fair access to it. The results of the right decisions when implementing such opportunities are limitless. For instant, increasing the level of road safety and reducing atmospheric air pollution, carbon pollution of about 7 gigatons should save hundreds of thousands of human lives annually (Energy Technology Perspectives, 2017). Analyzing total transportation costs, including vehicles, fuel, operating costs, congestion losses, etc., a sustainable transportation sector will save \$70 billion by 2050 (Policy Pathway, 2013). Moreover, improvements in cross-border administration, transport and communication infrastructure could raise global GDP by up to \$2.6 billion, or 4.7% (WEF, 2013).

The analysis of trends in the development of transport on an international scale indicates the following:

- in 2014, 54% of the world's population lived in rural areas. Their share may increase to 60% by 2030, and to 66% by 2050 (UN, DESA, 2014). Transport of the appropriate level of quality and accessibility remains unavailable to a large stratum of the world's population, with an uncontrolled increase in the discrepancy of communications between the places of residence of the population and their work or receiving services.

- developing countries spend 40–70% more on international trade per dollar of imports.

- the average volume of international trade is 60% of the total for continental developing countries compared to countries with access to a sea coast. The main problem in carrying out trade in these countries is transit through the territories of other countries.

- from 70 to 84% of fuel energy is wasted from use in inefficient internal combustion engines.

- in 2009, transport accounted for 23% of fossil fuel-related greenhouse gas emissions, and its share is growing. According to forecasts (IEA, 2021), CO<sub>2</sub> emissions related to transport operations may increase to 40% by 2040 – approximately 1.2% per year, using current transport development scenarios.

- today, less than 18% of the world's population uses air transport. The study (Analysis, 2016) predicts that the need for this type of transport will double in the coming decades, in turn increasing the carbon load on the atmospheric air. According to (Analysis, 2016), carbon emissions from aviation use could account for more than 25% of the final global carbon budget by 2050 (to keep global temperature rise below 1.50 above pre-industrial levels).

## *II. The essence and conceptual scheme of the mechanism for managing activities in urban transport*

The tasks of high-quality, reliable, sustainable and sustainable development of the rolling stock of transport and transport infrastructure set by the goals of sustainable development are divided into several groups, for each of which a series of measures, tools, mechanisms for the implementation and management of environmental protection activities, indicators for evaluating the results of the introduction of preventive actions must be formed, quality monitoring system for the consistent implementation of measures to influence the functioning of transport on the basis of "green" growth.

The UN Commission on Environmental Protection understands the concept of "green" economy in a broad economic, social and environmental context. The proposed approach should provide precautionary measures to avoid a global crisis. At the G7 meeting in July 2019, the UN Secretary General presented a report on the extraordinary climate situation in the world, emissions of tens of megatons of carbon dioxide due to a large number of fires, and the achievement of the highest level of concentration of carbon dioxide in the atmosphere in the entire history of mankind.

Research conducted by international organizations concluded that the transition to a "green" economy should be based on three principles (Bayzakov, Mukhanov, 2013):

- improvement of resource productivity, as a defining economic indicator that demonstrates the state's ability to create added value with a minimal burden on the environment;

- responsibility for the use of resources, which implies the responsibility of all levels – state, business and population, the measurement of which is implemented by monitoring and controlling the sustainable use of resources and the state of the environment;

- modernization of the economy using the most effective technologies.

In our opinion, the implementation of these principles should correspond to the tasks of sustainable development in the context of their application in the work of the national transport complex. In turn, for the sake of successful implementation and transparency of implementation, these tasks must be correlated with the main functions of transport management – analysis, forecasting, organization, coordination, motivation and control in the direction of ensuring the target model of organization and management of the transport system. That is, it is important to supplement the listed list with additional principles that will be decisive in the formation of mechanisms and tools for managing the transport system in the context of sustainability and "green" growth:

- the rule of law and the protection of human rights, by observing a transparent, accountable and democratic procedure for the adoption of laws and their implementation, ensuring the equality before the law of all natural and legal persons, as well as institutions;

- the consistency of ensuring processes of interaction and mutual coordination of environmental protection activities with the traditional functions of enterprises of the transport complex of Ukraine;

- science – through the formation of the management and production system and the principles of innovation;

- effectiveness – since any environmental protection activity requires additional resources, it is important to find the optimum in the adjustment of useful and unprofitable;

- responsibility of both the management staff for the results of their decisions, and the population for the ability to perceive these decisions and the ability to implement them;

- social responsibility to the society for certain actions or inaction regarding the prevention of environmental disasters or the deterioration of the quality of population life;

- combination of interests and activities of private companies with state structures in the context of environmental protection activities in transport;

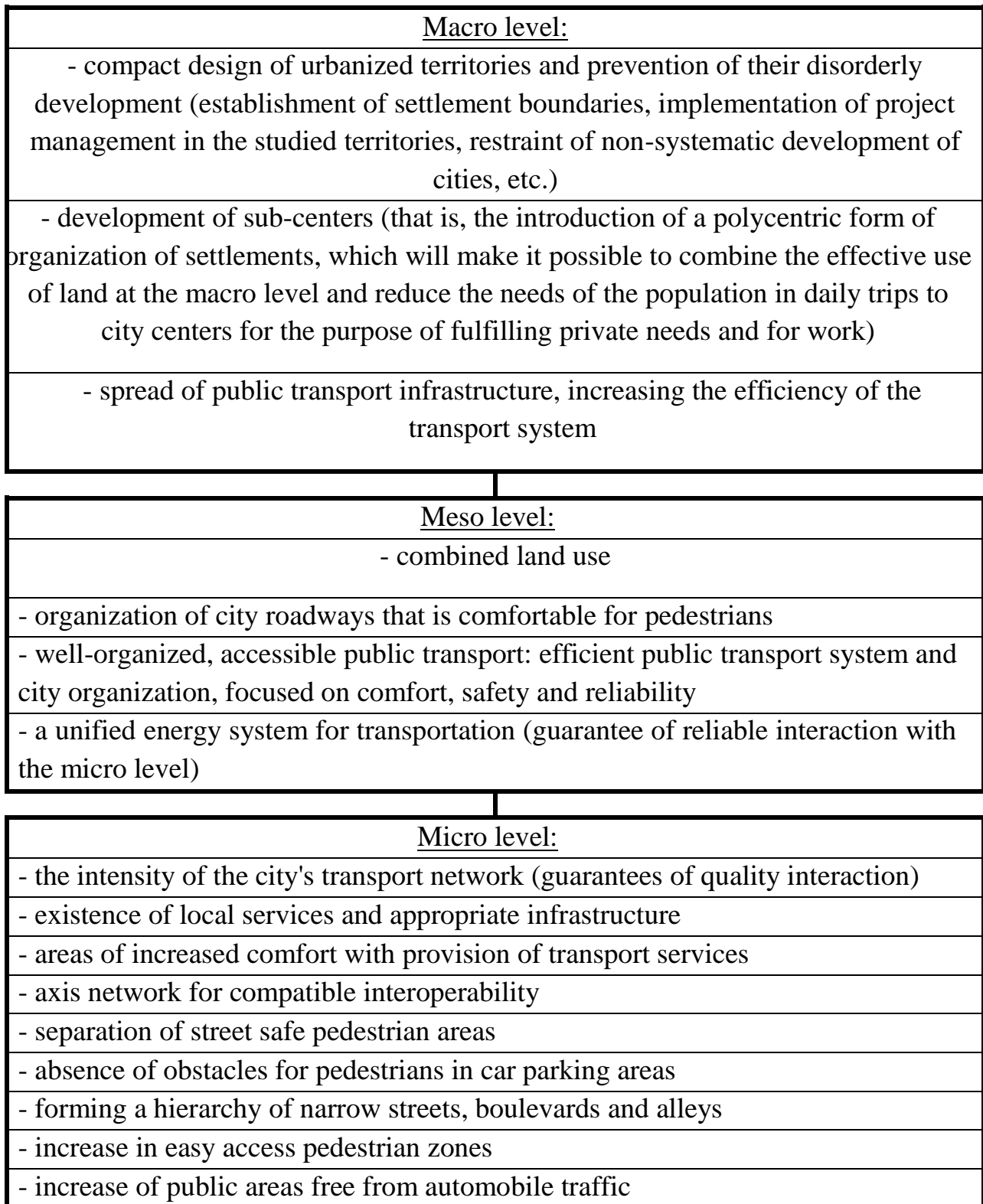
- establishing the priority of the environmental safety of the transport complex over the economic interests of the management object;

- adaptability to the requirements of the international community, national leadership, and local communities in the event of an urgent need in the case of a persistently deteriorating environmental situation;

- transport globalization through the implementation of international requirements, co-financing of joint projects for the development of ecologically clean transport systems, participation in interstate projects;

- of the "polluter pays" principle – to establish certain contributions to the perpetrator of environmental pollution or damage to the population in the amount of full compensation for the incurred losses with the imposition of the obligation to target the received fees for the restoration of ecosystems or the protection of human health.

It is also important to implement these principles on a three-level basis (see pic. 2.1.).



Pic. 2.1. Conceptual scheme of responsibility of state-level institutions

Taking into account the priorities defined by the European Union (White Paper Roadmap, 2011), which are decisive and priorities for Ukraine, as its associate member Taking into account the priorities defined by the European Union (White



Paper Roadmap, 2011), which are also decisive for Ukraine, as its associate member, the issues of reducing the number of inefficiency zones and overcoming other barriers to the modern development of transport systems become priorities. This program document quantifies the volume of greenhouse gas reduction on a global scale in order to limit climate change to a maximum of 2<sup>0</sup> C. Namely, by 2050, to reduce the volume of their emissions in transport by at least 60% compared to the level of 1990.

We will analyze the current state of the environment in Ukraine and the level of influence of mobile sources on the formation of atmospheric air quality - we will form the data (see table 2.1):

Table 2.1 demonstrate that over the past four years, the emissions of the most aggressive pollutants have been gradually reduced both cumulatively and relative to the base year (these years were chosen on the basis of changes in the statistical data of the State Committee of Statistics of Ukraine, which in previous years took into account different types of transport in the total volume of emissions pollutants, and since 2015 only data on road transport are used as emissions from mobile sources of pollution).

Table 2.1 indicates a reduction in the total volume of emissions in 2020 by more than 4 points from the indicator of 2018, which is the basis for optimistic forecasts.

*Table 2.1*

Pollutant emissions from mobile sources of pollution in Ukraine, tons \*

	2017	2018	2019	2020
Sulphur dioxide	16 336,1	16 579,6	16 908,1	17 623,3
Carbon monoxide	1 092 036,6	1 071 150,0	1 045 127,9	1 016 846,0
Nitrogen dioxide	152 882,6	152 613,3	153 827,2	156 907,0
Nitrous oxide	846,4	819,1	791,0	775,1
Non-methane light organic compounds	157 574,6	152 021,9	145 130,6	137 615,9
Ammonia	9,1	8,6	7,7	6,8
Methane	4 751,3	4 711,4	4 604,7	4 501,3
Soot	21 590,5	22 076,2	22 779,2	24 123,9
<i>Total:</i>	<i>1 446 027,2</i>	<i>1 419 980,1</i>	<i>1 389 176,4</i>	<i>1 358 399,9</i>
<i>chain growth rates:</i>	-	<i>-1,8%</i>	<i>-2,17%</i>	<i>-2,22%</i>
<i>basic growth rates:</i>	-	<i>-1,8%</i>	<i>-3,93%</i>	<i>-6,06%</i>

\* The data reflect emissions from the operation of road transport

Source: [Derzhkomstat Ukrainy, 2021]

Table 2.2. correct the previous conclusions, since the indicators of the reduction of the total volumes of pollutant emissions were formed, first of all, due to the reduction of the level of carbon monoxide, while the volumes of soot emissions – a product of incomplete combustion of hydrocarbon fossil fuels, which is extremely aggressive for both humans and the environment, as well as the volume of sulphur dioxide, or sulphurous gas, which is formed during the combustion of low-quality fuel, are growing at a steady pace – sulphur dioxide increased by 7.9% over four years, and the volume of soot – by 11.7% over the years under study. In pic. 2.2 and 2.3. present a graphic expression of these processes.

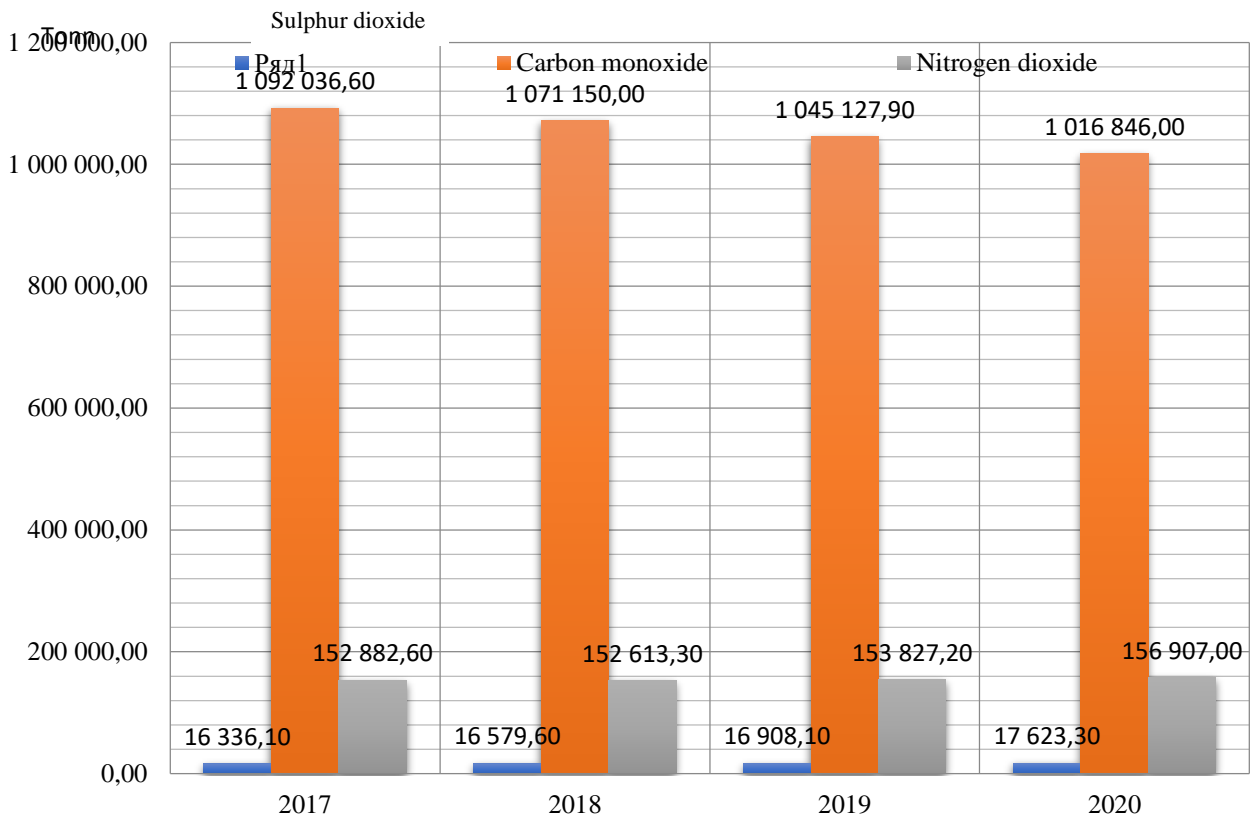
*Table 2.2*

Dynamics of changes in the volume of emissions of pollutants from mobile sources of pollution in Ukraine, % by year and by base year \*

	2017	2018	2019	2020
<i>Sulphur dioxide:</i>				
chain growth rate	-	1,5 %	2,0 %	4,2 %
basic growth rate	-	1,5 %	3,5 %	7,9 %
<i>Carbon monoxide:</i>				
chain growth rate	-	-1,9 %	-2,43 %	-2,7 %
basic growth rate	-	-1,9 %	-4,3 %	-6,9 %
<i>Nitrogen dioxide:</i>				
chain growth rate	-	-0,18 %	0,8 %	2,0 %
basic growth rate		-0,18 %	0,6 %	2,6 %
<i>Soot:</i>				
chain growth rate	-	2,25 %	3,2 %	5,9 %
basic growth rate	-	2,25 %	5,5 %	11,7 %

\* The data reflect the volume of emissions from the operation of road transport

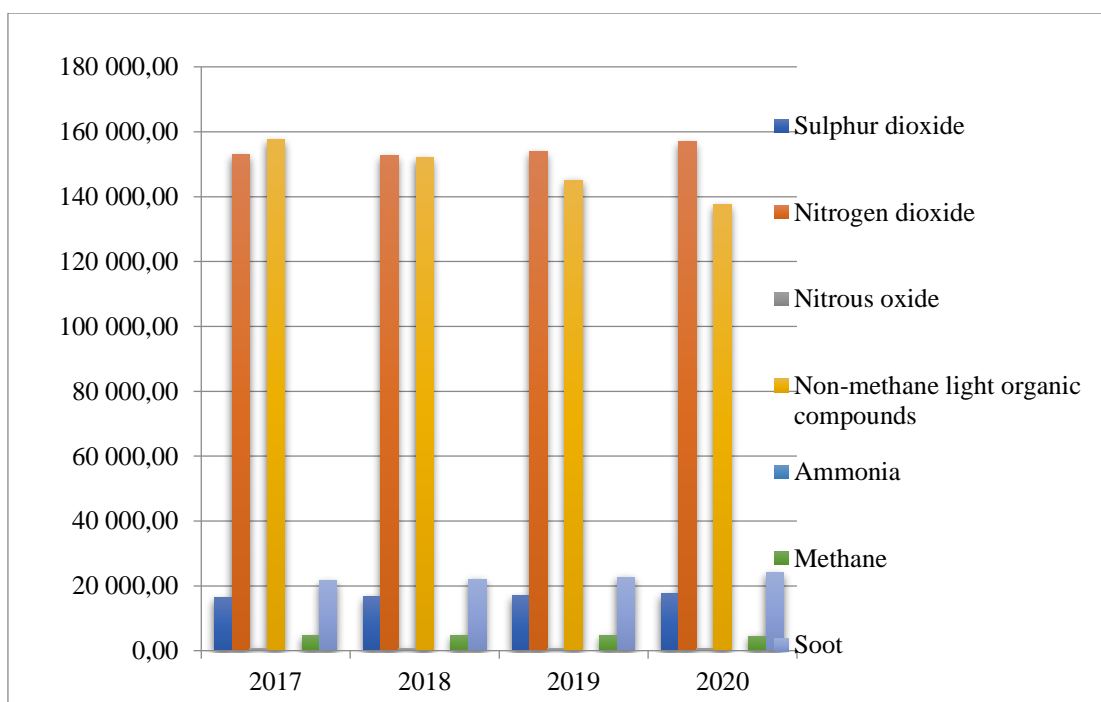
In the strategic plan for the single European transport zone, an important element of the EU economy, where about 10 million people are directly involved and the share in the volume of GDP is about 5% - in the direction of the competitive and resource-efficient transport system of the "White Paper" of the European Union, the main task is to weaken oil dependence of the transport system without damaging its efficiency and mobility.



Pic. 2.2. Dynamics of changes in the volumes of the main types of greenhouse gases from mobile sources in Ukraine over the years

That is, in practice, the transport system should become more ecological, consume less fuel, use modern infrastructure more efficiently, have a less aggressive impact on the environment and such basic resources as water, land and ecosystems.

EU Regulation № 443/2009 of the European Parliament and the Council of April 23, 2009, which establishes emission performance standards for new passenger cars within the framework of the Union's comprehensive approach to reducing CO<sub>2</sub> emissions from light-duty vehicles and EU Regulation № 333/2014 of the European Parliament and the Council dated 11.03.2014 on amendments to EU Regulation № 443/2009 in order to determine the conditions for achieving the 2020 goal of reducing CO<sub>2</sub> emissions from new passenger cars set sufficiently "tough" goals for reducing emissions with the establishment of target indicators as early as 2015.



Pic. 2.3. Dynamics of changes in the volume of pollutants from mobile sources in Ukraine over the years

More stringent targets will be applied from 2020 and 2021. On 04/17/2019, the European Parliament and the Council adopted EU Regulation № 2019/631, which sets CO<sub>2</sub> emission performance standards for new cars and new light commercial vehicles (vans) in the EU for the period after 2020. The new rules will be applied from 01.01.2020.

The requirements for CO<sub>2</sub> emissions indicators for new passenger cars should ensure the proper functioning of the internal market and achieve the overall goal of an average level of CO<sub>2</sub> emissions for the new car fleet. In these Rules, the average CO<sub>2</sub> emissions are set at 130 grams of CO<sub>2</sub>/km, through the improvement of vehicle engine technologies, which is measured in accordance with EU Regulation № 715/2007 and its measures on the introduction and innovative technologies. Starting from 2020, the current Regulations set a target of 95 grams of CO<sub>2</sub>/km as the average volume of emissions.

According to the European Environment Agency, which sets requirements for each country to provide information on new car registrations, which should include type, make, specific CO<sub>2</sub> emissions, vehicle weight, wheelbase, engine strength, fuel type, eco-innovation and electricity use, etc. Selectively in the table. 3 presents these data.

There are no statistical data on the volume of emissions, the type and power of the engines of cars registered in Ukraine.

On the agenda of the executive authorities of Ukraine is the development of a document to implement the provisions of Directive 1999/94/EU on providing timely and complete information to citizens about greenhouse gas emissions and the level of fuel use by new passenger cars, establishing rules for labeling new cars with fuel-saving signs, establishing requirements for fuel consumption. The implementation of these provisions is carried out within the framework of the Association Agreement with the EU, the Paris Agreement and the Global Initiative to Support Countries in the Transition to Electric Mobility (E-Mobility Program).

*Table 2.3*

Data on registered new cars in EU countries

	engine type	mass in working condition, kg	specific CO <sub>2</sub> emissions g/km	engine power, cm <sup>3</sup>	engine power, kW
Renaulte (PL)	gasoline	1217	143	1598	75
Citroen (PL)	gasoline	1089	148	1587	85
Toyota (PL)	gasoline	1782	144	1997	90
Skoda (PL)	gasoline	1360	130	1395	92
Skoda (PL)	gasoline	1115	103	999	70
VW (AT)	gasoline	1122	106	999	70
Ford (AT)	gasoline	1283	136	1496	147
Alfa Romeo (AT)	gasoline	1735	161	1995	148
Alfa Romeo (AT)	disel	1679	124	2143	110
Audi A3 sportback	gasoline	1275	107	999	85
VW Touareg	disel	2070	173	2967	210
Jaguar Land Rover Limited	disel	1745	134	1999	132
Suzuki Swift	gasoline	925	90	1242	66
VW Golf	electr.	1615	0	ВТ-Ч/КМ 127	100
Toyota Hybrid	combi	1605	22	1792	72

*Source:* compiled by the author

In the absence of direct statistical indicators on the state of the environment in terms of the volume of emissions by types and other characteristics of cars, the absence of statistics on registration data for each of the vehicles, the author made calculations on the basis of indirect data (see table 2.4, 2.5, 2.6).

The tables show that, despite the increase in the total mileage of freight and passenger road transport in Ukraine, namely, an increase in the mileage of

transportation in 2020, compared to 2019, by 3.9%, and compared to 2017 by 11%, there was a gradual decrease in the volume of pollutant emissions in the calculation of the number of grams per 1 km of vehicle mileage – sulphur dioxide by 11% comparing 2019 and 2019, carbon monoxide – by 13.7%, soot – by 5.0%, non-methane light organic compounds – by 17.0%, nitrogen dioxide – by 9,3 %.

Practically, based on the data obtained, until 2019, the requirements set by the international community for Ukraine to ensure the quality of atmospheric air when using motor vehicles running on fossil fuel were satisfactory on average across the country with a tendency to gradually decrease the number of pollutants, practically throughout their range. Compared with the European Union car registration data on carbon dioxide emissions, the figure of 129 grams/km mileage on average in Ukraine demonstrates positive trends in the fight against greenhouse gas emissions and their consequences for humans and the environment. Only the index of soot volume maintains an upward trend – over the four years under study, it increased by 5.5% in absolute terms, which was not reflected in the emission index per 1 km of automobile mileage due to the increase in the mileage of the performed transportations. Similar trends are taking place in relation to the indicator of nitrogen dioxide – a slight increase of 0.6% in the indicator of the volume of emissions in absolute values did not have the same consequences when calculated per 1 km of road transport due to the increase in the mileage of freight and passenger transportation in Ukraine as a whole (see table 2.6.), where the shares between passenger and freight transportation are distributed as 75% to 25% in favour of freight transportation.

The data in Table 2.7. demonstrate the dynamics of changes both in chain rates of growth and in the total volume of emissions of harmful substances from mobile sources (motor transport – cargo and passenger). Attention is drawn to the gradual increase in the volumes of some pollutants in the calculations of chain growth rates and relative to 2017 – sulphur dioxide by 7.9%, soot by 11.7%, nitrogen dioxide by 2.6% in the calculation by 2017, first of all, thanks to the increase in the number of shipments.

Such an increase is taking place against the background of a constant reduction in the number of the population of Ukraine – according to the State Statistics Committee of Ukraine, as of 01.01.2021, the number of permanent population was 41,983,654 people, compared to 2015, it was reduced by 607,336 people, or a drop of 1,43 %.

Based on this, it is possible to calculate the number of transports, freight and passenger, carried out on fossil fuels per citizen, namely: 2017 – 170 km of transport per person, or 34 kg of emissions per person per year on average in Ukraine from mobile of pollution sources, 2018 – 182.6 km, and 33.5 kg, 2019 – 190.6 km.

Table 2.4

The total mileage of trucks and passenger cars<sup>1</sup>, million km

	Years								
	2009	2012	2013	2014	2015	2016	2017	2018	2019
Trucks that run on gasoline and diesel fuel	7 299,8	6 461,9	6 827,5	6 872,3	6 713,9	6 100,9	5 380,1	5 719,3	6 031,3
Passenger cars, which have been run on gasoline and diesel fuel	2 457,9	2 263,7	2 576,4	2 736,1	2 614,9	1 961,6	1 872,9	2 025,6	2 016,6
Total mileage:	9 757,7	8 725,6	9 403,9	9 608,4	9 328,8	8 062,5	7 253,0	7 744,9	8 047,9

<sup>1</sup>Calculated by the authors based on the data (Derzhkomstat Ukrainy, 2021)

Table 2.5

Pollutant emissions from mobile sources of pollution<sup>2</sup> in Ukraine, tons

	Years			
	2017	2018	2019	2020
sulphur dioxide	16 336,1	16 579,6	16 908,1	17 623,3
carbon monoxide	1 092 036,6	1 071 150,0	1 045 127,9	1 016 846,6
nitrogen dioxide	152 882,6	152 613,3	153 827,2	156 907,0
nitrous oxide	846,4	819,1	791,0	775,1
non-methane light organic compounds	157 574,6	152 021,9	145 130,6	137 615,9
ammonia	9,1	8,6	7,7	6,8
methane	4 751,3	4 711,4	4 604,7	4 501,3
soot	21 590,5	22 076,2	22 779,2	24 123,9

<sup>2</sup> The data reflect emissions from road transport

Table 2.6

Volumes of emissions of pollutants and carbon dioxide from the mileage of mobile sources in Ukraine<sup>3</sup>

	Years			
	2017	2018	2019	2020
Freight and passenger transportation by road transport, million km	7 253,0	7 744,9	8 047,9	-
Pollutant emissions from mobile sources (cars), tons				
Sulphur dioxide	16 336,1	16 579,6	16 908,1	17 623,3
Carbon monoxide	1 092 036,6	1 071 150,0	1 045 127,9	1 016 846,6
Non-methane light organic compounds	157 574,6	152 021,9	145 130,6	137 615,9
Soot	21 590,5	22 076,2	22 779,2	24 123,9
Nitrogen dioxide	152 882,6	152 613,3	153 827,2	156 907,0
Volume of sulphur dioxide per 1 km of car mileage, gram/km	2,25	2,14	2,0	
Amount of carbon monoxide per 1 km of vehicle mileage, grams/km	150,56	138,3	129,9	
Volume of soot per 1 km of vehicle mileage, grams/km	2,98	2,85	2,83	
Volume of non-methane light organic compounds per 1 km of vehicle mileage, grams/km	21,73	19,63	18,03	
Volume of nitrogen dioxide per 1 km of vehicle mileage, grams/km	21,08	19,71	19,11	

<sup>3</sup> The data will reflect emissions from motor vehicles that run on fossil fuels - gasoline and diesel.

*Sours:* Calculated by the author based on the data (Derzhkomstat Ukrainy, 2021; WEF, 2013; UN, 2014; IEA, 2021).

Table 2.7

The share of pollutant emissions in the total volume of emissions from mobile sources in Ukraine<sup>3</sup>, %

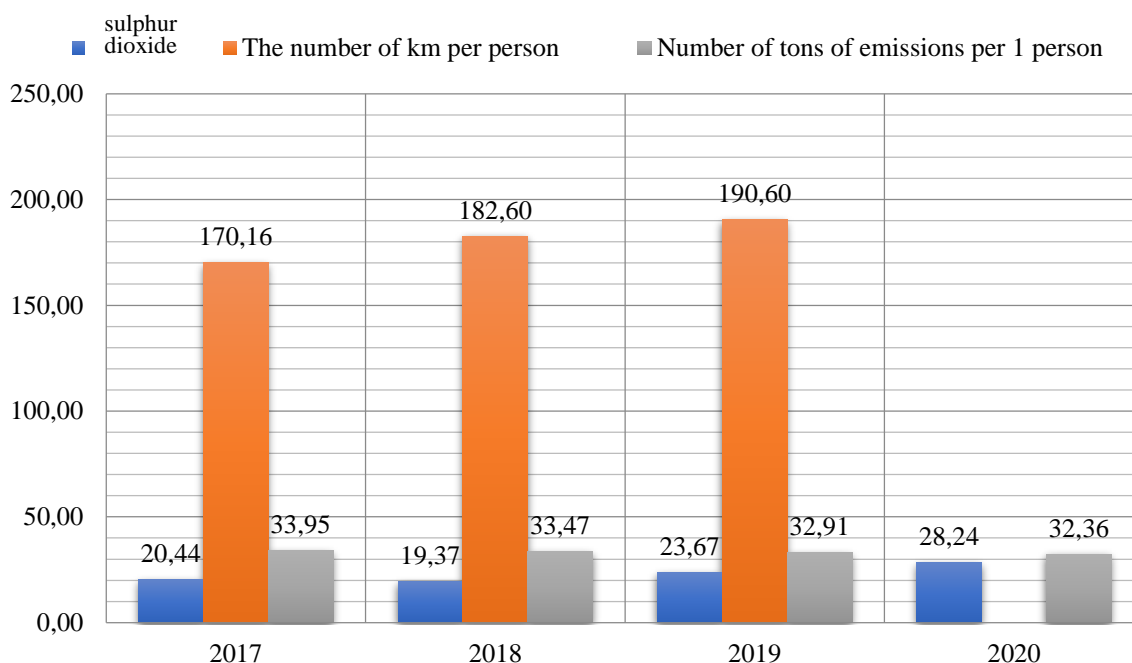


	Years			
	2017	2018	2019	2020
Freight and passenger transportation by road transport, chain rates of growth	-	6,8	11,0	
Emissions of pollutants from mobile sources (cars), chain growth rates:				
sulphur dioxide	-	1,5	3,5	4,2
carbon monoxide	-	-1,9	-4,3	-2,7
non-methane light organic compounds	-	-3,5	-7,9	-5,2
soot	-	2,2	5,5	5,9
nitrogen dioxide	-	-0,2	0,6	2,0
Share in the total volume of emissions:				
sulphur dioxide	1,1	1,2	1,2	1,3
carbon monoxide	75,6	75,4	75,2	74,9
nitrogen dioxide	10,6	10,7	11,1	11,6
nitrous oxide	0,06	0,06	0,06	0,06
non-methane light organic compounds	10,9	10,7	10,4	10,1
ammonia	0,0006	0,0006	0,0006	0,0005
methane	0,33	0,33	0,33	0,33
soot	1,49	1,55	1,64	1,78
<i>Total:</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

*Source:* Calculated by the author based on the data (Derzhkomstat Ukrainy, 2021; WEF, 2013; UN, 2014; IEA, 2021).

That is, only during the years under study (2017–2020), these indicators increased by 12.1%. With all that, the calculations of emissions per 1 km of vehicle mileage consistently show a drop in each type of pollutant. Practically the same dynamics is observed in the total volume of substances, indicators by types of harmful substances change in a similar dependence.

Despite the increase in fuel prices (which may result in the population using lower-quality fuel with an increased content of pollutants) and the rapid increase in the use of diesel fuel instead of gasoline, the overall level of atmospheric air pollution and the level of pollution in the calculation of the amount of substances per 1 km of transportation remains satisfactory based on the statistical data of the State Committee of Statistics of Ukraine. Pic. 2.4 visualizes the dependence of all presented indicators.



Pic. 2.4. The dynamics of changes in fuel cost indicators, the number of emissions per 1 person and the number of km of transported goods and passengers per 1 person

Contrary to the positive dynamics regarding the priority use of fossil fuels in domestic motor vehicles, Ukraine should introduce certain initiatives to switch to other, alternative sources of energy resources – electric energy, biofuels and, apparently, other innovative sources, such as water, hydrogen, solar and others. Such radical changes require certain initiatives.

On June 8, 2017, the EV30@30 Campaign program was initiated in Beijing (China) as part of the initiative to introduce electric transport. It is believed that electric transport can help facilitate the transition to the formation of "clean" energy systems,

diversify the sources of energy necessary for the movement of people, goods and increase the energy security of the population, which is further supported by the accumulative capacity of such sources, zero or ultra-low volumes of emissions of pollutants, noise level, etc.

The authors of the initiative set several goals:

- facilitating the increase in the number of chargers and tracking their progress;
- increasing the responsibility of the public and private sectors regarding the possibility of functioning of electric vehicles - ensuring proper conditions, infrastructure, etc;
- expanding the scope of research in the field of politics and the exchange of information in this direction;
- supporting governments in need of assistance (educational, technical, information) through training and capacity building;
- creation of a Global Pilot City Program with the goal of expanding it to 100 cities within five years.

By September 2018, 34 leading cities from 12 countries on four continents had joined the EVI Global EV pilot city program.

The analysis of world experience in the direction of supporting programs for the implementation of "clean" technologies in transport allowed us to form an idea about the participation of public authorities of the leading countries of the world in facilitating these processes.

*Canada, China* consider the importance of reducing emissions in the transport sector as the single leading positive factor influencing climate change, considering the electrification of transport to be a key one, so governments:

- conducted research and proposed development of relevant "clean" technologies;
- a zero-emission vehicle strategy was developed to increase the level of use of these vehicles;
- invested in electrical infrastructure - charging substations and hydrogen filling stations;
- conventional codes and standards have been developed;
- provided consumers with information regarding the purchase;
- invested in research, development and demonstration of innovative technologies;
- a large number of cars with zero emissions are offered;
- provided opportunities for Canadian cities to join global urban pilot projects around the world to gain experience and use preferences from participating in these Programs.

*Finland* – Finland's climate change strategy by 2030 calls for a 50% reduction in greenhouse gas emissions, with specific requirements for fuel and vehicles, namely: - use of at least 250,000 electric vehicles - use of at least 30% biofuels, and - to leave no more than 50,000 vehicles on gasoline (the current fleet of passenger cars in Finland is about 2.6 million units). A number of large cities of the country are included in this program, for example, in Helsinki, commercial tenders are already being held for the purchase of electric buses, and at the same time, the system of their fast-charging stations (about three minutes) is being expanded.

*France* – the 2017 French Climate Plan emphasized ending the sale of fossil fuel cars by 2040 in order to transition to "green growth". Local authorities have facilitated the deployment of EV charging infrastructure under the auspices of the Future Investments (PIA) programme, which was launched in 2009 to boost strategic initiatives for electric mobility. Within this program, more than 20,000 electric car charging points were financed, which represents an investment of 61 million euros.

In order to increase the market share of electric vehicles (five times more by 2022, compared to 2017), the French government has developed incentives. In particular, a scheme of rewards or fines, depending on the level of CO<sub>2</sub> emissions, for the purchase of cars has been introduced. There is also a premium for replacing an old fossil-fuel car with one that uses a cleaner form of energy. In May 2018, the French government signed an agreement with the French automotive sector to achieve the goal of a full transition to "clean" transport. The government has set itself the task of achieving 100,000 units of electric vehicle charging stations by 2022. Since February 2016, the ADVENIR (Energy Savings Certificates) program has been in place, which has facilitated the installation of 12,000 charging stations in parking lots (shops or businesses) and in urban settlements.

*India* – in recent years has shown rapid social and economic development with an affluent middle class, which is expected to have a significant impact on the lifestyle of the population, including modes of personal mobility. The transformation of the current mode of transportation, exclusively on fossil fuels, to cleaner technologies must be supported by national policies, ie policies on energy security and greenhouse gas reduction. However, the mass adoption of environmentally safe, efficient and affordable modes of transport in the country requires adequate infrastructure. Moreover, it is important to resolve the issues related to technical, regulatory and business models of promoting the creation of a reliable ecosystem in the country. In order to solve the above problems, the Government of India has allowed any person or corporation to set up charging stations without the need for a license. Innovative business models of facilitation such as Public-Private Partnerships (PPPs) and Viability Financing (VGFs) are also being explored to accelerate the deployment of public infrastructure in the country.

*Japan* – To meet the goals of the Paris Agreement, the Japanese government aims to increase the share of battery electric and hybrid vehicles to 30% and the share of fuel cell vehicles to 3% of all new car sales by 2030. At the same time, the reduction of greenhouse gas emissions per car by 2050 by up to 80% compared to the level of 2010 was emphasized. The Japanese government aims to convert all passenger vehicles produced by Japanese automakers and shipped worldwide to electrified models, including hybrid vehicles, and to reduce greenhouse gas emissions by 90% by 2050 from 2010 levels.

*Mexico* – in its 2012 Climate Change Law, it created conditions aimed at regulating greenhouse gas emissions to help stabilize their concentration in the atmosphere to levels that avoid negative consequences for the climate system. In 2016, Mexico also committed to meeting the Paris Agreement goal, pledging to reduce its greenhouse gas emissions by 22% by 2030.

The Ukrainian national strategy in the field of transport provides:

- introduction of a regulatory policy that promotes the use of efficient technologies, including EVs;
- measures to accelerate the replacement of vehicles in the Mexican rolling stock;
- definition of a "road map" for replacing the use of fossil fuels with "clean" energy carriers in cities;
- formation of a public procurement program to provide efficient means of transport, including electronic means and public transport;
- development of tariff policy norms, including the provision of tax incentives for electric vehicles and support for the deployment of the system of charging stations through Energy Transition Fund.

*The Netherlands* – The Dutch government strongly supports the need for clean and sustainable mobility, which is that by 2030 all passenger vehicles sold will have zero greenhouse gas emissions. For this, fiscal instruments have been developed to stimulate the sale of zero-emission cars, along with this, great attention is paid to the development of public charging infrastructure that meets the requirements of vehicles. The government is working together with private companies, NGOs and research institutes to promote electric mobility. The joint work takes place on the public-private platform – E-Team, the government also positions the Netherlands as a nationwide Live for Smart Charging laboratory.

*Norway* – ratified the Paris Agreement on climate change and undertook to reduce greenhouse gas emissions by 40% by 2030, against 1990 levels. By mid-2018, the total number of battery electric vehicles in the country reached about 180,000 units, with a market share of 26% for new cars and 19% of the hybrid electric vehicle (PHEV) market. The high share of electric cars was provided by a number of economic and

other incentives – the absence of tax on the receipt of electricity, value added tax, reduced annual contribution and preferential tax for electric cars used as official cars, absence of road use tax and re-registration tax. In addition, EVs have until recently enjoyed free toll roads, public transit lane access, free public parking and free ferry rides. Under national law, electric cars are still entitled to at least a 50% discount on toll roads and ferries, access to most public transport lanes, but not always during peak hours. The government also aims to maintain a minimum 50% reduced tariff for public transport by electric vehicles.

*Sweden* – In June 2017, it adopted the Climate Act, which aims to reduce emissions from road transport operations by 70% by 2030, compared to 2010, and by 2045 to completely abandon fossil fuel transport. To achieve these goals, the Swedish government implemented a wide range of policy measures. On 01.07.2018, the government introduced the "bonus/abuse" program, which does not concern the volume of emissions, but is related to the system of discounts for the purchase of an electric car, for example, the maximum support is provided for the purchase of battery electric cars from 4,000 euros to 6,000 euros. At the same time, an increased tax is applied to vehicles with gasoline and diesel engines. These conditions contribute to the spread of the use of electric vehicles among private and public cars and minibuses. Since 2017, the government also provides a discount for the purchase of electric buses. During the spring of 2018, the Swedish government also gave municipalities the opportunity to form ecological zones. Since 2015, public support has been provided for the deployment of charging infrastructure (both publicly available and private), and on January 1, 2018, a specific "home charger" scheme was introduced.

In 2015, the Swedish government formed the Swedish Energy Agency to coordinate public efforts to deploy the relevant infrastructure. Funding for e-mobility is ongoing and substantial, including demonstrations of electric road systems on public roads, a pilot production line for sustainable battery production, and €100 million in ongoing reimbursement for electric drive trials.

*The United Kingdom* – announced itself as a leader in the introduction of the distribution of zero-emission vehicles and the rejection of the sale of petrol and diesel cars and minibuses by 2040. The government has announced its ambition that by 2050 not a single car or van in the UK will have emissions. The Government has developed a Road to Zero Strategy which details the Government's comprehensive plans to support this mission with a clear path to zero emissions. By 2030, at least 50% of new cars and 40% of new minibuses sold in the country must reduce greenhouse gas emissions by 70%. To achieve this goal, almost £1.5 billion has been invested in a comprehensive package to support the transition to zero-emission vehicles, which also includes grants, access to vehicle connectivity and charging infrastructure support schemes.

Organizations that contribute to the establishment of ecological transport systems in cities include:

*C40* – the world's megacities network, which is committed to solving the challenges of climate change, helps cities to effectively collaborate, share knowledge and take meaningful, measurable and sustainable actions to combat climate change. The organization unites 94 of the world's greatest cities, 700 million citizens and represents a quarter of the world's economy.

*Fund FIA* – is an independent, UK-registered charity that supports international programs of action to promote road safety. Environment and Sustainable Mobility, funds research. Founded in 2001 with a \$300 million donation from the Fédération Internationale de l'Automobile (FIA), a non-profit federation of automotive organizations and the governing body of world motorsport.

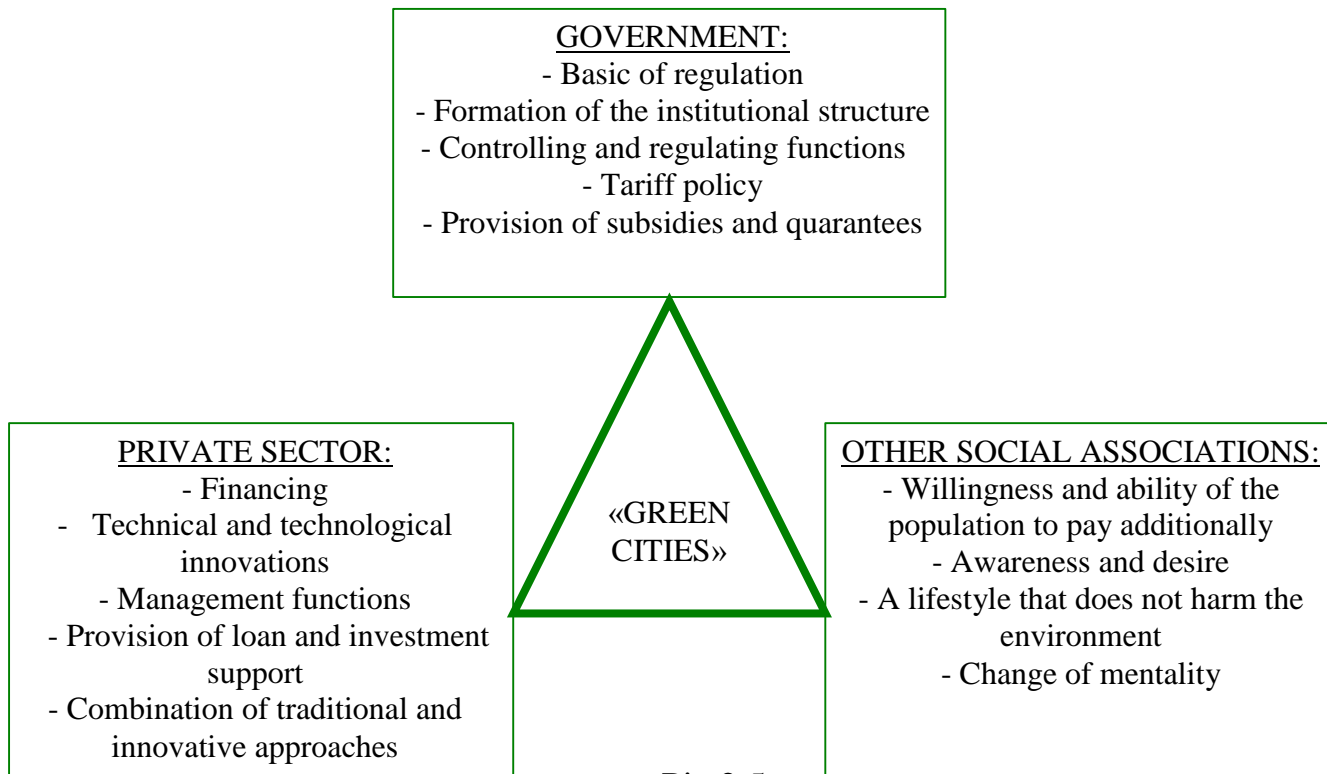
*GFEI* – A global fuel economy initiative that focuses on increased vehicle efficiency, ensuring the widest possible adoption of existing energy-saving technologies and promoting the development and implementation of new ones, with the main focus on the spread of the use of electric vehicles as a key factor in future decarbonization.

*NRDC* – The Natural Resources Defence Council is leading the fight against climate change by addressing the climate crisis at its source: water pollution from combustible minerals. NRDC is working to accelerate the transition to electric vehicles and clean grid integration, working with cities in the US, China and elsewhere to help deliver clean energy solutions by sharing research and best practices with stakeholders, grid integration information, and sharing renewable energy sources, and by promoting the Global Pilot Program for Cities.

*Climate Group* – an international non-profit organization that brings together powerful business and government networks that are changing global markets and policies, acting as a catalyst for innovation and offering solutions to scale and accelerate the transition to electric vehicles. And many other international organizations and associations.

Formation of long-term transport development programs based on the principles of "green" growth requires scientifically based approaches - definition of goals, tasks, mechanisms and tools for the implementation of these tasks. The choice for the purpose of quality, reliability, safety (human, technological, environmental) of the transport system of the state and, above all, its settlements, the formation of a number of criteria for evaluating the quality of the implementation of the established goals should be supported by specific mechanisms with the separation of factors influencing the processes of achieving results, management resources to achieve the goal. Below is a diagram of the construction of a complex mechanism for managing environmental protection activities in the national transport sector (see pic. 2.5.–2.6.).

An analysis of the global experience of the introduction of "green" technologies in transport, an analysis of the state of the Ukrainian transport system, state priorities for the development of "green" cities with environmentally attractive transport made it possible to form a conceptual scheme for the distribution of obligations for the implementation of these initiatives (see pic. 2.5.).



Pic 2.5.

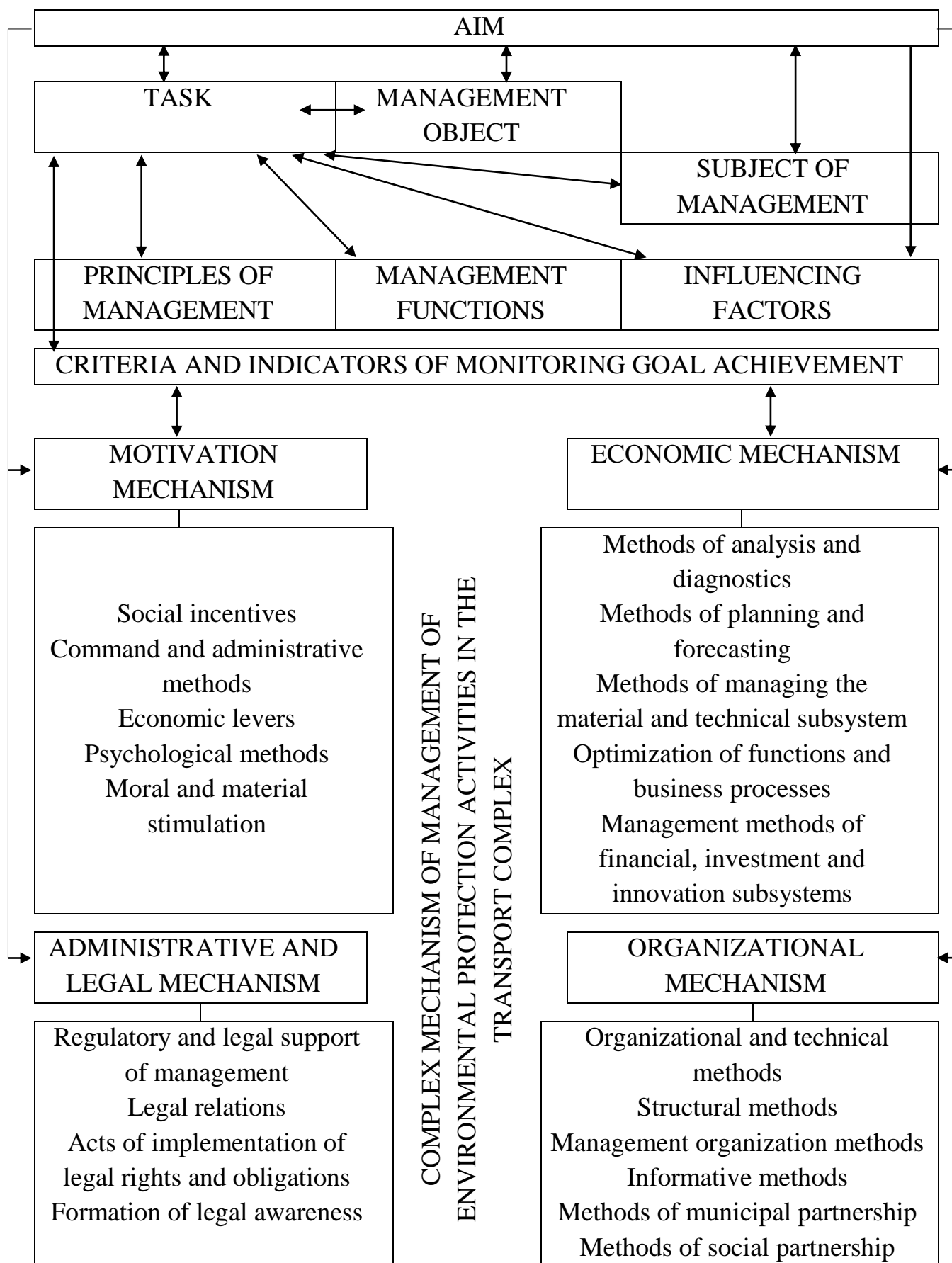
#### Distribution of obligations between institutional levels

*Source: on the basis of (Policy Pathways, 2013; WEF, 2013; UN, 2014; IEA, 2021; Analysis, 2016).*

The issue of the mechanism implementation is fundamental in the implementation of the concept of sustainable development and ecologization of the economy (Khvostina and Yaskevych, 2017). In the most general terms, it is expedient to define three possible mechanisms for the realization of economic goals, including ecological and economic ones:

- direct regulation associated with the influence of the state (sometimes such regulation is called "command and control"), these are normative and legal, administrative control measures, direct regulation and the like;
- economic stimulation related to the development of market mechanisms;
- mixed mechanisms – a combination of the first two approaches.





Pic. 2.6. Structural and functional scheme of the complex mechanism formation for the management of environmental protection activities in the transport complex

Conclusions. Presented scheme is conceptual, it defines the priority areas of each of the institutions involved in the implementation of programs for the development of "green" cities with ecological transport, but this scheme requires specific tools and mechanisms for its implementation.

The formation of a complex scheme (see pic. 2.6), first of all, requires the determination of priorities, which will be set as a goal. In the direction of ensuring environmental protection activities in the transport complex of Ukraine, we have defined the goal as the introduction of a new model aimed at stopping the degradation of natural ecosystems and creating favorable conditions for the activities of current and future generations. The defined goal is supported by a number of tasks that should form the basis of priorities and directions for further research on issues of development and compliance with established requirements:

- development of high-quality, reliable, sustainable and effective transport and related infrastructure, including regional and cross-border infrastructure;

- provision of expanded use of electric transport, transport on alternative sources of energy resources, construction of the corresponding infrastructure network;

- ensuring the availability of road and transport infrastructure of an innovative technological and technical level through the use of extended forms of state participation in various infrastructure projects;

- ensuring the expanded use of information and communication technologies in transport,

- development of safe, accessible, environmentally friendly transport;

- formation of sustainable transport systems based on a higher level of traffic safety, environmental and human safety;

- development of programs for the development of transport systems of urban and suburban agglomerations on the basis of the implementation of priorities for the use of public transport, increasing the level of its accessibility for all segments of the population, environmental friendliness and sustainable development.

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## **1.2. GREEN INFRASTRUCTURE IN THE ENVIRONMENTALLY-ORIENTED MANAGEMENT SYSTEM OF URBAN TERRITORIES: THEORY AND APPLICATION EXPERIENCE**

At the current stage of humankind's development, reciprocal influences in the system of "society-nature" is especially pronounced: significant changes in the environment are reflected in the quantitative and qualitative parameters of society development, and the increasing scale of its activities cause irreversible total changes on the environment. This testifies that society and nature are single dynamic system, and its components are characterized by interdependence and active feedback. So, there is a tendency of increasing dependence of society on the natural environment due to exhaustion of natural resources, reduction of the Earth's area per capita, reduction of the assimilation potential of the environment, loss of its primary properties as a favorable environment of life, which in turn is due to an increase in anthropogenic impact on nature. The ecological crisis became systematic. First of all, the ecological crisis is a crisis of the existing society adaptation mechanisms to the environment. There is an urgent need to replace the vector of this interaction through the reform of the institutes of governance.

Particularly relevant ecological problems have been acquired in urban areas. Cities are the main centers of economic, demographic, socio-cultural development of the state. They make a significant part of the national gross product, they are donors of local and state budgets, centers for the development and implementation of industrial and humanitarian technologies, and the development of science and culture. Actualization of the problems of managing a modern city as a complex socio-ecological and economic system, is ensuring a high quality of life, necessitates a rethinking of the principles and systems of local self-government, its organizational-legal, material and financial basis, as well as the application of modern environmentally-oriented technologies in the urban economy (Vakulenko, V. M. et al., 2008).

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However, despite all the efforts of world science, there are no ready-made models of sustainable development of society. A global plan for the society development is required, and would combine such elements: scope and durability, integrity and comprehensiveness, which implies consensus building on ideological perspectives for the future, the formation of an environmentally-oriented worldview, values, fundamental political, economic and ethical principles. So, the creation of a viable society model requires scientific, economic, technological, political, legislative and ideological levels of decision, and the imperfection of the urban planning systems and urban areas management methodology in general, the lack of consideration of the environmental component leads to the need to further develop the theoretical and methodological principles of environmental management of urban areas.

The issues of city management in general, and the city economy in particular, were studied by V. Vakulenko et al. (2008), V. Babaiev (2004), L. Cherchyk (2018), Y. Kaver (2005), N. Khumarova (2011, 2019), V. Kravchenko et al. (2003), V. Kuibida, Y. Kaver (2006), V. Meshcheriakov (2012), M. Orlaty et al. (2002), O. Rybak (2012), L. Valenkevych et al. (2012) etc.

In particular, M. Orlaty (2002) and L. Valenkevych et al. (2012) are characterized the state and problems of urban management, substantiated the necessity and methodological foundations of a strategic approach to the management of a modern city, and determined its substantial (functional) blocks.

V. Meshcheryakov (2012) studied the current state and problems of the city-planning system functioning, regulation of urban development activities, analyzed regulatory and substantiation, substantiated the expediency of community participation in the planning and construction of the city's territory. O. Kononenko (2014) researched theoretical approaches and experience of formation of environmentally-oriented urban development, determined the main ways of environmentalizing cities.

N. Khumarova, O. Popyk (2019) are developed a comprehensive approach to the formation of the urbanized territories management system based on the priority of the ecological component in the justification process, adoption and implementation of management decisions by local stakeholders; methodical toolkit of complex ecosystem assessment of the urbanized territories state, which, unlike the existing one, taking into account the information urboecosystems levels, spatial-planar characteristics, taking into account the economic-ecological component and cost parameters of urban territorial systems; the motivational toolkit of urbanized territories environmentally-oriented management, which is based on the strengthening of the stakeholders sanction-fiscal and incentive motivation function regarding the implementation of environmentally-oriented measures and solutions.

The current ecological situation serves as a limiting factor both for the development of society as a whole, and for the development of separate territories.

Therefore, there is an urgent need to reform the institutions of territorial administration, the implementation of environmental imperatives in its structure, reorientation of thinking, system of making management decisions, criteria of efficiency in accordance with the principles of eco-efficiency and eco-justice. The first step here is, on the one hand, a clear understanding of the presence of environmental threats by the external environment, on the other - harmful to the environment from activities within the urbanized areas.

Based on the study of the processes in the municipal economy, one can conclude that the transition to environmentally-oriented management should be accompanied by effective environmental and social measures aimed at ensuring optimal development and avoiding mismatches of interests that arise among the stakeholders of the city. It can be achieved through the environmentally-oriented restructuring of the interaction and changing finance priorities from the city budget, which involves investing in environment friendly technologies, financing preventive activities to protect the environment in avoiding further degradation, structural changes in the system of nature and resource use of the city, forecasting changes in the quality of the urban environment as a result of changing social, industrial, infrastructure impact. This involves changing existing managerial approaches to new concepts that will ensure balanced and sustainable development of urban areas.

Practically, it's about of the need to transition to the principles of environmentally-oriented management with the wide use of territorial management instruments, environmental and public management. The ecological imperative is dominant in this concept, since the evidence of the current ecological crisis poses the demands of the global community to develop global survival strategies.

Summarizing theoretical and practical aspects of territories ecological management, we should mention that it includes the system of state, local, corporate, public and special ecological management. By forming the mission and the concept of the urban areas development, more and more emphasis is placed on the ecological component, which includes the creation and maintenance of green (park) areas, the implementation of non-waste technologies, environmentally friendly production at enterprises, the introduction of modern technologies for energy and heat supply, sanitation and waste utilization.

Ukraine has set itself the goal of integrating into the European Union, which implies fulfillment of certain requirements. In the EU, more than 300 legal acts (conventions, directives, regulations, rules and recommendations) have been formed that determine its environmental policy.

EU environmental legislation ensures: strict control over emissions from motor vehicles, hazardous chemicals in consumer goods, movement of waste, control of hazardous substances and preparations, etc.; control over activities, production

processes that affect the environment or human health; protection of the environment. Procedures and procedural rights for assessing the impact of projects and activities on the environment were identified. In particular, in the EU countries the directive "On the assessment of the effects of certain public and private projects on the environment" such an assessment is required for projects that may have a negative impact on the environment. The Integrated Product Policy (IPP) strategy is being implemented, which aims to promote the market for environmentally friendly products.

Accordingly, in Ukraine processes of creation and implementation of integrated quality management systems (DSTU ISO 9001, DSTU ISO 14000, OHSAS 18000), which meet the requirements of international standards, are taking place. Ukraine has a sufficiently developed ecological legislation; appropriate institutions have been established. Provisions on environmental monitoring and environmental forecasting were introduced.

Developed system of:

- the project of environmental impact assessment documentation (EIA) during the new construction, expansion, reconstruction and technical re-equipment of industrial and civilian objects. The purpose of the EIA is to determine the appropriateness and feasibility of the planned activities and to substantiate the economic, technical, organizational, sanitary, state-legal and other measures to ensure environmental safety;
- normative and permit ecological documentation - official permissions and positive conclusions of central or local executive authorities, the obligatory registration of which is determined by the current legislation of Ukraine in the course of economic activity or operation of objects with high or medium risk for the environment;
- documentation on results of the enquiries, on the protection of atmospheric air, surface waters, on the management of waste products, which determine the responsibility for violating the current legislation.

However, in the current system of environmental management, attention is focused on the problems of nature conservation in general or the individual natural resources of the territories. Its disadvantage is the use of predominantly administrative methods of management, usually fiscal, inspection and control functions by management bodies. Another drawback, in our opinion, is the inflexibility of this system and the inability to solve the harmonizing issues of the state economic, social and environmental interests, economic entities, and certain members of society within a certain territory. A rigidly centralized management system, formed by a hierarchical principle that has no alternatives, will not encourage the development of a local initiative and autonomy, and will take into account the problems specific to certain urban areas.

In our view, the urban areas' environmentally-based management system is a set of principles, methods, approaches, forms and tools for managing the elements of the



urban environment and processes that take place in order to ensure a high level urban environment quality in general, environmental safety, social attractiveness and economic efficiency in particular.

The specified one requires revision of the existing environmentally-oriented urban management system.

Firstly, the object of management must have clear physical boundaries, structure, substantive content of its components and connections.

Secondly, resolving this issue is connected with the necessity of forming a unified approach to the definition of the city territory essence, preferably – of urban space, in order to ensure that the use of terms in new legislative acts, registries, regulations, and state standards is consistent.

Thirdly, an important aspect is the formation of a transparent system for strategic city development financing.

Fourthly, improving the management of these processes by adapting the organizational structures of the City Hall to coordinate the activities of all services involved in urban construction and management.

The criteria for the effectiveness of urban territories management should be: satisfactory state of the current and future city's population generations health; life safety; proper level of the ecological, sanitary and hygienic city territory state; high level of living comfort; opportunities for independent material support of residents, their self-realization and development; quality of life, environmental safety, social attractiveness, economic efficiency. At the same time, urboecosystems should not exist through the destruction or damage of other ecosystems.

In this context, the postulates of the Deep Ecology Concept by A. Naess (1989) are relevant:

- the well-being and prosperity of humanity and all other forms of life on earth have value in themselves (synonyms: intrinsic, inherent value, true dignity), the values of all forms of life do not depend on their usefulness for humanity;
- the richness and diversity of life forms contribute to the realization of these values and are also values in themselves;
- people have no right to reduce this wealth and diversity, except for the need to satisfy vital needs;
- any human intervention in the surrounding world is excessive;
- the prosperity of human life and cultures, as well as the prosperity of other forms, requires a significant reduction of the human population;
- a significant change in living conditions for the majority requires changes in political, technological, ideological and economic systems;

- ideological changes should take place in the established differences between the concepts of life quality and living standard. The constant growth of living standards requires a deep rethinking of the difference between definitions “a lot” and “too much”;
- those who subscribe to the above clauses are obliged to directly or indirectly participate in the attempt to implement the necessary changes.

Evolutionary changes in the urban development character and type appear as an objective reflection of the formed value needs and preferences of citizens in the organizational structure of urbanized territories and the appearance of more modern construction materials, which, along with the creation of the latest architectural structures, ensure the minimization of negative environmental effects. At the same time, the cities of the future, which has already arrived, are a vivid example of the imbalance between the radical technocratic urban landscape and the natural aesthetics of biotic forms.

The concepts of ecopolis, "garden city", "new countryside", "arcology" and others became an alternative reality, the common feature of which is the formation of co-evolutionary mechanisms of natural and artificial forms symbiotic coexistence within urbanized territories, the search for a lost balance with a biosphere-compatible volume of production and consumption based on the natural potential of self-renewal, with the dominance of green infrastructure objects in the general system of urban zoning.

Necessary steps on this path are:

- improvement of the urban development model`s institutional mechanisms to the principles of "green" growth, circular economy and ecologically safe socio-economic development;
- modernization of urban areas infrastructure networks (water consumption, energy consumption, etc.);
- increasing the planar characteristics of the city's green framework objects, creating recreational areas;
- gradual transition to renewable (alternative) energy sources;
- bioethical conceptual model formation dealing with urban flora and fauna representatives.

This corresponds to the concept of green infrastructure, which has been implemented in many countries, and the use of its technologies has helped to solve the environmental, socio-economic problems of cities.

The formation of the green infrastructure management theory and methodology was preceded by the practice of applying alternative methods and technologies of using natural components to solve a number of different nature problems – from the management of living space in general to certain areas of the urban economy, in

particular, the management of stormwater runoffs volume, the creation of green spaces networks, etc.

The terminology nascence (ecological infrastructure, green infrastructure) is associated with the use of new approaches to urban greening (in the 1870s) (Hiltrud Pötz & Pierre Bleuze, 2011) and alternative methods of stormwater runoffs management and erosion prevention (mid-1980s years of the USA) (Schueler, T., 1987).

The first is due to the development of the US environmental movement and the need for a new approach to living space management. Green infrastructure is considered as "an interconnected network of green spaces that preserves the values and functions of natural ecosystems and provides the associated benefits to the public" (Benedict M. A., McMahon E. T., 2001).

The second was reflected in the Clean Water Act (USA, 1987) as an amendment to manage diffuse sources of pollutants from urban lands. The U.S. Environmental Protection Agency (EPA) subsequently published regulations for MS4 municipal separate sewer systems (EPA, 1990) and development of stormwater pollution prevention plans, implementation of source control practices, including vegetative control, filtration and infiltration practices (Handbook, 1993 ). It was the EPA that expanded the concept of green infrastructure to apply it to the drain management through the use of natural and engineered systems that imitates nature. In practice, this ensured the creation of a sustainable, multifunctional urban environment, the improvement of natural ecosystems and solved the problems of drainage and wastewater treatment.

EPA announced a Strategic Agenda to Protect Waters and Build More Livable Communities Through Green Infrastructure and selecting Green Infrastructure Community Partners, identified green infrastructure funding opportunities. EPA has constantly promoted the use of green infrastructure by publishing summaries of its application experience and benefits in the context of wet weather management through green infrastructure (EPA, 2011).

EPA projects include green alleys and permeable pavements for sidewalks, roads, basketball courts, parking lots for stormwater runoffs management, resurfacing previously sub-earth rivers and canals, rain gardens, and bioretention systems in schools and other public facilities. This significantly relieved the city's sewage and wastewater treatment systems, reduced the flooding risks, partially solved the problem of air purification, and softened the city's microclimate by regulating temperature and humidity. The combination of green spaces and water bodies creates new opportunities for recreation (Benefits of Green Infrastructure, EPA, 2020; The Value of Green Infrastructure, 2010; Dhakal, Krishna P.; Chevalier, Lizette R. 2017; Green Stormwater Infrastructure, 2019).

American Society of Landscape Architects (ASLA) efforts were directed to the implementation of green infrastructure projects in the Master Plans of cities, as well as the development of fundamentally new approaches to urban construction. In particular, banking services for ecological infrastructure were offered, the project Professional Awards Master Plan "Green Infrastructure" was implemented (ASLA. Professional Awards, 2013).

LEED certification system and credits have been developed to implement the practice of green construction based on the principles of sustainable development, reduce the negative impact on the environment, and create a favorable environment for living, the (Bilyk O.A., 2016; Orlovsjka Ju.V. et al., 2017).

In 2012 systematic review of 479 green infrastructure projects across the United States found both environmental and economic outcomes. Specifically, 44% of green infrastructure projects reduced costs compared to 31% that increased them; significantly reduced costs for regulating stormwater runoffs, heating, cooling; significantly lower investment in green infrastructure compared to gray (\$1.2 billion over 25 years versus \$6 billion); green infrastructure is cheaper than others for water management (Berg, N., 2012).

Therefore, green infrastructure is considered as a concept that anticipates using the opportunities of the natural environment in making decisions about land use planning.

However, the range of activities where the concept of green infrastructure is applied is expanding. In particular, in general design and design of multifunctional green areas, adaptation to climate changes and features, landscape planning. Thus, the term "blue-green architecture" is used in construction, which implements these same principles. Therefore, the concept of "multifunctional green infrastructure" is sometimes used, which involves the integration and interaction of various functions or types of activities in the same territory.

Since it was often about water balance, rainwater and stormwater runoffs management, the terms "blue-green infrastructure" and "green-blue urban networks" were used alongside.

In 1999, the US President's Council on Sustainable Development identified Green Infrastructure as one of the key strategies for achieving sustainable development (Benedict, M. A. & McMahon, E., 2006), which gave a new impetus to the formation of the concept and content of green infrastructure.

In particular, it is worth noting the experience of Germany, where, using the concept of green infrastructure, they solved many environmental problems in the areas of intensive industrial production by creating a landscape park with areas of perennial vegetation and water bodies that are fed by stormwater runoffs purified by natural

filtration. In this way, the problem of creating a recreation area and water reserves was solved.

In Sweden, the concept of green infrastructure has expanded on the basis of the principle of multifunctionality, that is, the creation of a multifunctional urban environment, which includes the following components: technical, blue-green infrastructure, ecosystem services. This contributed to the formation of energy, water supply and waste disposal complex system and the performance of such a function as the formation of the urban environment microclimate and its aestheticization (Maksymenko N. V. & Burchenko S. V., 2019).

The green infrastructure concept development was significantly influenced by the modern theory and methodology of ecosystem services (early 2000s). The provision of ecosystem services is considered by many scientists as one of the main criteria for classifying territories and objects as green infrastructure (Ecosystems and Human Well-Being, 2003). The arguments for using this approach are the close connection of green infrastructure with ecosystem services that provide ecological, social and economic benefits. Therefore, most scientific publications talk about the assessment of green infrastructure ecosystem services (Liquete C. et al., 2015).

Liquete C. et al. (2015) consider that outside the urban environment, it is impossible to classify all ecosystems as green infrastructure. The selection is based on the multifunctionality of ecosystem services and relationships that support the preservation of ecological networks.

Maes J., Barbosa A., Baranzelli C. et al. (2015) link green infrastructure to land use and the ability of landscapes to provide ecosystem services. The result of the study is a reference scenario that reflects changes in land use and green infrastructure in Europe for 2020 and 2050.

Most of the studies on the allocation of green infrastructure territories and objects concern urban areas and the use of landscape planning tools, mapping, GIS technologies (Andreucci M. B., 2013; Mell Ian, 2011; Karsten Rusche, Mario Reimer, Rico Stichmann, 2019).

A clear direction of the theory, methodology and practice development of green infrastructure management was determined by the Biodiversity Conservation Strategy until 2020 (adopted in 2011 by the EU member states), the main positions of which were the support and improvement of ecosystem services, restoration of degraded ecosystems through the inclusion of green infrastructure in territorial planning. The main goal is to preserve biodiversity in the EU (Our life insurance, 2011).

The European Biodiversity Index Optimization Initiative (SEBI, 2007) identified indicators that are important for green infrastructure: fragmentation of natural and semi-natural areas, fragmentation of river systems, ecosystem coverage,

nationally designated nature conservation areas (The Multifunctionality of Green Infrastructure, 2012).

The development of the territories allocation practical issues and their inclusion in the green infrastructure is reflected in the technical reports of the EEA:

- Green infrastructure and territorial cohesion. The concept of green infrastructure and its integration into policies using monitoring systems. EEA Technical report, 2011;

- Green infrastructure implementation and efficiency final report. Brussels: Institute for European Environmental Policy, 2011;

- Spatial analysis of green infrastructure in Europe. Technical report No. 2. Luxembourg: Publications Office of the European Union, 2014;

- Exploring nature-based solutions. The role of green infrastructure in mitigating the impacts of weather- and climate change-related natural hazards. EEA Technical report, 2015; Supporting the Implementation of Green Infrastructure Final Report. European Commission. Rotterdam. 2016.

The main goals are the biodiversity preservation, maintaining the ecosystems and ecosystem services sustainability, social well-being, supporting the green economy and sustainable management of land and water resources.

The difference of the technical report "Exploring nature-based solutions. The role of green infrastructure in mitigating the impacts of weather- and climate change-related natural hazards. EEA Technical report, 2015" in emphasis on ecosystem services that can reduce the effects of climate change and negative natural phenomena.

Report of the European Commission "Supporting the Implementation of Green Infrastructure Final Report. European Commission. Rotterdam. 2016" covers 5 main tasks: effective promotion of green infrastructure at all levels; training, education for green infrastructure; improvement of information exchange mechanisms; evaluation of technical standards and innovative possibilities; assessment of costs and benefits.

With the recognition of green infrastructure as an effective means of solving socio-ecological problems, the theory and practice of applying a hierarchical approach is developing with clarification of the green infrastructure opportunities use at different levels of management: local, municipal, regional, state, international. This strengthened the applied component in the context of the green infrastructure formation and development project management the specified levels.

As example:

- at the inter-municipal (sub-regional) level – a methodology for evaluating municipal master plans aimed at identifying and developing regional green infrastructure (RGI) in the context of four components: natural value, environmental value, landscape value and recreational value. Tested on materials from the city of Cagliari, Italy (Lai S., Leone F., Zoppi C., 2019);

- at the regional level - development of the Maryland Department of Natural Resources (DNR) Maryland Green Infrastructure Assessment to identify and rank areas of greatest statewide environmental significance and at greatest risk of loss to development (Weber T, Sloan A., Wolf J., 2006);

- at the state level – the method of planning the green infrastructure system using landscape-functional units (the LaFU method) and its implementation in the Wrocław functional zone, Poland (Niedźwiecka-Filipiak I., Rubaszek J., Potyrała J., Filipiak P., 2019);

- at the international level - in the spatial planning of Europe. The European Union has a green infrastructure strategy since 2013 and member states are involved in several strategic and applied initiatives and projects (Slätmo E., Nilsson K., Turunen E., 2019).

The concept is developing dynamically and boisterously, as it has both supporters and opponents.

The biggest discussions were about the selection of the territory and objects related to green infrastructure, their status, accounting possibilities, and ownership. At the same time, contradictions arose regarding the fundamental points and priorities in this election and, accordingly, the projects and plans for their formation.

These are, in particular, contradictions:

- between the goals of preserving biodiversity and the goals of creating a favorable living environment for people. As an example, financing projects for the creation and maintenance of the territory and green infrastructure facilities can be economically profitable for stakeholders, but do not at all meet the goals of biodiversity conservation (Garmendia E. et al., 2016; Maksymenko N. V. & Burchenko S. V., 2019);

- prioritizing social, environmental or economic benefits;

- interests between the subjects of financing projects for the development of territories and green infrastructure objects and beneficiaries;

- in the managing system the implementation of projects for the development of territories and green infrastructure objects.

Summarizing, we note that theories and practices of green infrastructure management were formed both horizontally and vertically, starting from the alternative methods justification of stormwater runoffs volumes and cities greening local management to climate change management and biodiversity conservation.

Modern principles of sustainable development and ecosystem services had the greatest influence on the development of the green infrastructure management theory and practice. It was on their basis that various levels projects were developed using a hierarchical approach (local, municipal, regional, state, international) regarding the management of living space, biodiversity preservation, land use planning, landscape

planning of landscape-functional units, the multifunctional green areas design, the multifunctional green areas infrastructure formation.

The implementing green infrastructure practice demonstrates environmental, social and economic benefits.

Environmental benefits that society receives due to the green infrastructure facilities functioning:

- collect stormwater runoffs from streets, roofs, and parking lots, clean stormwater (rain gardens, permeable pavement, green light bulbs);
- contribute to the increase of biodiversity and create a more comfortable place for the existence of flora and fauna representatives;
- contribute to the recovery of groundwater;
- reduce the urban heat island effect, equalize temperature differences;
- improve air quality;
- provide sewage detoxification;
- deposit carbon dioxide emissions;
- ensure improvement of air quality;
- provide environmental services;
- an effective response to predicted climate changes.

Social benefits:

- increase the public space and decorate the streets;
- improve the condition of the streets;
- widen the sidewalk, which slows down traffic and increases the safety of pedestrians and cyclists;
- create a more comfortable place of existence for residents and improve the life quality;
- create a balance between the built and natural environment;
- affect the reduction of the asthma, cardiovascular and other diseases incidence;
- affect the reduction of mortality from asthma and cardiovascular diseases due to excessive heat, dry and dirty air in cities;
- affect the reduction of the psychological tension and stress level.

Economic benefits:

- ensure the creation of green jobs;
- ensure a reduction in waste water treatment costs and energy consumption;
- bioretention systems allow creating an ecological transport system;
- cost savings due to the reduction of rainwater runoffs and, heating and cooling costs;
- investment and operating costs for green infrastructure are significantly lower than for gray infrastructure;
- reduction of absenteeism from work and study due to improved health;



- the effect of green perennial plantations capitalization, their impact on increasing prestige and property value (in particular, recreation areas and parks increase the value of commercial property by 20-30%, housing by 15-20%);

- increase in tax revenues on real estate in the city budget;

- support of local business in general and the field of hospitality in particular.

Thus, in the research process, it was established:

- imperfect management of urban planning systems and urbanized territories in general, insufficient ecological component consideration lead to deterioration of the conditions and life quality in cities, which necessitates the further theoretical and methodological principles development of urban territories environmentally-oriented management;

- there is a significant deterioration in the urban environment quality, which, to a large extent, is associated with the imperfection of the urban planning processes management, the municipal economy, and the territory's social and economic environment management;

- a significant part of urban territories functioning problems is related to the neglect of the ecological component in the urban management;

- there are regulatory, legal and organizational prerequisites for the system formation of a urban territories environmentally-oriented management.

To solve these problems, it is necessary to switch to the model of environmentally-oriented management to achieve a state of balance of material, technical, socio-economic and economic needs with bio-resource and ecosystem opportunities, and the potential for assimilation of natural complexes.

The system formation basis of urban territories environmentally-oriented management should be based on environmentally-oriented principles, management methods, means and tools, which will ensure a high level of the urban area quality in general, environmental safety, social attractiveness and economic efficiency.

Based on the global green infrastructure concept applying experience, it is advisable to implement its principles and approaches in the state administration system and ensure the distribution of authority between central and local authorities.

In the organizational plan, the formation of environmentally-oriented urban management foresees: the concept development of environmentally-oriented management with economic mechanisms, state and local regulation wide use; building relationships between business entities, local self-government bodies, relevant control structures based on the application of a regulatory tools set that have an encouraging effect on environmentally-oriented activities, ensuring the high urban environment quality; implementation of a permits system, limits, procedures and rules, which are based on the norms of international environmental and life quality standards; the use

of a modern urban space organization territorial forms, which is a perspective for further scientific research.

Therefore, it is advisable to consider the urban territories' environmentally-oriented management system as an effective tool for ensuring environmental safety, human development, and the life quality of the city population.

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### **1.3. GOVERNANCE OF THE REGIONAL DEVELOPMENT IN THE CONDITIONS OF FINANCIAL DECENTRALIZATION**

#### **1.3.1. The essence of financial decentralization and its importance for regional development**

As of today, many different theories, concepts, and models of regional development have been formed. However, the search for and formation of new theoretical foundations of local development management in accordance with the challenges facing the world community in general, and Ukrainian society and each specific territorial community in particular, continues.

The transition to decentralized state administration is explained by many scientists from different countries as a general change of views on the essence of state and local administration. In recent years, the concept of new public administration (NDU) has gained significant popularity. The scientific basis of its development was the theory of “social choice” and the theory of “main actors and agents”. The first provided for the reduction of the role of state regulation and the strengthening of market mechanisms, and the second – was to become the basis for establishing relations in the public sector similar to the relations of capital holders in the private sector with managers who fulfil their will and are fully accountable to them (Rekova N. Yu., Moiseienko K. Ye., Shylina H. M., 2016).

The authors of the concept called the main features of such “managerialism” the tendency to implement the three basic parameters of this model, the so-called three E`s: economy, efficiency, and effectiveness. Thus, within the framework of this approach, the economic theory gained more weight in public administration: trends in improving the budget system, focusing on clear goal setting, analysis, and evaluation of achieved results reflected the increased influence of economic thought on the public administration system.

In general, decentralization is understood as a management system in which part of the functions of the central government are transferred to local self-government bodies; expanding the rights of grassroots management bodies (Bilodid I. K., 1970–1980).

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The described approach to the construction of the public administration system was practically implemented in Western countries, becoming an ideological factor in the transition to a new type of public administration, which was characterized by a higher level of democratization of social organization and a less pronounced dependence of territories on the centre.

According to this approach, the state should be the general subject of determining the “rules of the game” and setting standards for the entire society, while local self-government better performs the functions of local (tactical) management of the development of the territorial community and is able to respond more efficiently and quickly to challenges.

Decentralization is not just the transfer of powers or resources, it is primarily the creation of conditions for the development, and expansion of the competencies of local administrative bodies acting within their competence independently and independently of the central government. Thus, decentralization is understood as a management system in which part of the functions of the central government is transferred to local self-government bodies; expanding the rights of grassroots management bodies (Bilodid I. K., 1970–1980).

At the beginning of the 20th century, A. Yashchenko considered decentralization in the sense of local self-government, when local affairs are decided not by representatives of the central government, but by persons selected from the local population, this decentralization is democratic; and decentralization in the sense of increasing the competence of local administrative bodies acting within this competence independently and independently of the central government, although these local bodies were appointed by the central government (Yashchenko A., 1912).

Bogolepov D. concluded that in addition to the functions performed by the state as a whole, in each part of it there are needs that do not have national significance but are very important for a separate territory. On the one hand, the state cannot ensure the satisfaction of such interests. On the other hand, the localities know the needs and preferences of the population better, therefore the transfer of certain functions of the state to the local level contributes to the satisfaction of the interests of the residents of such territories (Boholepov D. P., 1929).

The researcher V. Kuibid essentially reflected the concept of decentralization in the interpretation of the administrative-territorial system of the state, which, in his opinion, is a system of territorial localization (fixation on the territory) of the administrative functions of the state, expressed in the state regional policy by means of state, regional and local administration, structures self-government and established in the relevant legislative acts with a clear division of management functions and powers (Kuybida V. S., O. V. Turchynov (ed.) 2009).



Thus, decentralization should be understood as the process of transfer from central authorities to local authorities and functions necessary for solving development issues of the respective territories.

The implementation of the decentralization process requires the presence of mechanisms that achieve effective interaction of all levels of government, ensuring its balance. These are the denationalization of property, the consolidation of appropriate communal property by territorial communities with the guarantee of its full use, the formation of regional and local budgets, the system of optimal taxation and inter-budgetary relations, the organization of effective control over the activities of public authorities (judicial and special procedures: impeachment, dissolution of parliament, state of emergency, direct presidential rule, redistribution of powers, etc.) (Kaminska N. V. 2014). Because of that, decentralization acts also as a process of improving the management system by moving this system to a higher level – publicity, that is, accessibility, which ensures its unity and integrity (Pavliuk N. V. 2016).

In full compliance with the distribution of spending powers, local self-government bodies must be provided with financial resources. Delays in the transfer of own powers, as well as violations of proportions: own revenues – own expenditures – fixed revenues and interbudgetary transfers – delegated expenditures, which are constantly observed in Ukraine, lead to the confrontation of national and local, and regional interests (Volokhova I. S. 2012).

The transfer of authority within the framework of decentralization is an extremely complex process. It concerns the sphere of finance, administration, control, regulation, reporting, and accountability, which are elements of the relationship between different levels of government. Implementation of decentralization in practice is uneven. Despite the joint efforts of political and economic factors that determine the need for decentralization, there are often gaps between the real state of affairs and goals, the cause of which can be both politics and legislation (Tsurkanova I. O. 2012). Therefore, the process of decentralization needs flexibility in its implementation. And this means that the selected models of decentralization must consider all the essential factors of its implementation, first of all, regional specificity (Pavliuk N. V. 2016).

Decentralization ensures local autonomy and contributes to increasing political responsibility, economic efficiency, openness of management decisions, that is, the transition to financial decentralization provides both political and economic advantages compared to the centralized distribution of financial resources.

In science, the following forms of decentralization are distinguished (Krysovatyi A. I, 2012, p. 83):

1) political (democratic) decentralization. Provides for the transfer of part of the powers of state power to local and regional self-government;



2) administrative (bureaucratic) decentralization consists of the delegation of functions and powers by central state authorities to local and regional state authorities, which receive partial financial (budgetary) autonomy;

3) territorial and spatial decentralization. It is a form of decentralization, which is reduced to the implementation of targeted programs and the unloading of cities and industrial complexes, including the appearance of new ones;

4) economic (financial) decentralization. Its meaning consists of the transfer of financial resources and other economic levers of influence from the central to the local level.

In the reference literature, two types of decentralization are given: administrative (bureaucratic) and democratic. Administrative decentralization means expanding the competence of local administrative bodies, which act within this competence independently and to a certain extent independently of the central government. Democratic decentralization involves the creation of an extensive system of local self-government when local affairs are decided not by representatives of the central government, but by persons elected by the local population (Shemshuchenko Yu. S. 2004). In our opinion, the most balanced approach would be to use a certain “hybrid” model, which would be able to optimally combine elements of two types of decentralization useful for Ukraine.

The implementation of decentralization processes aimed at achieving regional development requires appropriate financial support. In order to minimize the risks of financial destabilization, changes to the tax and budget system should be adopted, which will allow directing of sufficient resources to the places, as well as an organizational and legal management mechanism should be developed, which would consider the specificities of the territories.

An integral component of decentralization of public administration is financial decentralization, which acts as a kind of measure of the level of democracy and competence of public administration; the adequacy of the political system to public expectations; the level of trust in local self-government bodies, and the level of perception by the state authorities of the needs of society in general and local self-government bodies in particular; the quality of control in the public sphere and responsibility; after all, it is an assessment of the adequacy of the administrative-territorial system of the state (Boryslavska O., Zaverukha I., Zakharchenko E. 2012).

In our opinion, fiscal decentralization includes tax decentralization, namely giving local self-government bodies the right to determine the elements of local taxes and fees, including the right to set or cancel such taxes or fees, the right independently, as well as the authority to accumulate non-tax revenues in the state treasury. Budgetary decentralization covers a set of measures aimed at the distribution of income and spending powers between the levels of the budget system, as well as the ability to form,

approve and implement budgets, and ensure reporting and control. In turn, financial decentralization embodies the entire set of relations regarding the transfer of financial resources from central authorities to local self-government bodies.

Therefore, financial decentralization appears, first of all, as a complex concept that covers the process of transferring powers regarding the formation and use of financial resources of the region, which are funds accumulated in local budgets, extrabudgetary funds, and other financial resources (voluntary contributions of citizens, funds of economic entities, grant programs, projects, etc.), which makes it possible to ensure the financial independence of local self-government bodies in solving their own self-governing functions and satisfying the interests of the population, stimulate the involvement of all members of the community in ensuring the socio-economic development of the region.

The expansion of the financial powers of local government, in turn, stimulates the interest of local authorities in increasing the efficiency of the activities of all subjects of financial relations in the region and creates prerequisites for the socio-economic development of the region on the basis of inclusiveness. In this way, financial decentralization provides opportunities for local government to influence the formation of financial resources of the private sector, communal enterprises, public organizations, etc., and to involve them in the socio-economic development of the region. Financial decentralization organized in accordance with the principles of inclusiveness increases the efficiency of resource allocation and stimulates the community's participation in its own development.

As for foreign research on financial decentralization, the object of scientific interest is fiscal decentralization. The work of the American scientist Ch. Tiebout's "Economic Theory of Fiscal Decentralization" became the fundamental theory of the study of the problem of decentralization of financial resources. In the mentioned work, the scientist substantiated that under the conditions of fiscal decentralization, the public expenditures of the region's most closely correspond to the individual preferences of consumers in accordance with their needs. If the public goods provided within the community do not meet the needs of the population, then they can move to the territory of those communities where public goods are provided better (so-called voting with feet) (Tiebout C. 1961).

In the future, the ideas of Ch. Tiebout was developed in the works of such foreign researchers: V. Oates – "Fiscal Federalism" (1972) and "Political Economy of Fiscal Federalism" (1977), R. Musgrave – "Essays on Fiscal Federalism" (1977), D. Aronson and D. Hilli – "Financing of State Governments and Local Authorities" (1986), H. Rosen – "Research of State and Local Public Finances" (1986), German scientists: U. Schumacher – "Fiscal Federalism in the Federal Republic of Germany" (1993), T. Kuhn – "Theory of Communal Financial Equalization" (1995), V. Reshta – "Problems

of Federal Management: The Place of New Lands in All-German Financial Equalization” (2000), F. Scharf – “Perspectives for the Development of German Federalism” (1999), Sh. Blankart – “Analysis of German Fiscal Federalism” (1996), as well as in the works of Swiss scientists B. Fry and R. Eichenberg – “New federalism: the idea of FOCJ” (2001) and “Debatable issues of political and economic perspectives of federalism” (1998) (Fedosov V., Oparin V., Safonova L. (2004).

V. Oates considered decentralization as the right of independent decision-making by decentralized units. The decentralization theorem of V. Oates became the second and most influential classical theory, which establishes a compromise between the centralized and decentralized provision of public goods in favour of centralization in the event that the average preferences of residents of different regions are the same, and the consumption of public goods causes side effects (side effects are additional the consequences of a certain phenomenon, for example, the stench from the plant is additionally unpleasant for the neighbours, at the same time, the presence of a well-kept flower garden is a positive side effect or spillover effect for the neighbours). At the same time, a decentralized approach to the provision of public goods maximizes social welfare if preferences differ between regions and spillover effects are absent. It is worth noting, however, that the theorem is based on the premise that the government takes care of increasing public welfare, and in the case of centralization, the state ensures the unity of the approach to the provision of public services (Oats W. 1999); Rekova N. Yu., Moiseienko K. Ye., Shylina H. M. 2016, p. 117).

R. Musgrave had similar views to V. Oates, who formulated the following principles of financial decentralization (Musgrave R. A. 1959):

1) the principle of conformity. The decision on the production of public good must be made by those citizens who live in the territory where benefits from payments are received and taxes and fees to finance the public good will be administered;

2) the principle of centralized redistribution. Changes in distribution must rely on the central government, which has the necessary leverage to implement distribution policy;

3) the principle of financial equalization. In the absence of an adequate policy of individual distribution, the central government must ensure some degree of equalization between better-off and worse-off areas;

4) the principle of national desired goods (the central government can stimulate the provision of certain local public goods with targeted transfers, since their production is characterized by external effects, or they are particularly significant goods from a national point of view.

Note that financial decentralization, like any complex socio-economic phenomenon, along with its positive impact, carries a number of threats, which were systematized by us on the basis of research by Ukrainian scientists in fig. 1. The main,

in our opinion, advantage of financial decentralization is the more complete provision of the needs of residents of territorial communities in public goods.

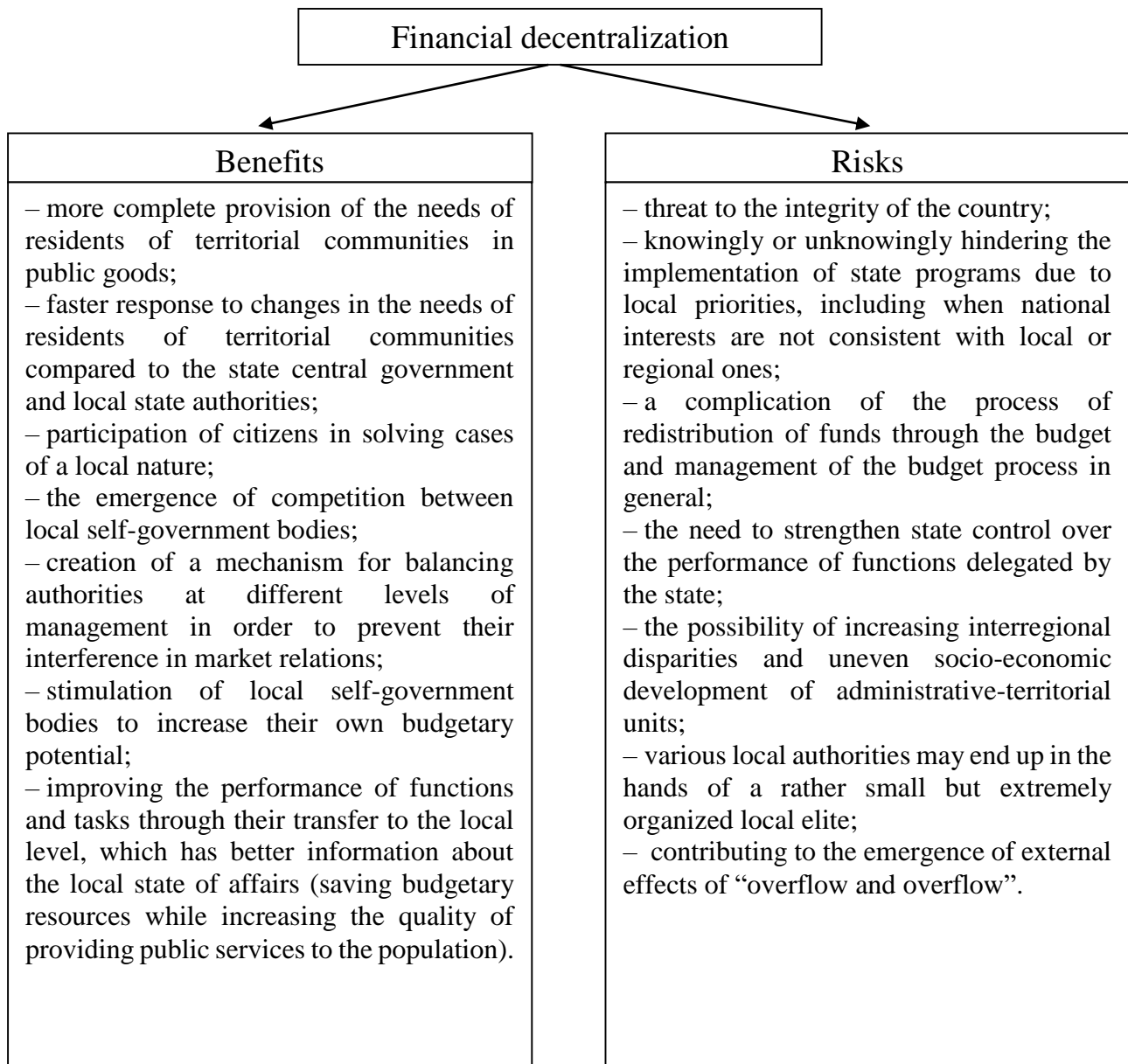


Fig. 1. Advantages and disadvantages of financial decentralization

*\*Systematized by author based on (Krysovatyi A. I., Herchakivskiy S. D., Ibrahimov M. R. 2012, p. 94-97; Osypenko S. O. 2013, p. 41; Vozniak H. V. 2015, p. 255; Salo T. V. Zahorskyi S. V., Lipentsev A. V. 2013, p. 325).*

Decentralization is a flexible term, it is perceived differently in different countries and different expert circles. In Ukraine, the process of financial decentralization has acquired its characteristic features and characteristics, which were determined by the sequence of adoption of the legal framework of the reform, the essence of legislative changes, and the coherence of the provisions established in them.

The first step towards changing the administrative-territorial system of the country and decentralization of power was the adoption of the Law “On the Voluntary Association of Territorial Communities”, which defines a specific mechanism for the voluntary association of territorial communities. The adopted law regulates relations arising in the process of voluntary unification of territorial communities of villages, towns, and cities. New approaches to financing the united territorial community were determined as a result of changes in the taxation system, in the financing of the educational and medical spheres, and at the expense of funds from the Regional Development Fund.

The funds of regional development funds will be directed to the support of united territorial communities, the development of infrastructure, and administrative centres in communities. One of the important conditions for the allocation of funds is compliance with the priorities defined in the State Strategy for Regional Development, regional development strategies, and action plans for their implementation.

The concept of reforming local self-government in Ukraine (Cabinet of Ministers of Ukraine, 2014) defines that, according to the European Charter of Local Self-Government, local self-government means the right and ability of local self-government bodies within the limits of the law to regulate and manage a significant part of public affairs that fall under their competence, in the interests of the local population. This should ensure the effectiveness of the local self-government system, where financial decentralization is one of the most important components. The main task of introducing decentralization is to increase the role of local bodies in managing the development of regions, strengthen their activity in creating conditions for the activation of economic processes, and ensure economic growth.

Effective state management in the field of regional development involves the creation of a basis for the implementation of an effective state regional policy – a mechanism and tool of state management of regional development that will contribute to solving the problems of regions, requires first of all the decentralization of state powers by transferring them to the local level with the simultaneous transfer of relevant financial resources, improvement processes of strategic planning and implementation of assigned tasks at all levels, the introduction of an effective mechanism of coordination of actions of central and local bodies of executive power, local self-government bodies during the implementation of industry priorities and tasks at different territorial levels.

According to Clause 2 of Art. 9 of the European Charter of Local Self-Government, at least part of the financial resources of local authorities must be formed at the expense of local taxes and fees, the amount of which they have the authority to set within the limits of the law. Thus, the need for local self-government bodies to have sufficient financial resources, which they can freely dispose of, is provided for by

legislation. In addition, LGUs have the right within the framework of the national economic policy to their own adequate financial resources, which they can dispose of within the limits of their powers. According to Clause 4 of the Law “On Local Self-Government”, LGUs function on the basis of legal, organizational and material, and financial independence within the limits of the specified powers (Verkhovna Rada of Ukraine, 1997).

Despite the indisputable progress on the path of decentralization achieved over the past 20 years, the system of local self-government in Ukraine has certain shortcomings that must be eliminated in the near future.

It is recognized that the main problems that objectively prevent the holistic implementation of the principles of the sustainable spatial development of the European continent in Ukraine are: the imperfection of the administrative-territorial system and, as a result, significant administrative obstacles for managing the process of effective use of land resources; insufficient level of development of local self-government as an efficient institution of public power; an imperfect financing mechanism for local and regional development programs. Among the most urgent problems, we can name such as the small number of powers at the basic municipal level, as well as the unstable and unsatisfactory model of local self-government financing, according to which revenues from own sources constitute a relatively small share of revenues to the local self-government budget (Abramchuk Ya. I., 2016).

The formula for the distribution of general transfers (general subsidy) is neither sufficiently stable nor transparent. Moreover, the distribution formula applies only to the district level, while transfers to the budgets of the basic municipal level are not determined by any clear formula and remain extremely subjective. The volumes of targeted subventions from the state budget also do not meet and do not meet the minimum needs of local budgets, which forces local self-government bodies to direct their own incomes to finance, especially the education sector (Abramchuk Ya. I., 2016).

The search for ways of developing local self-government bodies on the basis of sustainable development includes the protection of natural resources and maintaining a balance between economic, social, ecological, and spatial spheres. The growing demand for democratic principles, transparency, and subsidiarity has prompted the global debate on good governance to discuss the possibilities of internal reform that would bring the EU closer to its citizens, make it more effective and strengthen the democratic legitimacy of its institutions.

Smart management is based on integration into the activities of state authorities, as well as public organizations and residents for effective management of the territory. This means that many activities are carried out through partnerships and collaborations

between different stakeholders. The quality of public administration and management in a country is a key factor in its economic activity and the well-being of its citizens.

The goal of intelligent co-governance is the principle of open government. This allows citizens to be involved in the management process. This principle creates the basis for the creation of effective public administration with innovative public services.

In order to solve the mentioned problems and develop new approaches to the implementation of the policy of sustainable spatial development in Ukraine, the following components should be taken into account: a harmonious combination of the norms of various laws that relate to the planning of the territory's development; simplification of decision-making procedures regarding the management and use of land, forest and water resources; formation of the geospatial information infrastructure in Ukraine by clearly demarcating the powers of local self-government bodies and executive power bodies in matters of property resource management; financial support of regional development programs and projects, in particular within the framework of the Regional Development Fund, which should financially support the implementation of infrastructure projects on a long-term basis (Abramchuk Ya. I., 2016).

Achieving Global Sustainable Development Goals is a process of ensuring effective hierarchical interaction and changing the concentration of functions of social, economic, ecological, informational, and innovative elements of the ecosystem as a living environment for people for the full and accessible satisfaction of their various needs for all levels of current and future generations of people.

Sustainable development can be considered in global, national, regional, and local terms. It depends on the spatial system level:

- the global level of sustainable development, the essence of which is the uniform development of the world community, primarily in peace and security, preservation of the natural environment; harmonious development of all processes in the biosphere; regulation of this process is carried out by international organizations and interstate program documents;

- the national level of sustainable development includes individual countries, strategic management of which is carried out at the level of state governments;

- the regional level of sustainable development, which is characterized by a balance between the social, economic, and ecological subsystems of the region as a whole ecosystem, which is managed at the level of state and regional authorities;

- the local level of sustainable development covers cities, rural areas, and districts, which conditions the development of a sustainable development management mechanism based on regional and local strategies with the participation of local self-government bodies and communities;

- the micro level of sustainable development is ecosystems at the level of enterprises and family farms.

A tangible problem that emerged already in the process of creating united territorial communities is the problem of ensuring the real capacity of newly created united communities.

Consequently, decentralization fundamentally changed the management system in the state and ensured the transition from centralized Soviet management to the implementation of European management standards. And this is a democracy, subsidiarity, and the responsibility of the authorities.

The new system of administrative-territorial organization will allow the formation of quality management of the European model - based on the indicators of human potential development, quality services, and sectoral reforms. It will also make it possible not only to build a high-quality management model, financial decentralization will allow the effective use of funds locally.

The OTG formed in Ukraine works under a new management system and implements much-needed local reforms: education, primary health care, the introduction of new administrative services, and social protection.

Thus, the need for financial decentralization of power is determined by the very logic of regional development, which in modern conditions seems impossible with the preservation of the existing overly centralized management model (Pavliuk N. V. 2016).

So, financial decentralization is the process of transferring financial resources, powers, and decision-making rights from central authorities to local self-government bodies in order to more effectively meet the needs of the population in obtaining public goods, intensifying the economic growth of the respective territories.

In the conditions of a full-scale war in Ukraine, the model of introducing a national ideology and a strategy for the sustainable development of territorial communities does not work “at full strength” and is in crisis. This is an opportunity to create a “clean page” on which Ukraine has a chance to put the best experience gained by the world. It is necessary to study and use the experience of ensuring the sustainable spatial development of territorial communities, in which the safety and well-being of people, human capital, embodied in the achievements of science, education, innovations, and high moral values, are inseparable, equal in size and such that they mutually complement and enrich each other.

### **1.3.2. European experience of regional development governance under conditions of financial decentralization**

The democratic transformations taking place in the country require the formation and scientific justification of regional development management mechanisms in the context of defined European standards. In this regard, the question of researching the



activities of European and other international organizations that have developed and are successfully implementing a unique set of tools for managing local and regional development, which is a good example for Ukraine, is becoming important.

One of the goals of the EU is to achieve sustainable development of regions. The concept of sustainable development is reflected in the legal field of the European Union, where it is determined that the processes of social and economic development, satisfying human needs and aspirations, should be carried out considering the need for environmental protection. The concept of sustainable development should be reflected at the international, state, regional, and local levels since the effective course of each process on a global scale are determined by its appropriate development at the macro levels. The sustainable development of the region involves the elimination of poverty and the gradual reduction of interregional differentiation in people`s living standards. In the conditions of financial decentralization, local authorities should use the opportunities provided to them and consider the need for balanced development of their territories in order to reduce and gradually eliminate existing interregional differences. Subordinating economic processes to the concept of sustainable development of the region will ensure the elimination of social inequalities (Cherevko I. 2013), and the improvement of quality and living conditions in the region, which is the main determinant of financial decentralization reform.

Based on these positions, programmatic decisions are made at the state and interstate levels. One such program is the ten-year strategic program of the European Union “Europe – 2020” adopted in 2010. It is aimed not only at overcoming the negative consequences of the 2008-2009 crises, but also at transitioning to a new sustainable “green” growth trajectory. It is emphasized that this growth should be intellectual, sustainable, and inclusive with the involvement of all sectors of the economy and all layers of society in the relevant processes. These three priorities mutually reinforce each other and should help the European Union as a whole, and each country separately, to achieve a high level of employment, productivity, and social unity.

To follow these priorities, a package of five goals was formed in the following areas: employment, innovation, climate change and energy, education, and the fight against poverty and social exclusion. It is necessary to specify specific parameters characterizing the stated benchmarks, including achievement of a 75% employment level among the population aged 20-64; increasing the level of investments in research and development up to 3% of the GDP of the European Union; reduction of greenhouse gas emissions by 20% (perhaps by 30%) in relation to the level of 1990, as well as an increase in the share of renewable sources in the total volume of energy consumption to 20%, an increase in energy efficiency by 20%; bringing the share of persons who have completed three-level education in the age group of 30-34 years to 40%; a

reduction of 20 million from the number of those on the verge of poverty and social exclusion.

For the past few years, the world has been talking about the need for a more socially inclusive approach to generating economic growth. Inclusiveness means that most members of society experience the results of economic growth. The World Economic Forum (World Economic Forum) calculates a composite index that ranks countries based on their combined KPI indicators – the inclusive development index (IDI). This new global index has a more comprehensive sense of the relative state of economic development compared to conventional rankings based on GDP per capita (Inclusiveness of the Economy: New Standard of Economic Growth, 2017).

The study and adaptation of foreign experience in managing the development of the region under conditions of decentralization, in particular the peculiarities of the formation and use of financial resources of administrative-territorial units at the local and subnational level, is an important component of ensuring the effectiveness of similar processes in Ukraine and achieving rapid rates of positive transformations. World practice shows the inextricable link between the effective functioning of local self-government bodies and their ability to dispose of appropriate financial resources.

In this context, local self-government bodies need to be more actively involved in this activity – as a “natural intermediary” between European institutions, the national government, and citizens (taking into account the principle of subsidiarity), since the justice and well-being of society also depend on taking into account and achieving European standards in the field of local or regional development, as well as the practical implementation of innovative tools in the field of local and regional development into Ukrainian practice (Abramchuk Ya. I. 2016).

The formation of the theoretical basis for the introduction of fiscal decentralization to public administration in Ukraine calls for an in-depth study of existing forms of decentralization in the world.

According to M. Pasichnik, the beginning of the history of the decentralized state “can be considered the diametrically opposed ideas regarding the ideal organization of the state of the French politician and jurist Jean Beaudin (1529-1596) and the German jurist and state-building theorist Johann Altusius (1557-1638)” (Pasichnyk M. 2010).

S. Herchakivskyi and O. Kabash hold a different opinion, emphasizing that the process of decentralization in Europe acquired more clear and defined features in the 18th-19th centuries when this concept was first enshrined in French legislation.

Thus, in France, the theory of decentralization arose on the eve of the Great French Revolution of 1789, as a kind of reaction to the Napoleonic reforms, which established a strong centralized bureaucratic apparatus of power and to a large extent, the transformation of local finances of post-conflict territories on the basis of fiscal decentralization levelled the principles of local self-government. The main

ideological postulate of the decentralization theory was the provision on the justification of a clear division of administrative affairs into those that are the result of local self-government and state-wide affairs that are accordingly delegated to communities (Herchakivskyi S. D., Kabash O. R. 2009).

Unlike decentralization in its general sense, which has evolved along with the ages of mankind, fiscal decentralization has a not-so-long history. The prerequisites for the emergence of fiscal decentralization were noted in Europe as early as the 11th-12th centuries. As noted by S. Herchakivskyi and O. Kabash, “as early as Richard I (1157-1199), in need of money to finance the crusades, he began to actively use a quick and effective means of replenishing the state treasury - the sale of charters to cities that guaranteed them certain privileges” (Herchakivskyi S. D., Kabash O. R. 2009).

Regarding this situation, A. Smith noted that “cities, with the consent of the Crown, received the rights of self-government, judicial proceedings, construction of fortifications, creation of armed detachments to maintain law and order” (Smith A. 1992, p. 549). Among the most important in this, A. Smith attributes the change in tax status after the granting of charters, which caused the presence of such power in certain administrative-territorial entities in property and legal aspects that the king could not collect any taxes from them without an agreement, except for the redemption fee from the city (Rekova N. Yu., Veriha H. V., Chystiukhina Yu. A. Ets. 2017).

The scientific works of representatives of the neo-institutional school of economic theory represent the theoretical and methodological basis for the formation of fiscal decentralization. Thus, the emergence of fiscal decentralization is associated with the ideas of the American economist Ch. Thiba (1924-1968), which he set forth in his work “The Economic Theory of Fiscal Decentralization in Public Finance: Necessity, Sources, and Use” (1961). The scientist notes that “decentralization increases the level of competition between local authorities, as a result of which the volume of the public sector is significantly limited” (Tiebout C. 1961, p. 93). The author also highlights the positive manifestations of decentralization due to increased efficiency, as local authorities have more complete information about the needs of representatives of territorial communities.

Among the founders of the theory of fiscal decentralization, the views of R. Musgrave are also distinguished, they formed a balanced approach to decentralization and believed that "the provision of public goods at the local level is effective in the case when benefits from consumption are received by local residents, such as for example, street lighting. The provision of public goods at the federal level is effective in the case when the benefits of consumption are nationwide, for example, in national defence (Musgrave R. A. 1959, p. 105).

A significant contribution to the development of the theory of decentralization was also made by the English economist V. Oates, who in 1972 derived the “theorem

of decentralization”: “If in an isolated territorial formation there is an opportunity to provide a public good and its marginal costs are equal to the average costs of its production in each of the formations regardless of whether they are provided centrally or decentralized, the provision of this good by local self-government bodies in the amount corresponding to real demand will always be more effective than its provision by the central government in a fixed amount (at a constant level)” (Oats W. 1999, p. 243).

Thus, in the works of foreign scientists, the opinion that the term “fiscal decentralization” means expanding the powers of local authorities in the process of managing local finances is observed.

Decentralization theory arose in France on the eve of the Great French Revolution of 1789 as a reaction to the Napoleonic reforms, which established a strong centralized bureaucratic apparatus of power and significantly levelled the principles of local self-government. The main ideological postulate of the decentralization theory was the provision on the substantiation of a clear division of administrative affairs into those that are the result of local self-government and state-wide affairs that are accordingly delegated to communities (Herchakivskyi S. D., Kabash O. R. 2009, p. 134).

In modern studies, foreign scientists consider financial (fiscal) decentralization as the transfer of financial resources and powers from the central to the local level. Scientists also analyze the actions of citizens and business entities within the framework of decentralization, paying special attention to the economic and social effects of the relevant decisions.

As part of the study of fiscal decentralization, Roy Ball and Sally Wallis distinguish two models of financial system organization – mandated and autonomous. According to the autonomous model of relations between the centre and the provinces, the central government gives the provinces the right to make decisions on the appropriate system of inter-budgetary fiscal relations. The central government can even refuse to monitor the adopted programs and their results.

This is the policy pursued by the USA. According to the mandate model of relations, the centre dictates to the provinces the rules for organizing fiscal relations between the provincial and local levels (Germany). It is believed that the purpose of applying the latter is to create a system in which fiscal relations between the provincial and local levels would reflect the relations between the centre and the provinces.

In turn, the English experts G. Hughes and S. Smith, researching the budget systems of the countries of the Organization for Economic Cooperation and Development, grouped the models of fiscal decentralization into four groups based on the similarity of approaches to the regulation of inter-budgetary relations, the peculiarities of the philosophy of budgetary federalism, the ratio of the roles of central

and subnational authorities. The first group is characterized by the relatively high autonomy of regional and local authorities, which relied on broad tax powers. The second group includes countries with a particularly large share of non-central government participation in financing social expenditures. The third group includes federated countries that have a significant degree of autonomy of budgets of different levels in combination with a developed system of their cooperation. Models of fiscal decentralization of the fourth group are characterized by significant financial dependence of regions on the central budget (Karlin M. I. 2016, p. 288).

An important step in the establishment and financial strengthening of local self-government in Europe was the signing in 1985 by the member countries of the Council of Europe of the European Charter of Local Self-Government.

The European Charter established that local government is one of the main foundations of every democratic regime; the main principle should be the right of citizens to participate in the management of the state as a whole and at the local level (European Charter of Local Self-Government 1985).

An important requirement of the Charter is the official definition and consolidation of the main principles of the functioning of local self-government in the state legislative field and in the main law of the country – the Constitution. According to Art. 3 of the Charter clearly defines the right and ability of local authorities to partially participate in national affairs, as well as to regulate and manage state issues affecting the local population

Financial provision of local self-government occupies a special place in the Charter. In Art. 9 stated that the city government has the right to its own resources, which are used at its discretion in accordance with the socio-economic development program. Thus, we see that thanks to the Charter, the territorial units of European countries formed legal authorities and financially powerful territorial communities. It not only gave local self-government a legal status but also the opportunity to manage within their competence (functions) in the interests of citizens.

Mutual aid and protection of financially weak territorial communities and their authorities are laid down in the Charter. Such assistance is provided through transfer payments (basic subsidy, subventions, reverse subsidies, additional subsidies), while the higher authorities do not have the right to pressure and interfere with the management of local bodies in the implementation of independent policies.

The functioning of local finances, according to the Charter, is as follows:

- local authorities must independently form their own financial resources;
- own financial resources must be at the full disposal of the authorities on a legislative basis; – a quarter of own funds can be formed at the expense of local taxes and fees;

- local authorities have the right to set the amount of local taxes and fees (within the limits of the law);
- the financial mechanism for the formation of own funds must comply with all laws and regulations, and each element of the financial mechanism is interconnected;
- local authorities should implement a policy of financial equalization of financially weak areas;
- financial assistance is provided in the form of subsidy payments without a special purpose and contributes to the strengthening of local authorities, etc.

Thus, the European Community emphasizes the strong financial basis of local budgets, which are based on the system of local taxation (Matsedonska N. V., Klividenko L. M. 2017).

Analyzing the features of decentralization in countries with a transition economy and developed countries, R. Bird noted that the main criterion that certifies the financial autonomy of local authorities, according to the author, is their right to make decisions in the field of their own finances. If such a right is not provided for in the legislation, then the local government does not have financial autonomy. At the same time, the basis of the financial resources of local self-government bodies is the income from local budgets, which the scientist divides into 3 groups:

- tax revenues;
- revenues from the provision of local government services (territory cleaning, garbage removal, communal services);
- income from communal property (rent, income from communal property).

Ukraine ratified the association agreement with the EU. European integration is the main foreign policy priority of the state. Therefore, for the formation of financially self-sufficient territorial communities in Ukraine, it is necessary to consider the experience of European countries.

Methodologically, the improvement and development of public management systems in the EU member states at the first stage involved the implementation of the principles of European management. In the second stage, specific management mechanisms and tools are integrated into the national public management systems, which achieve the set management goals. Practical steps in the implementation of the Association Agreement between Ukraine and the EU will inevitably lead to the fact that European standards established in the Community`s heritage will have a decisive influence on the establishment and development of public administration in Ukraine. And the implementation of institutional changes through the decentralization of power forms the organizational basis for ensuring Ukraine`s integration into the European Union.

As shown in Table 1, the systems of interbudgetary distribution of taxes most often include personal income tax, corporate income tax, and VAT. These taxes are

highly profitable and therefore attractive for local budgets. At the same time, part of the income from these taxes is credited not only to the local but also to the central budget of a country quite often. The procedure for making changes to the terms of the interbudgetary distribution of taxes is determined in the relevant laws, changes to which are rarely made (Tsymbaliuk I.O. 2022).

Table 1

The main elements of the inter-budgetary distribution  
of taxes in some unitary countries of Europe

Country	State taxes coming to local budgets	The procedure for making changes to the distribution formula	Frequency of making changes to the distribution formula	The presence of elements of horizontal alignment
Greece	Transaction Tax and Specific Service Tax	By the government	Rarely	No
Denmark	Personal income tax, VAT, excise duties	The government through the law on the distribution of taxes	–	No
Italy	Personal income tax, VAT, excise duties	The Law on Finance	–	No
Spain	VAT, excise duties	By the Parliament	Rarely	No
Hungary	Real estate taxes	The Law on Local Taxes	Rarely	Yes
Finland	Income tax	The government through the law on the distribution of taxes	–	No
Czech Republic	Personal income tax, profit tax, VAT	The government through the law on the distribution of taxes	Irregularly	Yes

*\*Built by the authors*

On average, for the unitary countries of the European Union (excluding post-socialist ones), local taxes and fees provide 42% of the total revenues of local budgets and 77% of tax revenues. In the OECD countries as a whole, the first position in the structure of tax revenues of local budgets was occupied by personal income taxes – 33.5%, and the second – was by real estate taxes (28.6%).

Important changes in the formation of local budgets in many countries (Hungary, Iceland, the Netherlands, Portugal, as well as at the local level in Spain) include the

transition from unlimited powers to determine tax rates to powers to determine them subject to restrictions set by central authorities.

When using national taxes as a source of income for local budgets, local government units do not have the right to change tax rates or adjust the tax base (due to the provision of tax benefits), but they can initiate changes to the conditions of inter-budgetary distribution of taxes. Quite often, the adjustment of such distribution is aimed at solving the problems of horizontal financial equalization.

Therefore, for a successful decentralization reform, it is necessary to empower local authorities to respond to changes in the population's demand for local public goods and services.

It is important to study the experience of the countries of the European Union in matters of decentralization of management and finance. Especially the experience of those countries and regions that have already passed similar tests at one time. Therefore, the numerous initiatives of foreign specialists who are going to join the reconstruction of Ukraine as a result of a full-scale war are relevant to the communities of Ukraine.

### **1.3.3. Recommendations for improving the strategic management of the development of the region in the conditions of financial decentralization**

When human lives are under threat, millions of people are at risk, in the conditions of a full-scale war in Ukraine, it is time to rethink and confirm with the international community its obligations regarding the effectiveness of the strategy of the sustainable spatial development of regions and territorial communities.

The basis of these commitments should be specific actions and reforms at the national, European Union, and world civilization levels, capable of supporting universal values and contributing to global recovery and a sustainable future based on inclusive growth.

The effectiveness and consistency of the activities of local self-government bodies depend on a systematic strategic vision of the main areas of development of local communities in the medium and long term.

The non-systematic state policy of regional development, which has been observed in Ukraine for a long time, has become one of the main reasons for the economic, social, and informational unpreparedness of the regions and the country in general for new external and internal challenges. It was considered the main thing that the general trend of macroeconomic indicators was positive. But for the security and harmonious development of the state, it is necessary to reduce as much as possible the disparities in the social, economic, and humanitarian development of its regions, because not only the low or high level of their economic development can serve as a



threat (low leads to impoverishment and deterioration of the socio-psychological condition of the population, high – to the opinion that the region as a donor for other regions should have certain preferences before them), but also the difference in humanitarian development.

Along with changing approaches to the formation of state regional policy, it is expedient to update the mechanisms of its implementation. They should be aimed at creating conditions for the self-development of regions and clearly correspond to the set goals. Also, a sufficient variety of mechanisms should be provided, and more tools, forms, and methods of establishing interaction between subjects of regional policy should appear. For this, it is necessary to study the experience of other states, theoretical and practical aspects of the selection and application of the mechanisms of the new regional policy, to form databases for their practical use. The new regional policy should be based on the methodological principles of management transformations and consider laws, laws, and management principles. Each region needs to define its mission, which will help to balance internal regional needs and its role in the state and beyond (Kuybida V. S., O. V. Turchynov 2009).

Imperatives to improve the efficiency of managing the development of the region are rethinking the opportunities and threats to the development of the region, which involve both current and strategic transformations of the financial environment under the influence of a number of factors, which, along with the processes of decentralization, are factors of a global nature, the consequences of which will be felt in the strategic perspective.

Modern challenges for achieving sustainable inclusive development of the region are rethinking regional development policy OECD. (Inclusive Growth 2019). The problem of eliminating economic inequality between regions should be solved with the help of local policies. In the context of this, the management system should include a permanent analysis of the reasons for the appearance of significant differences in the productivity of different regions and the determination of what consequences and effects the unified policy at the national level can have in different regions. In particular, persistent regional inequality leads to growing dissatisfaction with the economic, social, and political status quo in backward regions. In some cases, this discontent is exacerbated by growing cultural differences between economically successful urban regions and other lagging regions. In order to solve the problem of inequality between regions and the resulting dissatisfaction of the local population, it is necessary to develop a regional development management policy at the local level, which would consider the factors specific to the region that cause persistent regional inequality (OECD Regional Outlook 2019).

It is important to ensure the adaptation of regional development policy to future megatrends. Analyzing the most important megatrends will allow us to determine how

they will affect regional politics in the coming years. Assessment of current trends and forecasting of their course in the future should be taken into account when developing a regional development policy strategy focused on strengthening the management system taking into account future trends (OECD Regional Outlook 2019).

Among the dominant megatrends that will determine regional development from a strategic perspective, three main trends can be distinguished:

1) development of new technologies, automation, and digitization (transition of the information field to digital technologies);

2) demographic changes characterized by the level of population aging, migration processes, and urbanization;

3) environmental changes, the consequence of which will be increased attention to environmental problems.

Regions face the continuous challenge of adapting to technological change. This challenge may become more difficult in the future as the rate of technological change increases.

None of the technological changes will have only positive or only negative consequences. Unmanaged or poorly managed, they can do more harm than good, but with the right management decisions and effective regional policies, these changes can have the potential to improve economic outcomes and the quality of life of the population (OECD Regional Outlook 2019)..

4. Adapting the management of the region to demographic and ecological transformations and considering the relevant long-term prospects in the financial policy of self-governing bodies. When developing a regional development policy on the basis of inclusiveness, the factor of demographic changes is one of the most important, which determines the consideration of global demographic and environmental trends, in particular, the social and economic consequences of natural population decline and aging. The development of regions from a strategic perspective will be determined by three types of demographic flows of the population: 1) the movement of people from rural areas to cities; 2) regional and local consequences of international migration; 3) the development of the service sector, in particular tourism, which is becoming an increasingly important factor for many economies.

The consequences of environmental megatrends related to climate change are important for the development of regions.

5. Innovative multi-level management to solve future problems. The outlined technological, demographic, and environmental changes will obviously have an impact on the formation of financial support for regions, in particular on the dynamics of tax payments to local budgets. Therefore, the strategic direction of improving the management of the development of the region in the conditions of financial decentralization is the introduction of innovative approaches and the emphasis on

public investments at the subnational level.

Stronger multi-level governance and financing systems can help countries seize future opportunities. The regulation of the multi-level system of governance and the fiscal system acquires special importance in conditions where global megatrends can deepen territorial disparities.

Many of the outlined trends will have an impact on the local taxation system. The tax base of some regions and cities can change dramatically due to demographic shifts, changes in the labour market and business income, as well as changes in land values and housing prices. This may lead to an increase in disparities in the fiscal capacity of the regions.

Preliminary analysis has shown that there are significant territorial differences in the development of regions, which may deepen if countervailing policies are not implemented. Thus, vertical and horizontal alignment mechanisms between regions will gain more and more importance. An effective operating system of inter-budget equalization will make it possible to reduce the disparity in the incomes of the population of different regions, which is one of the requirements of inclusive development. In addition, multi-level governance systems must be adapted to mitigate the growing disparities between regions and cities.

To be fit for the future, other characteristics of multi-level management systems are equally important. Policy formation should be done at the appropriate scale, considering, for example, functional urban areas and connections between rural and urban areas. To ensure this, it is necessary to develop appropriate coordination mechanisms at different levels of government and between local jurisdictions (Tymbaliuk I.O. 2022). In addition, national governments should have consistent policies for urban and rural areas respectively to ensure that different national policies are aligned with their impact on these areas.

When managing the development of the region, it is necessary to consider the interests of all parties interested in this process, which is possible by developing strong, trusting, and cooperative relations with the private sector and the community, agreeing on goals and incentives and creating inclusive institutions.

Agreeing with the opinion of Robinson J. (Robinson James 2018) it can be argued that Ukraine currently has all the necessary prerequisites for creating inclusive institutions, i.e. effective state authorities accountable to the people. The state collects taxes and enforces laws, while society controls everything.

Communication – for example, establishing a dialogue and keeping feedback procedures simple – is a critical approach, as it helps clarify what is expected from different parties. Although these procedures may imply some transaction costs in the short term, local governments should keep in mind the long-term benefits, especially as a way to be well-prepared for potential problems arising from megatrends (OECD

Regional Outlook 2019).

The level of funding for regional development today, despite the positive effects of the introduced financial decentralization reform, is insufficient to adapt to the future consequences of global megatrends. Under such conditions, in order to increase financial capacity, regions should optimally use existing and potential finances, and increase the efficiency of using available resources by improving planning, selection, and management of investments to ensure sustainable development. However, since public sources of financing are insufficient to cover the investment needs caused by megatrends, regions need to seek financing for relevant projects from the private sector.

The regional development strategy in terms of financial decentralization should consider the consequences of technological, demographic, and environmental changes on subnational fiscal systems (Table 2).

Table 2

The impact of global trends on various types of taxes at the regional level is possible

Types of taxes	Environmental changes	Demographic changes			Technological changes	
	Energy transition	Aging	Urbanization	Migration	Transition to the digital information space	Automation
1	2	3	4	5	6	7
Personal income taxes		It reduces the number of employees and reduces personal income tax.	May increase personal income tax in cities as more people move to urban areas; reduce personal income tax in rural areas.	In areas with positive net migration, personal income tax revenues may increase.		Lowers the personal income tax rate in regions experiencing significant job losses from automation.
Corporate income tax			May increase, especially in urban areas due to agglomeration effects.		Profits in the digital economy go disproportionately to large companies based in only a few regions. Thus, the ongoing digitization is likely to lead to the concentration of corporate income tax revenues in several regions.	

Table 2

1	2	3	4	5	6	7
Property taxes		The strengthening of the role of pensions in the incomes of the population may cause a decrease in the solvency of the population to pay property taxes, which in their essence are luxury taxes.	Urbanization can raise land prices and increase property tax revenue in cities. In non-urban areas, property values and property taxes may decrease.		Technologies such as geographic information system tools can help identify properties and thus improve the efficiency of property tax collection.	
Taxes on goods and services	The transition to alternative energy sources and electric vehicles will reduce the tax base for petroleum products and fuel and reduce excise tax revenue				Online stores can increase the complexity of VAT collection and regulation, but some technologies can also help track consumption and services.	

*\* Built by the author based on data from: (OECD Regional Outlook 2019).*

It is possible to flexibly adapt the management of the development of the region to future changes in the financial system at the sub-national level, provided that the authority for the administration of local taxes and fees is transferred to the level of UTC. Providing a legislative basis for ensuring the payment of tax payments, regarding the establishment of rates and benefits for which local authorities are already empowered in accordance with the limits set by the Tax Code, will strengthen the direct interest of local self-government bodies in stable and sufficient revenues of community budgets, will contribute to the development of effective measures to minimize the negative impact of megatrends on the elements fiscally significant payments (changes in the number of payers, the size of the tax base) and stabilization of the level of financial capacity of the region.

In addition, it is important at the legislative level to create the basis for the formation of inclusive regional development management institutions and provide the population of communities with modern mechanisms and tools to influence local

authorities and participate in decision-making.

It is also important to improve the system of forming the appropriate resource base of local self-government, as well as to preserve financial decentralization in the State budget for the following years.

The destruction of cities and villages, which we learn about every day since the beginning of the full-scale invasion of Russia on the territory of our state, are open wounds on the body of Ukraine. Ruined communities, burned to the ground residential buildings, and bombed churches, and private residences, farms, and factories. The list is extremely long and tragic. After all, it is not just about the square meters of industrial or residential areas, but about the destroyed historical heritage, about the broken destinies of people who suddenly remained as if in the middle of the water, about lost jobs, about enterprises that provided everything necessary for the citizens of their country and not only.

The problem of their rapid reconstruction and diversification of the development of communities has been on the rise since the first days of the war. The issue of the development of territorial communities is extremely acute, given the forced migration of the population from war-torn regions to safer ones and their involvement in community life.

### **Conclusions**

Based on the results of the study of the theoretical foundations of regional development in the conditions of financial decentralization, the following conclusions were drawn:

1. The need for further research into the theoretical and institutional foundations of regional development has been proved, the implementation of which allows updating the vision of regional development in view of the implementation of the policy of decentralization of power. It was determined that regional development is a process of economic, social, environmental, regulatory, and other changes in regions that lead to an increase in the quality of life of the population and meet the goals of the state, regional, and local planning documents. It is substantiated that at the current stage the concept of self-development of the territory on the basis of inclusiveness is being updated to increase the effectiveness of regional development at the local level.

2. It has been established that fiscal decentralization is the process of transferring financial resources, powers, and decision-making rights from central authorities to local self-government bodies in order to more effectively meet the needs of the population in obtaining public benefits, intensifying the economic growth of the respective territories. At the same time, the financial resources of the region are funds accumulated in local budgets, extrabudgetary funds, and other financial resources

(voluntary contributions of citizens, funds of business entities, international organizations, grant programs, projects, etc.).

Financial decentralization makes it possible to ensure the financial independence of local self-government bodies in solving their own self-governing functions and satisfying the interests of the population, stimulating the involvement of all members of the community in ensuring the socio-economic development of the region.

3. It was determined that the processes of financial decentralization in different countries are characterized by significant differences in the formation and use of financial resources of administrative-territorial units at the local and subnational levels. A retrospective analysis of the evolution of decentralization ideas in the world was carried out and the European experience of managing the development of the region was summarized, the adaptation of which is an important factor in ensuring the effectiveness of similar processes of the effective functioning of local self-government bodies and the disposal of appropriate financial resources in Ukraine.

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## 1.4. COMPREHENSIVE EVALUATION AND JUSTIFICATION OF THE PRIORITIES OF THE SOCIAL DEVELOPMENT OF UKRAINE

### Introduction

Taking into account the difficult economic conditions in which our state is currently, there is a need to increase the level of social development, which involves determining the priorities of state and regional policy in the social sphere. First of all, it is necessary to develop approaches to a comprehensive assessment of the level of social development, on the basis of which the necessary information will be obtained for determining the priorities of national policy in this area.

The purpose of the study is to carry out a comprehensive assessment and justification of the priorities of the social development of Ukraine based on a set of criteria and indicators. Research tasks :

- to develop methodical approaches to comprehensive assessment of the level of social development of the country;
- to conduct an analysis and assessment of indicators of social development by main components and a general assessment of the level of social development of the country;
- determine the priorities of the national policy of increasing the level of social development.

The object of the study is the process of increasing the level of social development in Ukraine.

The subject of the study is methodical and applied aspects of comprehensive assessment and substantiation of the country's social development priorities.

The methodical base of this research was the following methods: system analysis; logical generalization, complex economic and statistical assessment, analysis and synthesis; induction, deduction; graphic analysis; conceptual analysis. The information base of the research is the data of the State Statistics Service of Ukraine, scientific periodicals, Internet resources according to the topic of the research.

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### 1.4.1. Methodological aspects of the comprehensive assessment of the level of social development of the country

Traditionally, three important components of territorial development research are distinguished: economic, social and ecological. Each of these components covers a separate field of activity and involves the study of many indicators that will allow studying the specifics of development from different angles. In the context of a more detailed study of the social component of the development of an individual country, it should be understood that the basis of social development should be development from the standpoint of meeting various primary and derivative needs of both the entire population as a whole and its individual social groups.

Results of the conducted theoretical research (Table 1) show that researchers have different understandings of the concept of "social development".

Table 1

#### Scientific approaches to the interpretation of the concept of "social development"

Sources	Approach to interpretation of the concept
Kotukov, Kopylova, 2010	The process of planned social changes is intended to ensure the well-being of the population as a whole in combination with the dynamic process of economic development.
Handy, 2019	The content of the concepts - "social development" and "economic development" can be revealed, on the one hand, by highlighting various aspects of this process itself, on the other - on the basis of its comparison with similar categories, such as: progress, evolution, modernization, growth and by others
Melnyk V., Kantsur, Melnyk M., 2017	Social development means a change in society that leads to the emergence of new social relations, institutions, norms and values .
Hrynyova, Novikova, 2008	Social development is a qualitative improvement of indicators characterizing the social sphere, primarily incomes of the population, including wages; the state of social sectors: education, health care, culture.
Gavrylenko, Melnyk, Nedyukha, 2001	Social development involves the structural restructuring of society, a change in its social type. It involves the transformation of social relations, including property relations, social group structure, the nature and way of functioning of social organizations, and the institutional order of society. Social development is the historical evolution of a social system or a specific society from simpler to more complex forms of its organization.
Meleniuk, 2010	Social development as social relations mediated by the socio-labour and socio-cultural development of the population of the state, increasing the level of its social security and social services with the aim of achieving sustainable development of its territories and improving the quality of life of the entire population.

*Source: based on sources summarized by the author (Kotukov, Kopylova, 2010; Khandiy, 2019; Melnyk V., Kantsur, Melnyk M., 2017; Hrynyova, Novikova, 2008; Gavrylenko, Melnyk, Nedyukha, 2001; Meleniuk, 2010).*

In our opinion, social development is a complex concept that covers various spheres of socio-economic activity of a separate region, related to the solution of social needs of various population groups of the region on the basis of ensuring priority compliance with minimum social standards, which are defined at the national and regional levels. This concept is closely intertwined with such concepts as sustainable development and socio-economic development.

Therefore, for the purposes of comprehensive analysis and assessment of social development of a separate country, it is not possible to focus on only one or several indicators.

We believe that in the process of assessing the level of social development at the national level, it is possible to single out as summarizing indicators - the sum of expenditures of the consolidated budget of Ukraine on social protection and social security of the population in % of total expenditures, as well as the sum of these expenditures on social protection and social security of the population in % to gross domestic product (GDP).

In our opinion, in the future, when forming a system of partial indicators for assessing the level of social development at the national level, it should be taken into account that this is a complex and multifaceted concept that covers not only the quantitative and qualitative characteristics of the employed and unemployed population, but also directly depends on the demographic situation in the region. the state of compliance with the minimum social guarantees for citizens, the level of income and expenses of the population and their structure, and must also take into account the degree of provision of education, health care, culture services to the population, as well as the level of employees, their social protection and state of health, provision of social assistance socially vulnerable sections of the population, etc.

Such a broad understanding of the essence of the country's social development made it possible to identify a number of its main components, which should be taken into account and used for a comprehensive assessment of its effectiveness, which are presented in Figure 1.

Accordingly, each of the defined criteria (components) for assessing the level of social development of the country should be characterized by a system of basic indicators that will reveal its content and determine the level of development of individual social groups or the level of provision of certain types of social services to the population of the country.

Thus, for the purposes of general assessment of the level of social development of the country, it is appropriate to consider the specified components as partial assessment criteria. At the same time, it is proposed to match each criterion with the same number of indicators, which will ensure the proportionality of the next comprehensive assessment of the level of social development for each component.

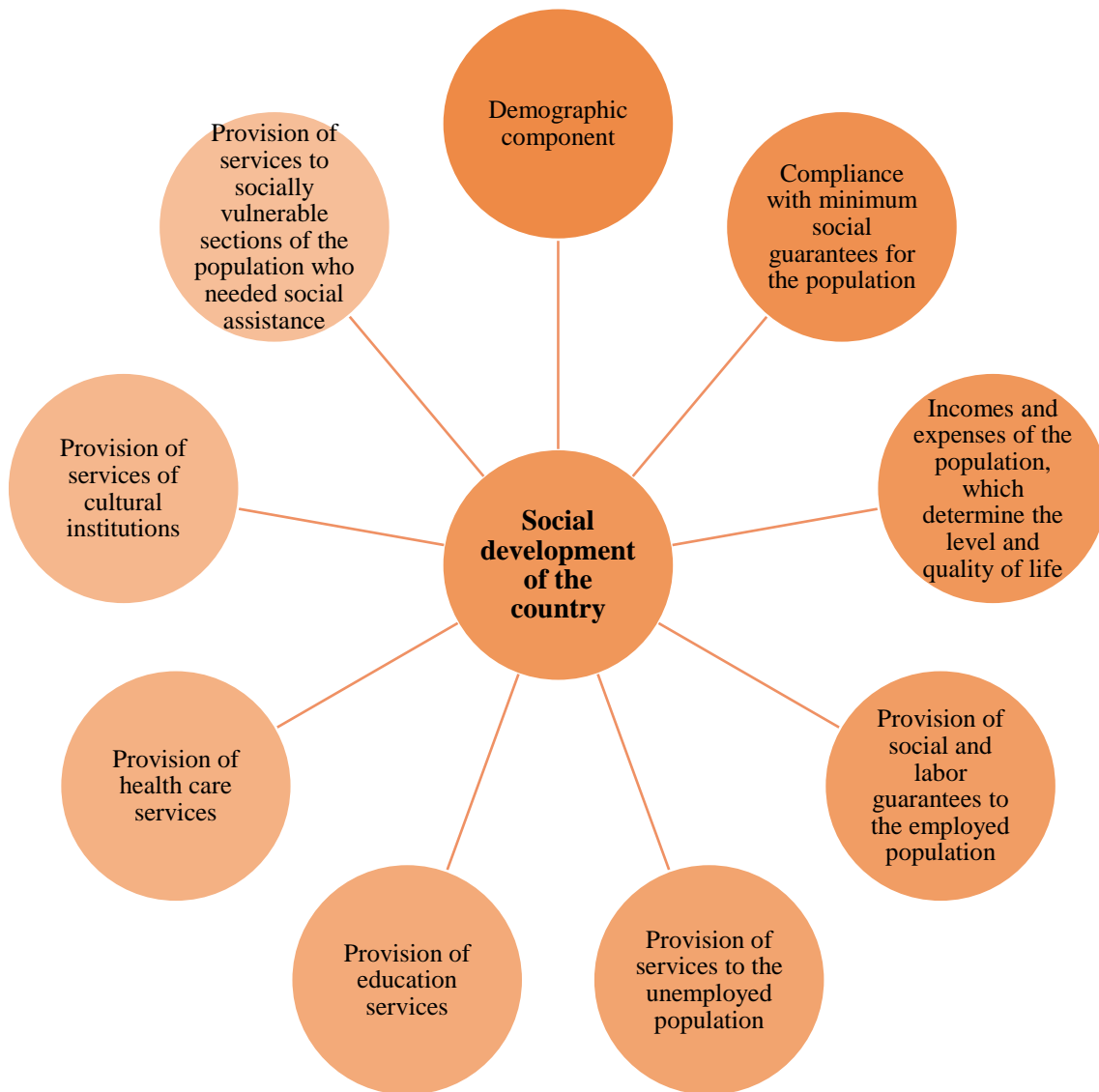


Fig. 1. Criteria (components) of comprehensive assessment of the effectiveness of social development of the country

*Source: author's work.*

With this in mind, a consolidated table of criteria and indicators of a comprehensive comparative assessment of the level of social development of the country has been developed (Table 2).

In the presented table, its orientation is defined for each indicator. That is, whether it is a stimulator (its increase will be considered positive) or a destimulator (its decrease will be considered positive).

Given that the specified indicators have different measurement units and levels of orientation, for the purposes of conducting a comprehensive assessment, it is advisable to transform them into dimensionless values – Indices.

Table 2

Criteria and indicators of a comprehensive comparative assessment of the effectiveness of the social development of the region

Evaluation criteria (components).	The system of evaluation indicators in terms of criteria	Characteristics of the indicator: stimulator (+), destimulator (-)
1	2	3
Demographic component	Number of permanent population at the end of the year, thousands of people	+
	Average life expectancy at birth, years	+
	The number of dead children under the age of 1 per 1,000 live births, persons	-
	Population birth rate	+
	The ratio of the number of marriages to the number of divorces	+
Compliance with minimum social guarantees for the population	The ratio of the average monthly earned salary and the average monthly amount of the legally established living wage per person	+
	Growth rate of real wages, in % compared to the previous year	+
	The amount of the pension in % of the subsistence minimum for one person	+
	The amount of the pension in % of the salary at the end of the year	+
Incomes and expenses of the population, which determine the level and quality of life	The share of cash income in the aggregate resources of households, %	+
	The share of the population with average per capita equivalent total monthly incomes below the subsistence minimum, %	-
	Quintile coefficient of differentiation of total incomes of the population, times	-
	Chart of expenses for housing, water, electricity, gas and other types of fuel in total household expenses, %	-
	The share of non-consumer expenses in total household expenses, %	+
Provision of social and labor guarantees to the employed population	The share of incentive and compensation payments in the wage fund, %	+
	Accrued for unworked time, in % to the wage fund of full-time employees	+
	The specific weight of the number of full-time employees whose wages were calculated within the minimum wage effective in December, %	-
	The share of employees employed at enterprises at the end of the year where the amount of the minimum tariff rate (salary) established by the collective agreement is higher in relation to the legally established minimum wage, %	+
	Expenses of enterprises for maintaining the labor force, which do not belong to the wage fund, in % of the wage fund	+

Continuation of the table. 2

1	2	3
Provision of services to the unemployed population	The share of employed unemployed in the total number, %	+
	The number of unemployed people who underwent professional training during the year, persons	+
	The number of unemployed people who participated in public works during the year, persons	+
	The average amount of unemployment benefits in % of the average monthly salary in December	+
	Load of unemployed persons per vacant workplace, vacancy, persons	–
Provision of education services	Enrollment of children in preschool educational institutions, percent to the number of children of the appropriate age, %	+
	Studied in general educational institutions at the rate of 10,000 people	+
	Studied at vocational and technical educational institutions per 10,000 people	+
	Studied at higher educational institutions per 10,000 people	+
	The number of graduate students at the end of the year	+
Provision of health care services	The number of doctors of all specialties per 10,000 people	+
	Number of secondary medical personnel per 10,000 population, persons	+
	Number of hospital beds per 10,000 population	+
	Planned capacity of outpatient polyclinic facilities per 10,000 population, visits per shift	+
	Number of medical outpatient polyclinic institutions, thousands of units	+
Provision of services of cultural institutions	The number of libraries per 100,000 people	+
	Library fund for 100 people, copies	+
	The number of club establishments per 100,000 people	+
	The number of places in club facilities per 100 people	+
	The number of art schools at the beginning of the academic year per 1,000 people	+
Provision of services to socially vulnerable sections of the population who needed social assistance	The number of orphans adopted during the year, persons	+
	The number of wards in boarding houses for the elderly and disabled, thousand units	+
	The number of families that are assigned assistance to low-income families, thousand	+
	The percentage of citizens who received monetary and in-kind assistance from the number of citizens who are registered due to difficult life circumstances	+
	The number of citizens who were in difficult life circumstances who were given monetary and in-kind assistance	+

Source: author's work.



This will make it possible to generalize the level of social development of the country both by a separate component and in general by all components for individual years of the analyzed period.

There is a need to develop a methodical approach for conducting a comprehensive comparative assessment of the level of social development of the country. Currently, there are widely developed approaches to conducting a comprehensive assessment based on a comparative analysis of regional indicators.

But the specifics of this assessment do not provide for comparisons of indicators by administrative-territorial units of Ukraine. Therefore, among the approaches, it is advisable to choose the one that involves comparing the values of the indicators with their maximum, minimum, or average level, which has developed over the entire analyzed period. Given that the level of social development is a variable value, and the maximum or minimum value of an indicator that characterizes its individual side does not always reflect its real level, it is advisable to take the average level of the corresponding indicator for the entire analyzed period as a basis for comparison.

On the basis of the above, we believe that as a basis for developing a methodical approach for assessing the level of social development of the region, it is advisable to take into account the methodical work of individual researchers: (Lopushnyak, 2011), (Poburko, 2004), (Filstein, Palchevych, 2011), (Shubalyi, 2016).

At the initial stage of assessment, it is advisable to determine partial levels of social development by individual components. To do this, it is necessary to calculate the indexes of each indicator indicator ( $Y_{ijt}$ ), which corresponds to a certain component for a certain year of the analyzed period. For stimulator indicators, this index will be determined by the formula:

$$Y_{ijt} = \frac{X_{ijt}}{\overline{X_{ij}}}, \quad (1)$$

where  $X_{ijt}$  – the value of the  $i$ th indicator corresponding to component  $j$  in period  $t$ ;

$\overline{X_{ij}}$  – the average value of the  $i$ -th indicator corresponding to component  $j$  for the entire analyzed period ( $t$  – years);

$i$  – indicator number within the component ( $i = 1 \dots 5$ );

$j$  – component number ( $j = 1 \dots 9$ );

$t$  – the year number ( $t = 1 \dots 5$ ).

For destimulatory indicators, the index will be determined by a formula that takes into account the fact that destimulators are inverse indicators by content, and therefore, instead of the arithmetic mean, the formula of the average harmonic values of the indicator indicators will be used, which will be placed in the numerator of the

expression and compared with the value of a separate indicator placed in the denominator:

$$Y_{ijt} = \frac{\overline{X^{(\text{harmonic})}_{ijt}}}{X_{ijt}}. \quad (2)$$

where  $\overline{X^{(\text{harmonic})}_{ijt}}$  – the harmonic mean of the values of the  $i$ -th indicator corresponding to component  $j$  for the entire analyzed period ( $t$  – years).

At the same time, the average value of the  $i$ -th indicator corresponding to component  $j$  for the entire analyzed period will be determined by the formula:

$$\overline{X_{ij}} = \frac{\sum_{t=1}^T X_{ijt}}{T}, \quad (3)$$

where  $T$  – the total number of years of the analyzed period ( $T = 5$ ).

At the next stage, the group index of the level of social development of the country will be determined by a separate component ( $Y_{jt}$ ) for each year of the analyzed period separately. Based on the chosen approach, it is advisable to define this indicator as the simple arithmetic mean of the index values of the indicator indicators that correspond to this component, based on the formula:

$$\overline{Y_{jt}} = \frac{\sum_{i=1}^I Y_{ijt}}{I}, \quad (4)$$

where  $I$  – the total number of indicators corresponding to each component, according to which the effectiveness of the social development of the region is assessed ( $I = 5$ ).

In the future, it is necessary to determine the integral index of the level of social development of the region as a whole by all components ( $Y_t$ ) for each year of the analyzed period separately. It is also advisable to define this indicator as the arithmetic mean of the values of the group indices of the level of social development of the region by separate component, based on the formula:

$$Y_t = \frac{\sum_{j=1}^J Y_{jt}}{J}, \quad (5)$$

where  $J$  – the total number of components of social development assessment ( $J = 9$ ).

Thus, the values of the group and integral indices of the level of social development of the country will change within the limits close to one in a greater or lesser direction. Thus, we can conclude:

- if the value of the individual, group or integral index is less than one (which characterizes the average level of efficiency), then the level of social development can be considered below average;

- if the value of the individual, group or integral index is more than one, then the level of social development can be considered above average.

Accordingly, a larger value of the index, which will move away from unity, will characterize a higher level of social development and vice versa. At the same time, the average value of both group and integral indices for the entire analyzed period will be equal to one.

Therefore, the proposed method will allow to carry out a complex comparative assessment of the level of social development of the country both in general and in terms of individual criteria (components) that characterize it for individual years of the analyzed period. In the end, this will make it possible to draw a general conclusion about whether the level of social development of the country can be considered high or low depending on the values of the average levels of the indicators, or their individual or group indices.

#### **1.4.2. Analysis and assessment of social development by main components**

At the initial stage of the analysis, it is necessary to study the dynamics and reasons for changes in general indicators that characterize the level of social development of the country (Fig. 2).

As we can see, during the analyzed period, there was a fluctuation of expenditures on social protection and social security both as a % of the total expenditures of the consolidated budget and as a % of GDP. The decrease occurred mainly in periods of economic instability (2011 – the consequences of the global economic crisis, 2014 – the start of the war in Donbas. The annexation of Crimea). But the trend towards a constant decrease of these indicators during the period after 2016 shows the greatest weight.

After all, we can see that in 2016, state spending on social protection and social security as a percentage of total spending reached the maximum value for the entire analyzed period - 30.9%. Similarly, their specific weight in relation to the total GDP of the country also reached a maximum in 2016 – 10.8%. But by 2020, these indicators gradually decreased, to 21.7% and 8.3%, respectively. That is, the first indicator reached a minimum for the entire analysis period, and the second was slightly higher than the indicator of the crisis year of 2011 (7.8%).

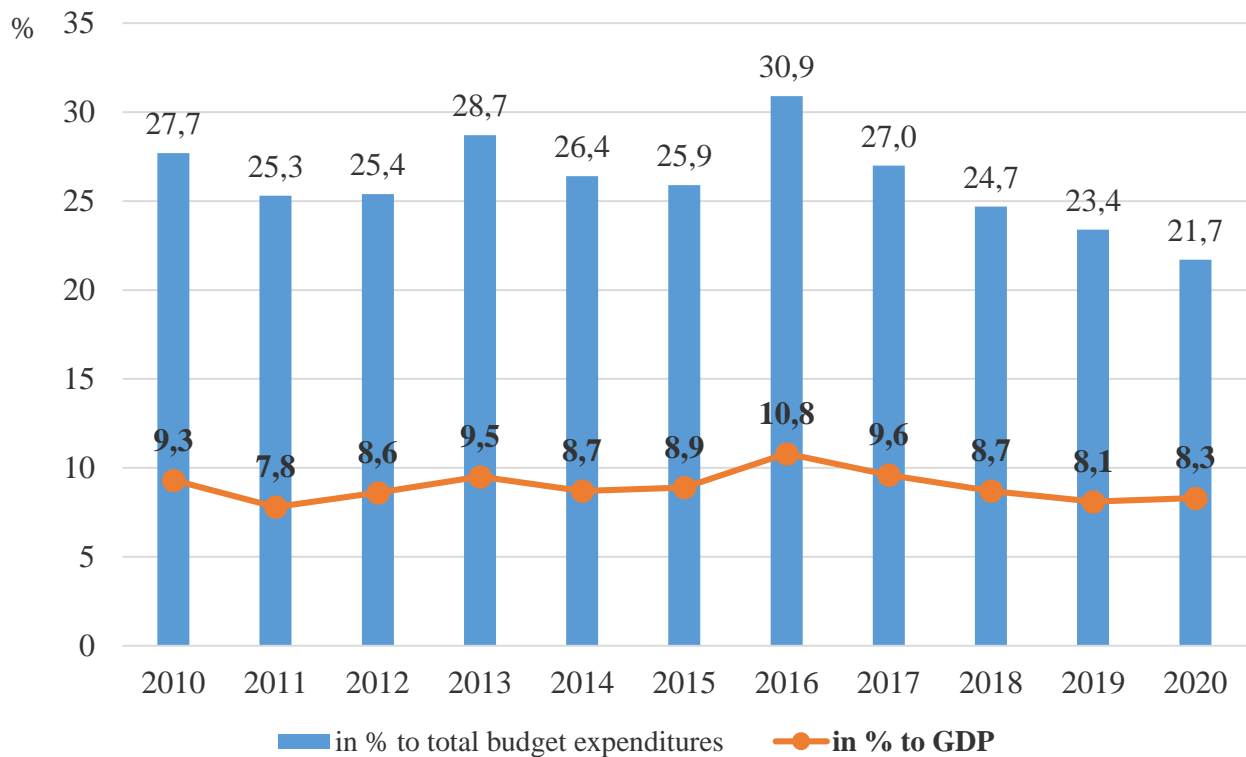


Fig. 2. Analysis of the dynamics of state spending on social protection and social security of the population in Ukraine for 2010-2020.

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

For the developed countries of the world, which ensure a significant increase in the level of GDP and budget revenues, a decrease in these indicators may not necessarily indicate a decrease in the level of social development, because they can redistribute more funds to the goals of economic development, stimulating projects in the production sphere (development of industry and construction, agriculture, transport infrastructure, etc.). Whereas for countries with an unstable economy, in particular Ukraine, such a decrease in the values of these indicators can mainly be considered as a negative trend, which characterizes a decrease in the level of social development.

But this thesis needs further confirmation based on the use of the method of multi-criteria or complex assessment, which will take into account the assessment based on a set of indicators characterizing different aspects of social development. Therefore, at the next stage of the research, on the basis of the methodology developed in chapter 1, an assessment of the level of social development of the region of Ukraine was carried out in terms of all its 9 components.

The results of the assessment of the level of social development by demographic component for 2016-2020 are summarized in Table 3.

Table 3

Assessment of the level of the demographic component of social development in  
Ukraine for 2016-2020

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Number of permanent population at the end of the year, thousands of people	42414.9	42216.8	41983.6	41732.8	41418.7	41953.4	1.011	1.006	1.001	0.995	0.987
Average life expectancy at birth, years	71.7	72.0	71.8	72.0	71.35	71.76	0.999	1.003	1.000	1.004	0.994
The number of dead children under the age of 1 per 1,000 live births, persons	7.4	7.6	7.0	7.0	6.7	7.1	0.963	0.938	1.018	1.018	1.064
Population birth rate	1.466	1.374	1.301	1.228	1.217	1.317	1.113	1.043	0.988	0.932	0.924
The ratio of the number of marriages to the number of divorces	1.7651	1.938	1.484	1.724	1.402	1.662	1.062	1.166	0.892	1.037	0.843
Total by component							1.030	1.031	0.980	0.997	0.962

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

In general, during the analyzed period, there was a tendency for sharp changes in the level of social development - growth in 2017 and 2019 and its sharp decrease in 2018 and 2020, in particular, its minimum value in 2020 – 0.962. The positive impact on the growth of the group index was mainly reduced indicator of the number of dead children under the age of 1 per 1,000 people, as well as a sharp increase in the positive ratio of the number of marriages to the number of divorces in 2018-2020.

A decrease in the population's birth rate and a gradual increase in the number of dead children under the age of 1 per 1,000 live births during the analyzed period had a negative impact on the change in the group index. That is, in general, at the end of the period in 2020, there was a sharp decrease in this index to 0.962, which indicates a relatively low level of social development efficiency in terms of the demographic component.

Below are presented the results of the assessment of the level of social development by the degree of compliance with minimum social guarantees for the population in Ukraine for 2016-2020, which are summarized in Table 4.

Table 4

Assessment of the level of compliance with minimum social guarantees for the population in Ukraine for 2016-2020

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
The ratio of the average monthly earned salary and the average monthly amount of the legally established living wage per person	3.73	4.43	5.08	5.52	5.58	4.87	0.767	0.910	1.044	1.134	1.146
Growth rate of real wages, in % compared to the previous year	109.0	119.1	112.5	109.8	107.4	111.56	0.977	1.068	1.008	0.984	0.963
The amount of the pension in % of the subsistence minimum for one person	115.6	144.6	137.2	146.5	155.3	139.84	0.827	1.034	0.981	1.048	1.111
The amount of the pension in % of the salary at the end of the year	34.4	34.6	28.7	28.3	29.3	31.06	1.108	1.114	0.924	0.911	0.943
State expenditures on social protection and social security of the population in % of GDP	10.8	9.6	8.7	8.1	8.3	9.1	1.187	1.055	0.956	0.890	0.912
Total by component							0.973	1.036	0.983	0.993	1.015

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

As we can see, after achieving a high level of efficiency in 2017 (1.036), the next year there was a sharp decrease in the level of social development for this component to 0.983. This happened due to the negative impact of a sharp decrease in the percentage of the pension amount to the amount of wages at the end of the year. On the other hand, an increase in the growth rate of real wages had a certain positive effect. But in the future, mostly all indicators had a positive impact, which made it possible to ensure the growth of this index from a relatively low level (0.983 – 0.993 in 2018-2019) to a relatively high level of social development by this component in 2020 (1.015).

The results of the assessment of the level of social development based on changes in the level of income and expenditure of the population, which determine the level and quality of life in Ukraine for 2016-2020 yr. is summarized in table 5.

Table 5

Assessment of the level of income and expenditure of the population, which determine the level and quality of life in Ukraine for 2016-2020

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
The share of cash income in the aggregate resources of households, %	86.0	87.5	89.9	92.0	93.9	89.86	0.957	0.974	1.000	1.024	1.045
The share of the population with average per capita equivalent total monthly incomes below the subsistence minimum, %	19.8	13.5	10.6	8.9	8.8	11.2	0.568	0.833	1.057	1.264	1.278
Quintile coefficient of differentiation of total incomes of the population, times	1.9	1.9	2.0	2.1	2.0	2.0	1.041	1.041	0.989	0.942	0.989
Chart of expenses for housing, water, electricity, gas and other types of fuel in total household expenses, %	16.0	17.0	15.2	14.6	14.4	15.4	0.961	0.905	1.012	1.054	1.068
The share of non-consumer expenses in total household expenses, %	6.8	7.1	8.0	8.7	8.6	7.84	0.867	0.906	1.020	1.110	1.097
Total by component							0.879	0.932	1.016	1.078	1.095

Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).

On the basis of the obtained results, it can be concluded that after the low level of social development in this component in 2016-2017, in the following 2018-2020, it increased to a value greater than 1, i.e. a higher average level of development.

This happened due to the reduction of the negative consequences of the economic crisis, stabilization of defense expenditures, stabilization of the national currency exchange rate, restoration of GDP growth and other factors.

As a result, a mostly positive impact on the social and development of such indicators as: The share of monetary income in the aggregate resources of households was observed; The share of the population with average per capita equivalent monthly incomes below the subsistence minimum; breakdown of expenses for housing, water, electricity, gas and other types of fuel in total household expenses; the share of non-consumer expenses in total household expenses. This made it possible to gradually reach the maximum level of social development for this component in 2020 (1.095) , which occurred due to the improvement of all indicators, except for the quintile coefficient of differentiation of the total income of the population. This became possible due to the government's implementation of the policy of increasing the level of real incomes of the population by reducing the level of the "shadow" economy and reducing the corruption schemes of full or partial tax evasion, which allowed to accumulate funds to improve the social standards of life of the population.

In the future, an assessment of the level of social development was carried out by the component characterizing the change in the level of provision of social and labor guarantees to the employed population in Ukraine for 2016-2020, the results of which are summarized in Table 6.

During the analyzed period, after the higher-than-average level of social development for this component, achieved in 2016 (1.393), it further decreased sharply in the following years, in particular to the minimum value in 2017 (0.847). In the following years, this index increased somewhat, but remained less than 1. Such sharp fluctuations occurred due to the fact that the labor market is quite sensitive to changes in the economic situation in the country and regions. The policy of constantly raising the minimum wage played a negative role in these processes. After all, this largely led to the fact that the business was not able to adequately increase payments on the entire scale, so the ratio of the specific weight of the number of full-time employees, whose wages were calculated within the minimum wage effective in December, had a tendency to grow, that is, it had a negative impact on the level of social development according to this component. Also, a decrease in the expenses of enterprises for the maintenance of the workforce, which do not belong to the wage fund, as well as a decrease in the share of employees employed at the end of the year, where the amount of the minimum tariff rate (salary) established by the collective agreement is higher in relation to the legislative the established minimum wage.

But in general, it can be concluded that a more significant increase in the level of social development under this component will be possible due to the activation of economic activity and growth in the volume of production and services, which will become catalysts for increasing the level of employment of employees, increasing the amount of material incentives and expanding the package of providing social services to employees with on the part of employers.



Table 6

Assessment of the level of provision of social and labor guarantees to the employed population in Ukraine for 2016-2020.

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
The share of incentive and compensation payments in the wage fund, %	5.5	5.5	5.7	5.6	5.7	5.6	0.982	0.982	1.018	1.000	1.018
Accrued for unworked time, in % to the wage fund of full-time employees	8.5	7.9	8.3	8.5	8.9	8.42	1.010	0.938	0.986	1.010	1.057
The specific weight of the number of full-time employees whose wages were charged within the minimum that was in effect in December, %	2.8	6.6	5.7	5.4	7.0	4.9	1.764	0.748	0.867	0.915	0.706
The share of employees employed at enterprises at the end of the year where the amount of the minimum tariff rate (salary) established by the collective agreement is higher in relation to the legally established minimum wage, %	22.4	5.7	9.3	10.5	7.5	11.08	2.022	0.514	0.839	0.948	0.677
Expenses of enterprises for maintaining the labor force, which do not belong to the wage fund, in % of the wage fund	4.4	3.9	3.7	3.5	3.0	3.7	1.189	1.054	1.000	0.946	0.811
Total by component							1.393	0.847	0.942	0.964	0.854

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

The results of the assessment of the level of social development by the component characterizing the change in the level of provision of services to the unemployed population in Ukraine for 2016-2020 are summarized in Table 7.

Table 7

Assessment of the level of provision of services to the unemployed population in  
Ukraine for 2016-2020 .

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
The share of employed unemployed in the total number, %	32.2	35.0	36.1	37.9	30.8	34.4	0.936	1.017	1.049	1.101	0.896
The number of unemployed people who underwent professional training during the year, persons	166.6	158	147	138.6	93.4	140.7	1.184	1.123	1.045	0.985	0.664
The number of unemployed people who participated in public works during the year, persons	233.7	212	212	199.9	99.7	191.46	1.221	1.107	1.107	1.044	0.521
The average amount of unemployment benefits in % of the average monthly salary in December	30.8	26.6	27.2	30.0	26.8	28.3	1.091	0.940	0.962	1.060	0.947
Load of unemployed persons per vacant workplace, vacancy, persons	11	7	6	6	11	7.6	0.691	1.086	1.266	1.266	0.691
Total by component							1.024	1.054	1.086	1.091	0.744

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

Based on the calculations, it is possible to state a sharp negative decrease in the level of social development in this component from a high level in 2016-2019 to a low level in 2020 (0.744), which occurred due to a sharp decrease in the level of employment of the unemployed, a decrease in the number of people involved in active activities promotion of employment (vocational training and public works), as well as an increase in the workload of the unemployed per one vacant workplace. Although in 2016-2019 there was a slight, but stable increase in the level of social development in this component, which reached its highest value in 2019 (1.091), which indicates that quite high achievements have been made in this area. But this happened mainly only due to a significant increase in the number of the unemployed population, which participated in public works and a decrease in the rate of unemployment per job vacancy. Therefore, in the following periods, it is necessary to pay attention to

intensifying the work of the State Employment Service to increase the level of employment of the unemployed and increase the level of their coverage by active employment promotion measures. The results of the assessment of the level of social development based on the change in the level of provision of education services in Ukraine for 2016-2020 are summarized in Table 8.

Table 8

Assessment of the level of provision of education services in Ukraine for 2016-2020

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Enrollment of children in preschool educational institutions, percent to the number of children of the appropriate age, %	57	59	61	63	58	59.6	0.956	0.990	1.023	1.057	0.973
Studied in general educational institutions at the rate of 10,000 people	885	925	959	988	1013	954	0.928	0.970	1.005	1.036	1.062
Studied at vocational and technical educational institutions per 10,000 people	71	64	60	59	59	62.6	1.134	1.022	0.958	0.942	0.942
Studied at higher educational institutions per 10,000 people	375	363	361	343	275	343.4	1.092	1.057	1.051	0.999	0.801
The number of graduate students at the end of the year	25963	24786	22829	25245	25668	24898.2	1.043	0.995	0.917	1.014	1.031
Total by component							1.031	1.007	0.991	1.010	0.962

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

These tables indicate a mostly negative trend towards a decrease in the level of social development in this component from relatively high in 2016 (1.031) to minimal and relatively low in 2020 (0.962). This happened due to the fact that during the analyzed period there was a mainly negative trend towards a decrease in the number of persons studying in vocational and technical and higher educational institutions. While a certain positive moment was only an increase during the analyzed period in the level of children's enrollment in preschool educational institutions, percentages to the

number of children of the appropriate age, as well as the number of people who studied in general educational institutions per 10,000 of the population. This gives reasons that in the future the scope of providing education services in Ukraine will increase, so it is necessary to preserve the existing material and technical base and the network of vocational and technical and higher education institutions.

The results of the assessment of the level of social development by the component characterizing the change in the level of provision of health care services in Ukraine for 2016-2020 are summarized in Table 9.

Table 9

Assessment of the level of provision of health care services in Ukraine  
for 2016-2020.

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
The number of doctors of all specialties per 10,000 people	44.0	44.1	44.2	44.3	43.4	43.99	1.000	1.002	1.005	1.006	0.986
Number of secondary medical personnel per 10,000 population, persons	86.5	85.4	82.3	79.1	74.6	81.57	1.060	1.047	1.009	0.970	0.914
Number of hospital beds per 10,000 population	74.3	73.1	71.9	70.7	66.4	71.28	1.042	1.025	1.009	0.992	0.931
Planned capacity of outpatient polyclinic facilities per 10,000 population, visits per shift	215.6	218.6	220.7	220.5	224.3	219.94	0.980	0.994	1.003	1.003	1.020
Number of medical outpatient polyclinic institutions, thousands of units	10.2	10.4	10.5	10.6	10.6	10.46	0.975	0.994	1.004	1.013	1.013
Total by component							1.012	1.013	1.006	0.997	0.973

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

As we can see, after reaching them higher than average levels of efficiency in 2016-2018 (1.006 – 1.013), then in 2019-2020 it gradually decreased to a lower than average level (0.997 – 0.973). The catalyst for such negative changes was mainly the decrease of the following indicators: the number of secondary medical personnel per 10,000 population, the number of hospital beds per 10,000 population, the number of

doctors of all specialties per 10,000 population. On the other hand, a certain increase in the level of development of this component in 2017 (up to the maximum level of 1.013) occurred due to the stabilization of all the above indicators, but mainly the indicator of the number of average medical personnel per 10,000 population. Therefore, this area will require increased attention in the following periods, as a sharp decrease in the level of social development is observed.

At the next stage, an assessment of the level of social development was carried out according to the component that characterizes the change in the level of provision of services of cultural institutions in Ukraine for 2016-2020, the results of which are summarized in Table 10.

Table 10

Assessment of the level of provision of services of cultural institutions in Ukraine for 2016-2020.

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
The number of libraries per 100,000 people	39.9	39.7	39.5	38.8	38.8	39.3	1.014	1.009	1.005	0.985	0.986
Library fund for 100 people, copies	600.0	588.0	569.3	551.1	461.1	553.9	1.083	1.062	1.028	0.995	0.833
The number of club establishments per 100,000 people	40.4	40.5	40.5	39.2	39.6	40.0	1.009	1.011	1.012	0.978	0.990
The number of places in club facilities per 100 people	9.9	9.9	10.0	8.9	8.9	9.5	1.039	1.044	1.050	0.930	0.937
The number of art schools at the beginning of the academic year per 1,000 people	30.5	30.8	31.2	31.7	32.0	31.3	0.977	0.987	0.997	1.014	1.025
Total by component							1.024	1.022	1.018	0.981	0.954

*Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).*

As we can see, after the higher average levels of social development for this component in 2016-2018 (1.024 – 1.018), a gradual decline was observed in the future its level in 2019-2020 to a lower than average level (0.981 – 0.954). The positive impact here was ensured mainly due to the increase in the number of art schools at the beginning of the academic year per 1,000 people. At the same time, work on increasing the number of libraries and updating and growing the library fund, increasing the

number and expanding the capacity of club institutions should be intensified in the coming years. This will allow in the following periods to expand the range of providing cultural services to the population of the country , increasing the level of social development in this component.

The results of the assessment of the level of social development by the component characterizing the change in the level of provision of services to socially vulnerable segments of the population that needed social assistance in Ukraine for 2016-2020 are summarized in Table 11.

Table 11

Assessment of the level of provision of services to socially vulnerable sections of the population that needed social assistance in Ukraine for 2016-2020.

Indicators	Year					Average value for the period	The level of development for the year (up to the average value for the period)				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
The number of orphans adopted during the year, persons	2963	2925	2757	2878	1964	2697.4	1.098	1.084	1.022	1.067	0.728
The number of wards in boarding houses for the elderly and disabled, thousand units	40.5	40.6	40.8	40.8	43.3	41.2	0.983	0.985	0.990	0.990	1.051
The number of families that are assigned assistance to low-income families, thousand	993974	898295	796361	663456	636766	797770.4	1.246	1.126	0.998	0.832	0.798
The percentage of citizens who received monetary and in-kind assistance from the number of citizens who are registered due to difficult life circumstances	86.9	83.2	94.0	94.8	98.5	91.46	0.951	0.909	1.027	1.036	1.076
The number of citizens who were in difficult life circumstances who were given monetary and in-kind assistance	42564	33351	31151	32750	47499	37463	1.136	0.890	0.832	0.874	1.268
Total by component							1.083	0.999	0.974	0.960	0.984

Source: author's work based on data from (State Statistics Service of Ukraine, 2021; Labor of Ukraine, 2016; Labor of Ukraine, 2018; Labor of Ukraine, 2020; Social protection of the population of Ukraine, 2017-2020).

As we can see, after achieving a higher than average level of social development in this component in 2016 (1.083), in 2017-2020, a negative trend towards its decrease and staying at a lower than average level (0.999 – 0.960) was observed. The decrease in the level of this component in recent years was mainly due to negative changes in the following indicators: the number of families that were assigned assistance to low-income families; the number of orphans adopted during the year. But it should be noted that the deterioration of these indicators was a consequence of the state's ill-conceived policy of providing assistance to low-income families and orphans.

Therefore, at the national and regional levels, it is expedient to intensify measures to increase the size and ensure the targeting of subsidies and assistance to low-income segments of the population. At the same time, the rest of the indicators were characterized by a mostly positive change in 2020. This shows that in the conditions of economic instability and the pandemic, executive authorities at the national and regional levels are trying to provide adequate social protection to vulnerable sections of the population.

Therefore, based on the results of the assessment of the level of social development by individual components, it can be concluded that in each sphere these indicators are formed under the influence of both positive and negative factors. And which of these influences prevails depends on the direction of the trend of changes in the corresponding group indices of the level of social development of the country.

### **1.4.3. General assessment of the level of social development of Ukraine**

In the process of carrying out a general assessment of the effectiveness of the social development of the region, there is a need to assess the contribution of individual components to the overall level of the effectiveness of social development during all years of the analyzed period.

Figure 3 presents the results of assessing the contribution of individual components to the overall level of social development in Ukraine in 2016 in the form of a radial diagram.

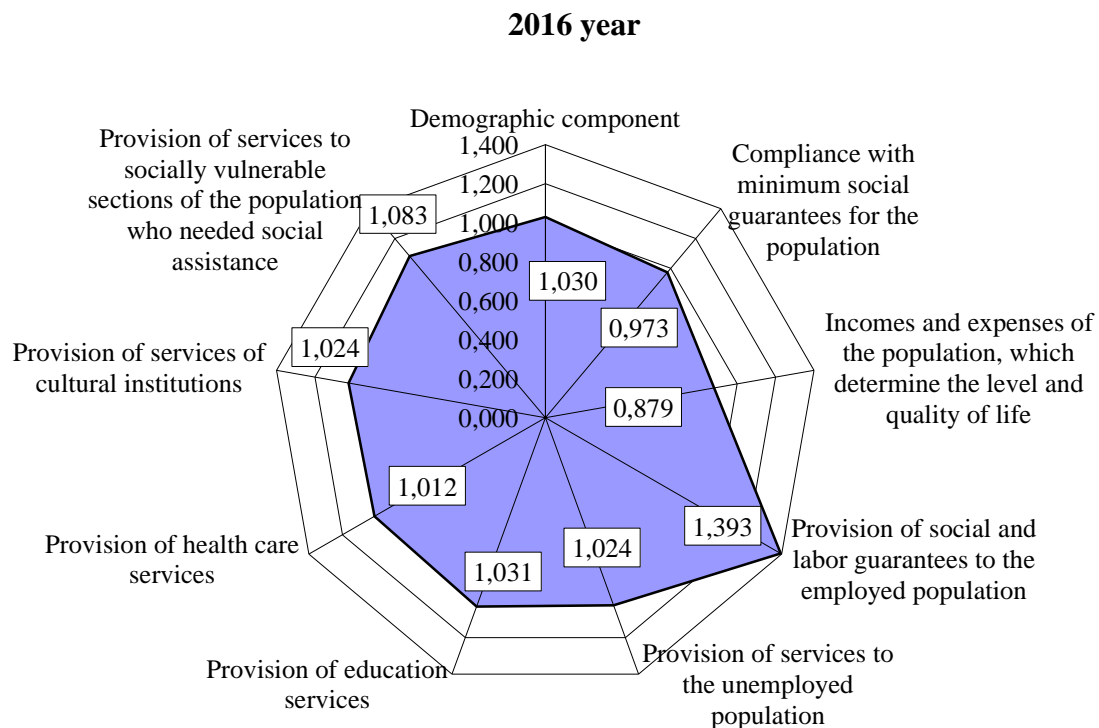


Fig. 3. Assessment of the contribution of individual components to the overall level of social development in Ukraine in 2016

*Source: author's work.*

As we can see, in 2016 the demographic component made a positive contribution to the achieved higher than average level of social development, as well as components that characterize the provision of social and labor guarantees to the employed population, the provision of services to the unemployed population, the provision of education, health care, cultural institutions, and as well as the provision of services to socially vulnerable sections of the population who needed social assistance. While the contribution of components that reflect the level of compliance with minimum social guarantees for the population, as well as incomes and expenses of the population, which determine the level and quality of life, was negative. But in general, it made it possible to obtain a positive value of the level of social development this year, because the value of the group index was greater than one (1.050).

Figure 4 presents the results of assessing the contribution of individual components to the overall level of social development in Ukraine in 2017 in the form of a radial diagram.



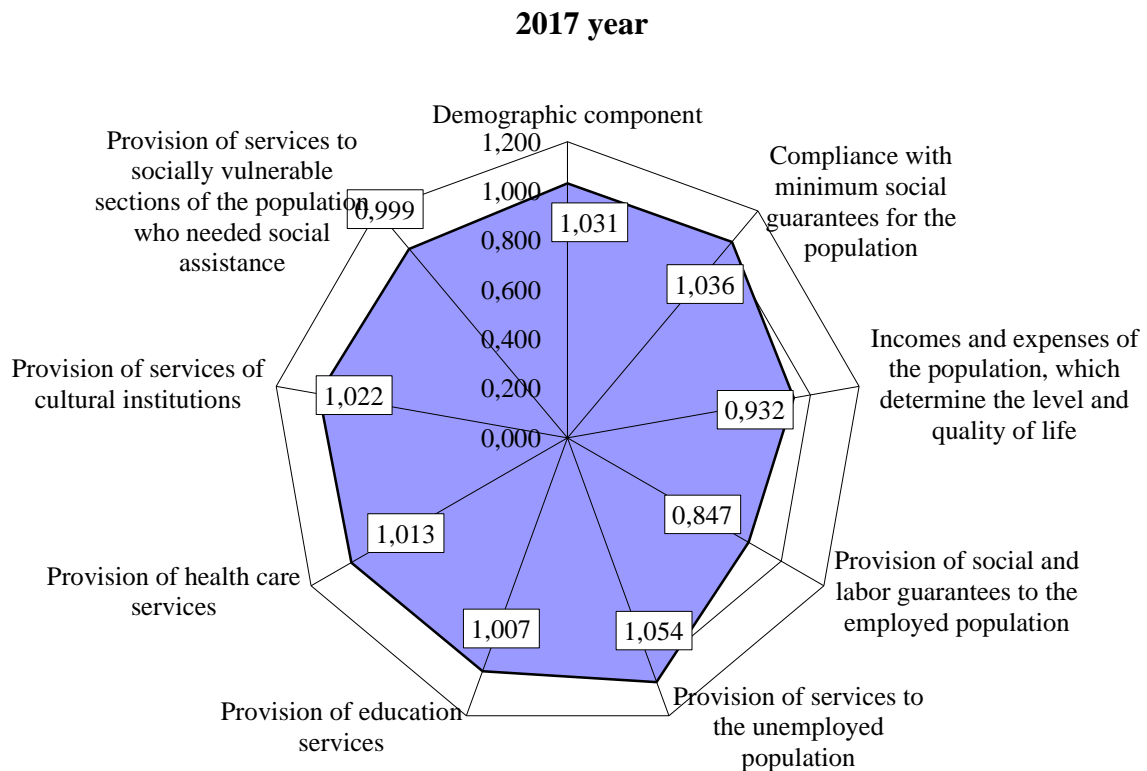


Fig. 4. Assessment of the contribution of individual components to the overall level of social development in Ukraine in 2017

*Source: author's work.*

Only a third of the components – the income and expenses of the population, which determine the level and quality of life, the provision of social and labor guarantees to the employed population, and the provision of services to socially vulnerable sections of the population that needed social assistance – made a slight negative positive contribution to the achieved level of social development efficiency. On the other hand, the contribution of the demographic component, the levels of compliance with minimum social standards, the provision of services to the unemployed population, the services of educational institutions and the provision of services of educational, cultural, health care institutions was positive. But due to the fact that the negative impact of these components exceeded the overall insignificant positive contribution of the four first components under consideration, in general, in 2017, a negative or below average value of the level of social development was obtained – 0.994. This happened mainly due to a sharp decrease in the level of social development in terms of the provision of social and labor guarantees to the employed population this year.

Figure 5 presents the results of assessing the contribution of individual components to the overall level of social development in Ukraine in 2018 in the form of a radial diagram.

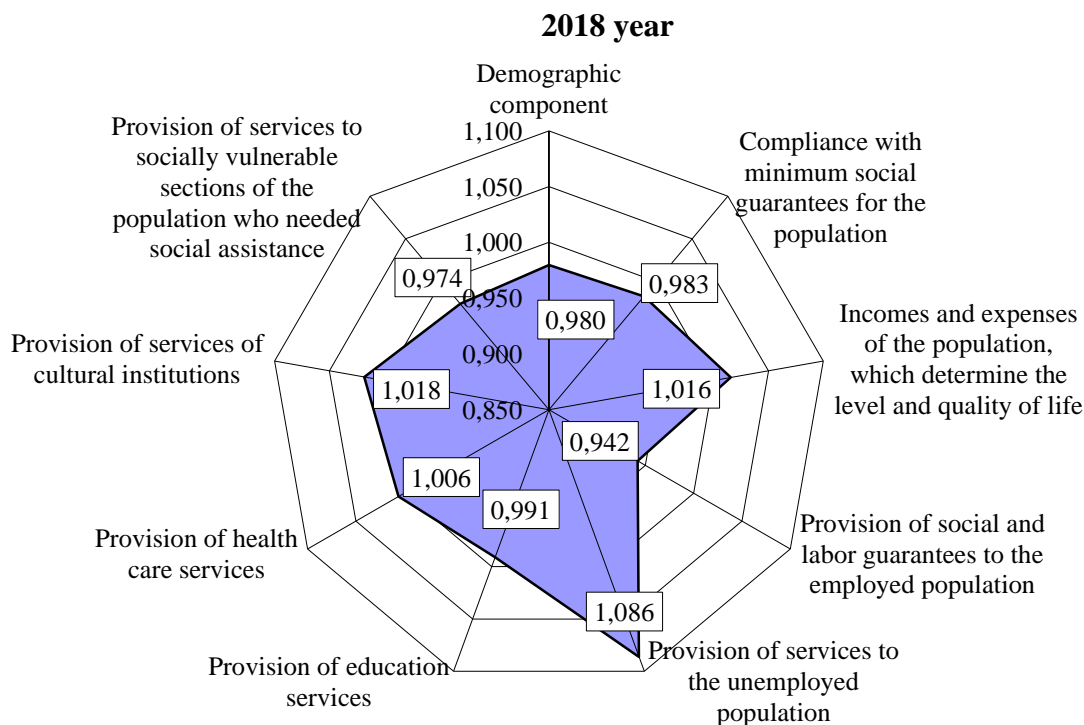


Fig. 5. Assessment of the contribution of individual components to the overall level of social development in Ukraine in 2018

*Source: author's work.*

In general, in 2018, only four components and assessments of the level of social development made an insignificant positive contribution to the achieved level of social development – income and expenses of the population, which determine the level and quality of life; provision of services to the unemployed population; provision of health care services; providing services of cultural institutions. While the remaining five components were characterized by a negative contribution – the demographic component, the level of compliance with minimum social guarantees, the provision of social and labor guarantees to the employed population, the provision of education services, as well as the provision of services to socially vulnerable sections of the population who needed social assistance. that the negative impact of these four components minimally exceeded the total insignificant positive contribution of the considered five components, in general, for 2018, a negative value of the level of social development was also obtained – 0.999, i.e. slightly more than the level of 2017. This happened mainly due to a sharp decrease in the level of social development in terms of

the provision of education services, as well as compliance with minimum social guarantees for the population this year.

Figure 6 presents the results of assessing the contribution of individual components to the overall level of social development in Ukraine in 2019 in the form of a radial diagram.

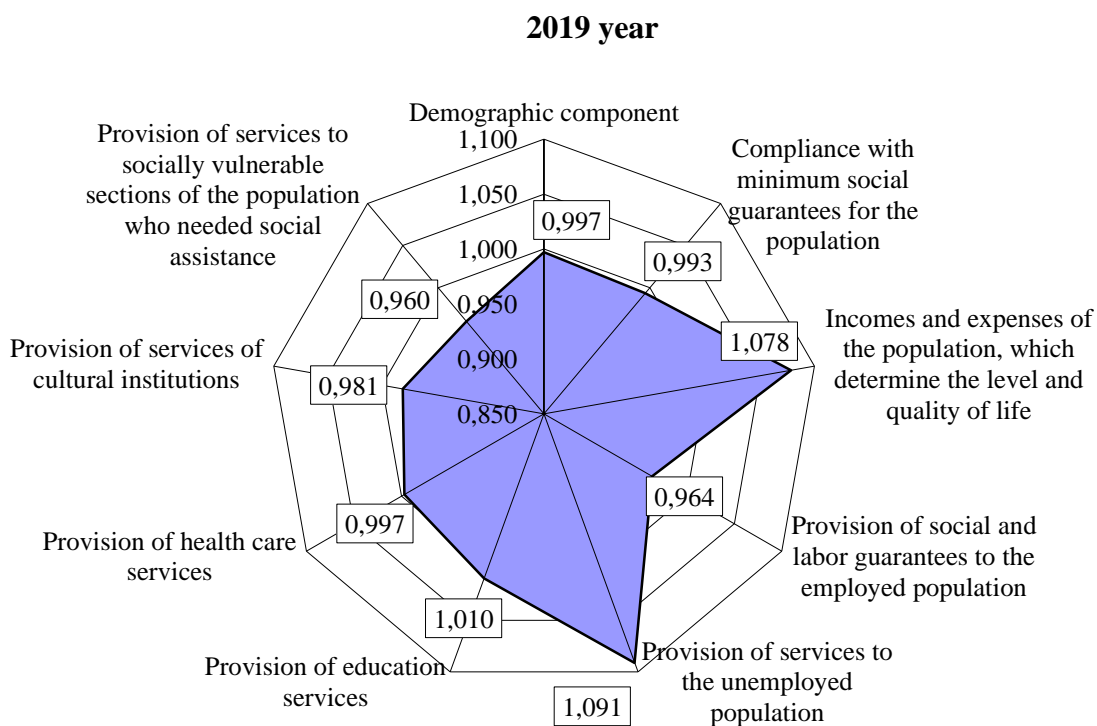


Fig. 6. Assessment of the contribution of individual components to the overall level of social development in Ukraine in 2019

*Source: author's work.*

In general, in 2019, only three components of the assessment of the level of social development made a slight positive contribution to the achieved integral level of development. These include income and expenses of the population, which determine the level and quality of life; provision of services to the unemployed population; provision of education services. Accordingly, the remaining six components were characterized by a negative contribution: the demographic component; compliance with minimum social guarantees for the population; provision of social and labor guarantees to the employed population; provision of health care services, cultural institutions, provision of services to socially vulnerable sections of the population who needed social assistance. But in general, for 2019, due to the fact that the positive impact of the three components in question exceeded the total negative contribution of the remaining six components, a slight positive value of the level of social development

was obtained – 1.008, which indicates a higher average level of social development this year.

Further, Figure 7 presents the results of assessing the contribution of all components to the overall level of social development in Ukraine in 2020 in the form of a radial diagram.

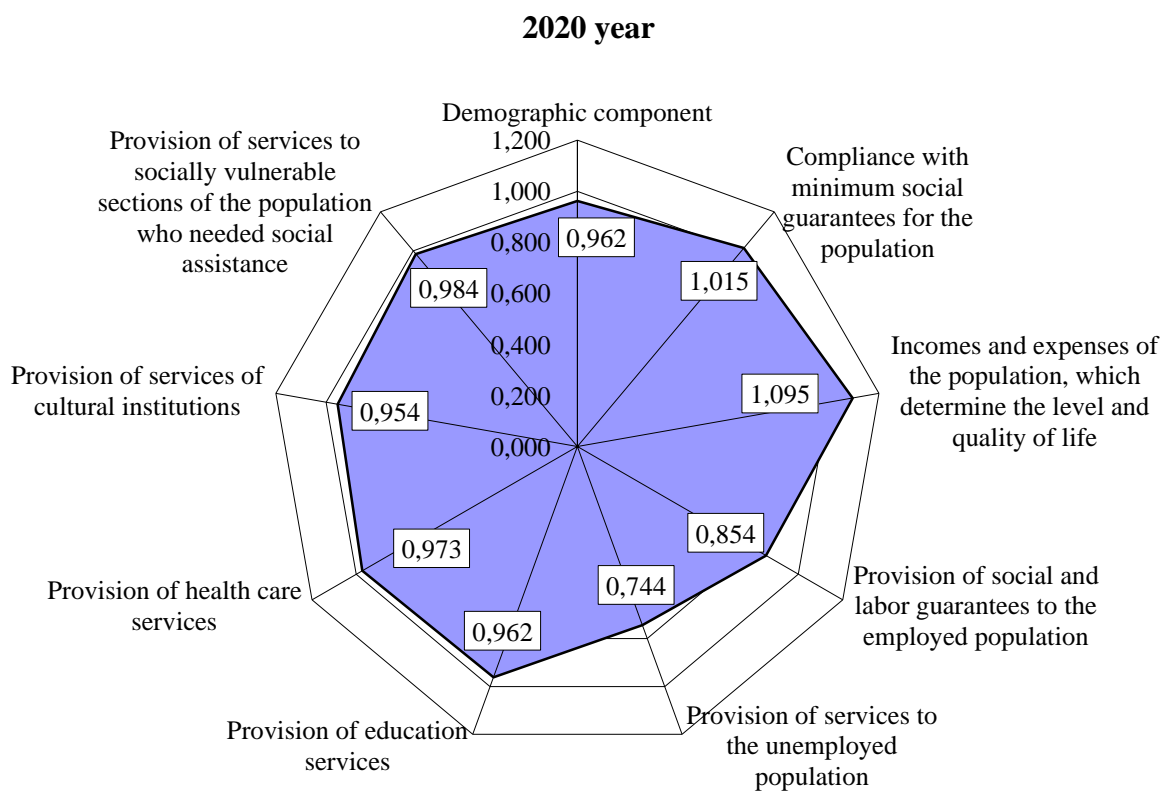


Fig. 7. Assessment of the contribution of individual components to the overall level of social development in Ukraine in 2020

*Source: author's work.*

As you can see, in 2020, the number of components that provided a higher average level of social development decreased to two compared to the previous year. The correspondingly higher average level of social development was characterized only by the component of obtaining minimum social guarantees for the population and the income and expenses of the population, which determine the level and quality of life. In general, for 2020, due to the fact that the negative impact of most components exceeded the total positive contribution of these two considered components, a negative or below average value of the level of social development was obtained – 0.949, which was the lowest for the entire analyzed period.

At the next stage of the analysis, a comparison of the dynamics of the level of social development in terms of its components for the period 2016-2020 was made, which is presented in Figure 8.

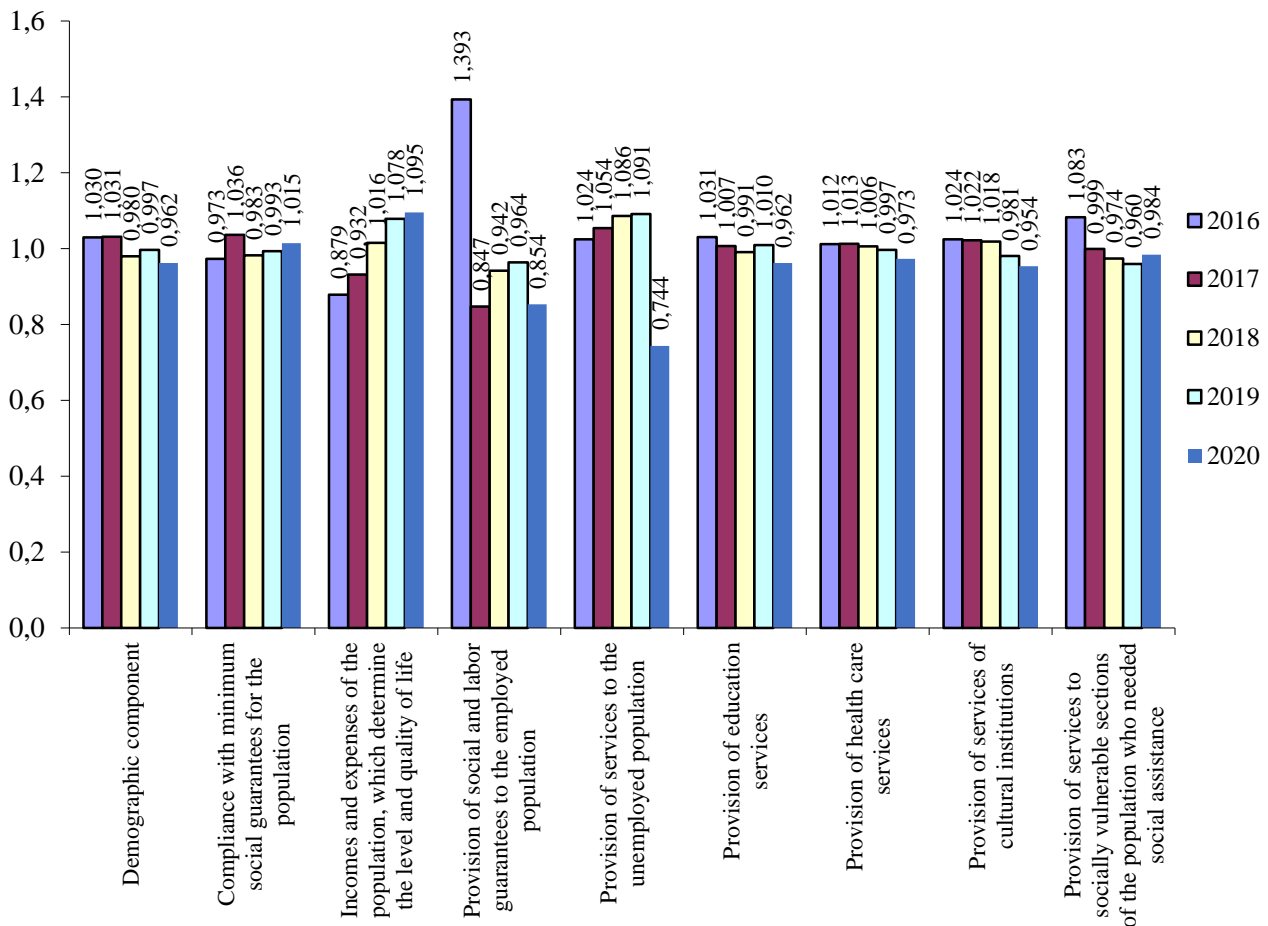


Fig. 8. Comparison of the dynamics of the level of effectiveness of social development of the region in terms of its components for the period 2016-2020.

Source: author's work.

As we can see, the largest fluctuations in the level of social development during the analyzed period among all considered components occurred in the component of the level of compliance with minimum social guarantees for the population. Indeed, after a significant decrease in the corresponding group index in 2018, in the following year it sharply increased to a higher level of 0.997, but then again decreased to 0.962. Similar trends were observed with regard to changes in the demographic component, where the lowest level (0.980) was also observed in 2018, and in 2018 there was an increase to 0.997, but later in 2020, the level of social development according to this component decreased again to 0.962.

The most stable and even growing during the analyzed period were indicators of social development by the level of income and expenses of the population, which determine the level and quality of life, as well as indicators of the level of providing services to the unemployed population.

Among all components and years of the analyzed period, the sphere of providing services to the unemployed population was characterized by the smallest value of the

group index, respectively, in 2020 (0.744), and the sphere of providing social security guarantees to the employed population was characterized by the highest level in 2016 (1.393). In general, it can be stated that most of the lowest values of the group indices occurred in 2018 and 2020, and the highest – in 2016 and 2017, although this does not apply to the components of income and expenditure of the population, which determine the level and quality of life.

According to the results of the conducted research, the results of the integrated assessment of the level of social development in Ukraine for 2016-2020, in terms of all its selected components, are presented in the table 12.

Table 12

Integrated assessment of the effectiveness of social development in Ukraine for 2016-2020.

Criteria (components)	Year				
	2016	2017	2018	2019	2020
Demographic component	1.030	1.031	0.980	0.997	0.962
Compliance with minimum social guarantees for the population	0.973	1.036	0.983	0.993	1.015
Incomes and expenses of the population, which determine the level and quality of life	0.879	0.932	1.016	1.078	1.095
Provision of social and labor guarantees to the employed population	1.393	0.847	0.942	0.964	0.854
Provision of services to the unemployed population	1.024	1.054	1.086	1.091	0.744
Provision of education services	1.031	1.007	0.991	1.010	0.962
Provision of health care services	1.012	1.013	1.006	0.997	0.973
Provision of services of cultural institutions	1.024	1.022	1.018	0.981	0.954
Provision of services to socially vulnerable sections of the population who needed social assistance	1.083	0.999	0.974	0.960	0.984
Total by components	1.050	0.994	0.999	1.008	0.949

Source: author's work.

The data in this table once again confirm the scale of the study of the level of social development in Ukraine and the assessment of the contribution of individual components to its overall change during all five years of the analyzed period. The results of the analysis of changes in the integral level of the effectiveness of social development in the Volyn region for 2016-2020 are presented in fig. 9.

As we can see, after 2016, there is a mostly negative trend towards a constant decrease in the level of social development in Ukraine, and the minimum fell in 2020 (0.949), which is a significant negative in the conditions of the instability of the external and internal situation, as well as the negative consequences of the pandemic.

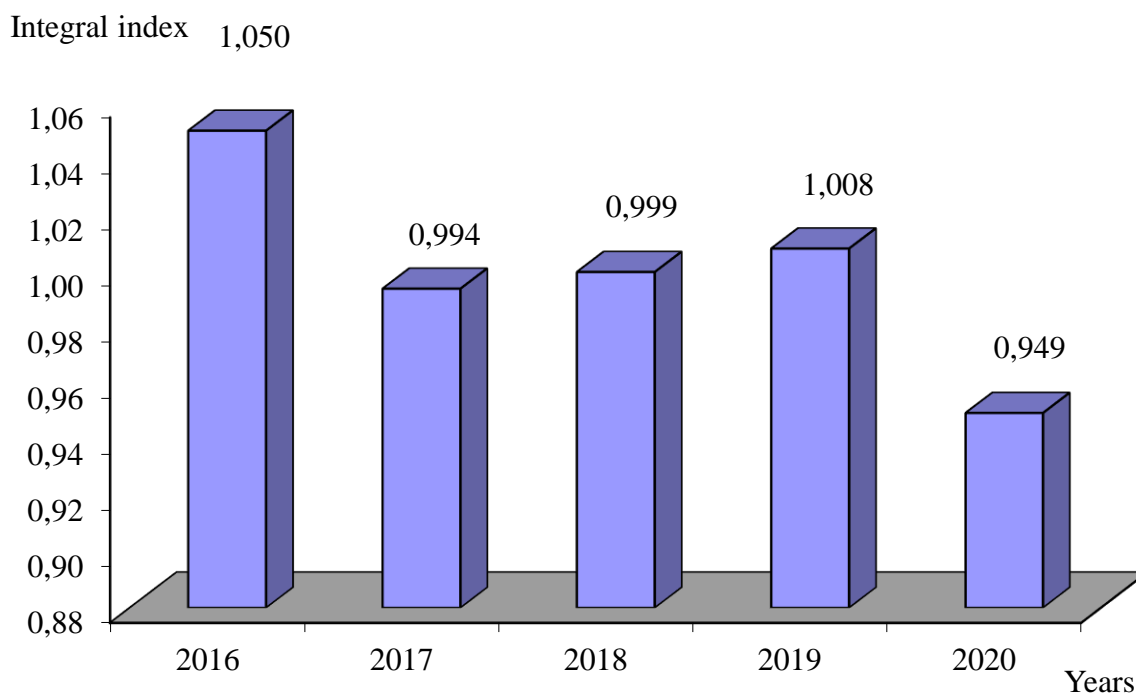


Fig. 9. Change in the integral level of social development in Ukraine for 2016-2020 (to the average value for the period)

*Source: author's work.*

But, on the other hand, the economic crisis acts as a certain catalyst for the processes of optimization, cleaning of unnecessary elements of the system, an incentive to increase the efficiency of management, which was also reflected in a positive change in a number of indicators that reflect the level of social development of the country by major components.

Therefore, in the coming years, national and regional bodies of state power and local self-government face the task of developing a set of measures to ensure maintenance, and if possible, improvement of the achieved indicators in all components that characterize the level of social development.

#### **1.4.4. Priority directions of the national policy of increasing the level of social development**

The national policy of social development is a set of purposeful measures, programs and actions aimed at improving or maintaining the situation depending on the state of the social and labor sphere, the existing problems of the life of different strata of the population.

Currently, in the region, as part of the implementation of the "Activity Program of the Cabinet of Ministers of Ukraine" dated June 12, 2020, a number of priority areas of activity of the Ministry of Social Policy of Ukraine have been approved and are

being implemented, which are presented in Figure 10 and directly relate to the sphere of social development and are posted on the official website of the Cabinet of Ministers of Ukraine (Cabinet of Ministers of Ukraine, 2020).

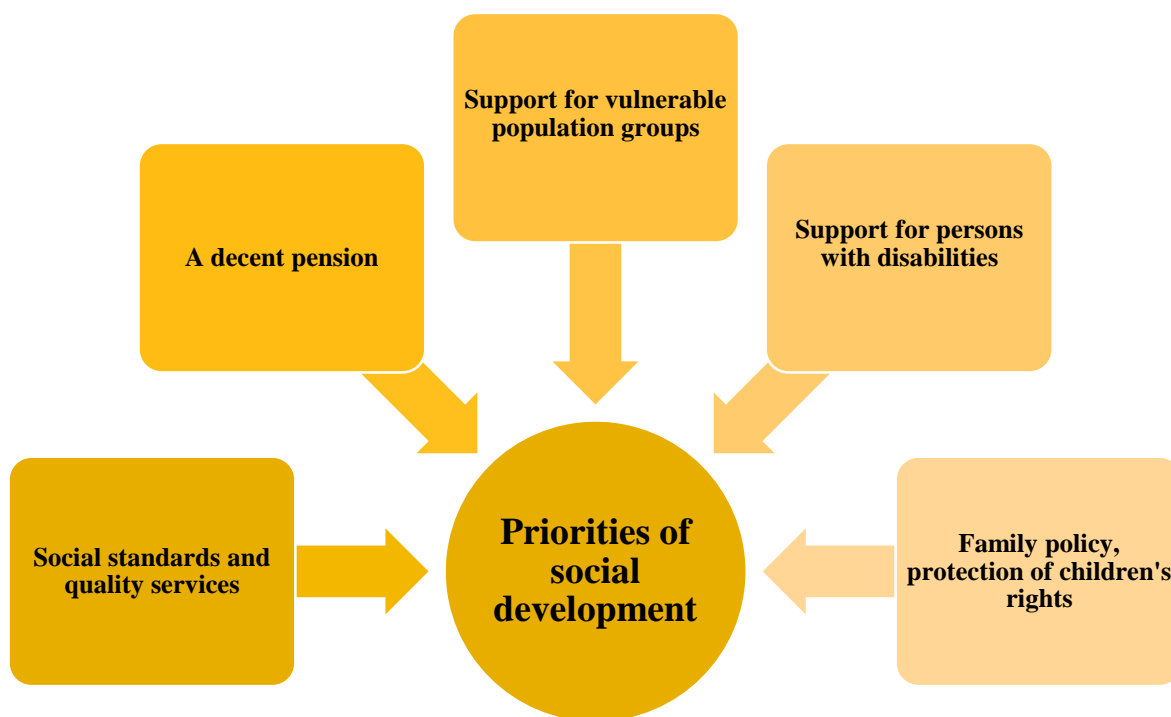


Fig. 10. Priorities of social development determined for the Ministry of Social Policy of Ukraine in the Activity Program of the Cabinet of Ministers of Ukraine dated June 12, 2020.

*Source: summarized by the authors based on (Cabinet of Ministers of Ukraine, 2020).*

It should also be noted that the National Economic Strategy for the period up to 2030 has been approved at the national level. The mission of this Strategy is «to create an opportunity to realize the country's existing geographical, resource and human potential to ensure the appropriate level of well-being, self-realization, security, rights and freedoms of every citizen of Ukraine through innovative, proactive economic growth taking into account the Sustainable Development Goals and the need to achieve climate neutrality later in 2060» (National economic strategy, 2021).

IN this document details the main directions of the national policy in all spheres of economic activity, which cover all strata of the population and reveal a complex of major problems by territorial, branch, institutional, sex-age, gender, and cultural-ethnic characteristics. Responsible for the implementation of the strategy are all executive authorities and their territorial subdivisions on the ground. As for the social sphere, in this strategy, the main emphasis is on ensuring such a strategic goal as the development of human potential.



It should be understood that a realistic assessment of the level of implementation of the general strategy and individual national and regional programs can be obtained on the basis of a comparison of indicators of socio-economic development before and after active actions regarding the implementation of all tasks outlined in the content of this document.

As the results of the conducted assessment showed, it is appropriate to include the following general indicators of the assessment of the level of social development:

- the amount of expenditures of the consolidated budget of Ukraine for social protection and social security of the population in % of total expenditures;

- indices of the physical volume of the VP per person in the prices of the previous year;

- the amount of expenditures of the consolidated budget of Ukraine on social protection and social security of the population in % of GDP.

The partial components of the assessment of the level of social development of the country include a number of components, the importance of the study of which is determined by the presence of urgent problems that are characteristic of certain sections of the country's population. According to the results of the comprehensive assessment, it was found that among all the components, the demographic component and the education service provision system were characterized by the lowest level of social development.

Our future country, because during the years of independence, the population is constantly decreasing, and the preservation of such negative trends can lead to the loss of the gene pool and ethnic affiliation of our population countries. At the same time, it should be noted that this problem cannot be solved only at the national level, because macroeconomic regulation carried out by state authorities at the national level must be supported to a large extent by local state authorities, in particular, newly created territorial communities.

The second important priority at the level of the country and individual regions should be the improvement of the system of providing education services, because the results of the comprehensive assessment revealed that this area demonstrates the negative dynamics of changes in the group index in this area. This is explained by the decrease in the number of students, entrants to colleges and universities due to the negative consequences of the demographic crisis at the beginning of the 20th century in Ukraine.

The set of priority measures for the implementation of the national policy of increasing the level of social development in terms of the criteria highlighted in the previous section of the work is presented in Figure 11.

Demographic component	<ul style="list-style-type: none"> <li>• provision of additional social benefits to young families upon the birth of a child;</li> <li>• restrictions on labor migration of the population abroad;</li> <li>• creating conditions for realizing the intellectual potential of young people within the territory of the region</li> </ul>
Compliance with minimum social guarantees for the population	<ul style="list-style-type: none"> <li>• the use of administrative levers to influence employers in order to comply with and improve social standards;</li> <li>• activation of social dialogue to take into account the interests of all parties in the matter of defining social standards</li> </ul>
Incomes and expenses of the population, which determine the level and quality of life	<ul style="list-style-type: none"> <li>• development of program measures to reduce population differentiation by income levels;</li> <li>• establishment of regional standards for the consumption of essential products</li> </ul>
Provision of social and labor guarantees to the employed population	<ul style="list-style-type: none"> <li>• creation of consultation centers to provide legal assistance to employees</li> <li>• establishing a clear periodicity of meetings of the heads of trade union committees of large and medium-sized enterprises of the region to discuss urgent problems and exchange experience</li> </ul>
Provision of services to the unemployed population	<ul style="list-style-type: none"> <li>• audit of the unemployed population for involvement in the shadow sector of the economy</li> <li>• expansion of the range of services of local employment services</li> <li>• inspection of activities of private recruiting companies</li> </ul>
Provision of education services	<ul style="list-style-type: none"> <li>• allocation of funds to finance the activities of vocational and technical educational institutions</li> <li>• strengthening of independent public control over the quality of local services at different local levels</li> <li>• intensification of work with territorial communities to preserve primary and secondary schools in rural areas</li> </ul>
Provision of health care services	<ul style="list-style-type: none"> <li>• strengthening of independent public control over the quality of health care services</li> <li>• creation of a transparent financing mechanism for medical institutions in rural areas</li> <li>• control within the scope of competence over the market of medical preparations</li> </ul>
Provision of services of cultural institutions	<ul style="list-style-type: none"> <li>• subsidizing the activities of cultural and art institutions in rural areas</li> <li>• giving priority to local groups at festive events</li> <li>• active involvement of young people in cultural events</li> </ul>
Provision of services to socially vulnerable sections of the population who needed social assistance	<ul style="list-style-type: none"> <li>• carrying out an independent verification of the financial status of persons applying for social guarantees</li> <li>• full financing of the activities of institutions for socially vulnerable groups of the population</li> <li>• increasing the amount of social benefits in accordance with the change in the inflation rate</li> </ul>

Fig. 11. Priority activities implementation national policy increase equal social development in cut criteria

Source: author's work.

On the basis of the above, it can be stated that the effectiveness of the national economy to a certain extent depends on the level of socio-economic development of the country and regions, which differ among themselves in terms of social, territorial and industry characteristics.

The effectiveness of the system of stimulating the increase in the level of social development is determined by the improvement of the values of a set of indicator indicators in the main directions of the social sphere.

In order to implement the proposed proposals, it is important to adhere to the strategic goals of social development in order to ensure the overcoming of all crisis phenomena that have a negative impact in this period, and the creation of comfortable conditions for the life and business of all segments of the population and subjects of economic activity in our country.

Therefore, due to the adoption of national and regional programs of social development, attracting additional funds, a number of urgent social problems can be solved. Since the increase in the level of social development is primarily an indicator of positive changes in the development of society in general, the approximation to European standards of the standard of living of the population.

## **Conclusions**

In the process of research in perfect a methodical approach to the analysis and assessment of the level of social development of the country based on a set of criteria: demographic component, compliance with minimum social guarantees for the population, incomes and expenses of the population that determine the level and quality of life, provision of social and labor guarantees to the employed population, provision of services to the unemployed population, provision services of education, health care, cultural institutions, services to socially vulnerable sections of the population.

The results of the approbation of the methodology of a comprehensive comparative assessment of the level of social development in Ukraine made it possible to identify a number of systemic problems of social development. In particular, it was found that in 2017, 2018, 2020 lower average levels were allowed, and in 2016 and 2019 higher average levels of social development of Ukraine, which is connected with the negative influence of a number of external and internal factors. Among the individual assessment criteria, the main problems arise in terms of ensuring the proper level of provision of education and health care services, improving the demographic situation in Ukraine.

Acquired further development an approach to substantiating the priorities of the national policy of increasing the level of social development depending on the results of a comprehensive assessment based on selected criteria, which allows determining the priorities of its formation and implementation. A set of priority measures for the

implementation of the policy of increasing the level of social development of Ukraine is substantiated in terms of the selected 9 evaluation criteria.

The main principles of the program of social development of Ukraine have been defined, the purpose of which is to improve the level and quality of life of the population by ensuring a stable increase in the level of social development and maintaining positive trends in all sectors of the economy, due to the expansion of the sphere of production, the creation of new jobs, the introduction of progressive forms of production organization in agro-industrial complex, increasing the efficiency of housing and communal services, improving road infrastructure, solving problems in the social and humanitarian sphere.

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## 1.5. METHODS OF ANALYSIS AND EVALUATION OF THE EFFECTIVENESS OF CRISIS MANAGEMENT IN THE REGION

The problem of analyzing the effectiveness of management of socio-economic development of the region is constantly in the center of attention of the theory and practice of regional management. However, in modern crisis conditions, it has acquired special significance, since the crisis management conditions require the formation of effective and efficient management mechanisms for these complex territorial systems, which, based on the latest scientific achievements, would allow to effectively solve the current problems of overcoming the crisis with minimal negative social and economic consequences, and also contributed to the prevention of the crisis at the meso level.

In order to prevent the emergence of crises in the socio-economic development of the region, the application of the crisis management system of the region, it is important to study the existing methodological approaches to assessing the effectiveness of regional management with the aim of further developing the methodology for analyzing the effectiveness of crisis management in the region, which allows us to approach the solution more comprehensively and systematically of this problem.

Modern scientific literature highlights separate approaches to assessing the level of crisis and the effectiveness of anti-crisis management in the region. In this direction, it is appropriate to consider the research of I. Artym, I. Vakhovuch, V. Asanov, R. Bilyk, E. Vedung, Z. Gerasimchuk, A. Goshko, V. Dzyundzyuk, V. Ivanov, M. Lesechko, S. Melnyk, R. Rudnitska, A. Chemeris and others, where each of them built their research on one or another concept of assessing the effectiveness of the anti-crisis management of the region, and thus identified different criteria and signs of crisis. The analysis of existing methodical approaches to assessing the effectiveness of anti-crisis management in the region made it possible to identify several concepts for determining and assessing the effectiveness of anti-crisis management at different hierarchical levels, the content of which is given in Table 1.

According to the results of the table, we can observe that most researchers focused their attention on the development of concepts of management efficiency, where the object is either the macro level (national economy) or the micro level (the level of an enterprise or organization), leaving out the meso level, that is, the region of the state. The effectiveness of crisis management at the macro level (level of the

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national economy) depends, first of all, on the stage of cyclical socio-economic development of the region, the level of crisis in the region and the effectiveness of regional management.

Table 1

Concepts for determining and evaluating management effectiveness

Name of the concept	Hierarchical level (crisis management object)	Content of the concept
Targeted concept of management efficiency	National economic	Concept according to which activity is aimed at achieving certain goals, and management efficiency characterizes the degree of achievement of set goals. Management efficiency determined according to this concept has a specific name: broad management efficiency or management effectiveness.
System concept of management efficiency.	Enterprise (organization)	Concept according to which the results of the organization's activities are influenced by both internal factors and factors of the external environment, and management efficiency characterizes the degree of adaptation of the organization to its external environment
Functional concept of management efficiency	Enterprise (organization)	Concept according to which management is considered from the point of view of labor organization and functioning of management personnel, and management efficiency characterizes the comparison of results and costs of the management system itself.
The concept of management efficiency based on the achievement of a balance of interests	Enterprise (organization)	The concept according to which the organization's activities are aimed at meeting the expectations, hopes and needs (interests) of all individuals and groups that interact in the organization and with the organization, and management effectiveness characterizes the degree of achievement balance of interests of all individuals and groups interested in the activities of the organization. Determining the effectiveness of management based on the concept of achieving a "balance of interests" is based on measuring the degree of satisfaction of the needs of all groups interested in the results of the organization's activities. The main criterion for evaluating the effectiveness of management according to this concept is achieving a balance of interests of all those interested in the results of group management.
Composite concept of management effectiveness	Organization Concept	according to which management effectiveness is determined by the degree of influence of management work on the results of the organization as a whole.

After all, it is the ratio of costs for the socio-economic development of the region and the obtained results of the activities of various business entities of the region that will determine the effectiveness of regional management, the targeting of grants, subsidies, subventions and other types of interbudgetary transfers, the implementation of regulatory, investment, innovation, social, etc. types of regional policies, and, hence, the effectiveness of managing the national economy as a whole.

On the other hand, we believe that each of the considered concepts cannot exist separately from each other, since a comprehensive assessment of the effectiveness of regional crisis management requires:

- from the point of view of the target concept – setting clear goals and building a «tree of goals» of regional anti-crisis management, the implementation of which is necessary to assess the level of their achievement, and therefore the effectiveness of the actions of regional management bodies;

- from the standpoint of the system concept – taking into account the influence of destabilizing factors that determine the state of crisis of the socio-economic development of the region and the level of its security;

- from the standpoint of the functional concept – an assessment of the effectiveness of the implementation of management functions by regional management bodies by comparing the results obtained (or the achievement of goals as in the target concept) and the costs of the management system (regional management);

- from the standpoint of the concept of achieving a «balance of interests» – taking into account the interests of all interested parties in the socio-economic development of the region through the harmonization of the use of the productive forces of the region and meeting the needs of the population, which will contribute to the achievement of balanced socio-economic development and the assessment of its level through the prism of determining the received revenues to expenses for socio-economic development of the region;

- from the position of the composite concept - an assessment of the impact of the actions of regional management bodies on the results of regional development through the prism of comparing the achieved results of socio-economic development, which can be the level of crisis in the region and the costs of regional management. In connection with this, there is a need to develop and implement a balanced concept of assessing the effectiveness of anti-crisis regional management, which would allow taking into account the postulates of the above concepts.

In the basis of the author's concept of the effectiveness of anti-crisis regional management, it is proposed to put such basic criteria as a comparison of the results obtained from the management of the socio-economic development of the region (the level of crisis of the region) to the costs incurred for it (costs of regional management), which will characterize the degree of achievement of the set goals of anti-crisis regional



management ; identifying the equilibrium of the socio-economic development of the region through the evaluation of the efficiency of the socio-economic development of the region by comparing the income and expenses incurred for the socio-economic development, which will characterize the state of equilibrium of the region; taking into account destabilizing factors affecting regional management by conducting an assessment of the social and economic security of the region; assessment of the depth and type of the region's crisis, which will be characterized by the ratio of the dynamics of the levels of socio-economic development of the regions of the state and the dynamics of indicators of the effectiveness of their socio-economic development; performance evaluation anti-crisis regional management, which will reflect different states of the region: recession, revival, boom or peak.

The tool for implementing such a concept is the development of a methodology for the analysis and evaluation of the effectiveness of crisis regional management. Representatives of the concept of management efficiency based on achieving a «balance of interests» mainly saw in ensuring a high quality of life of the population, a high level of human development as an integrating indicator characterizing the level of socio-economic development and the effectiveness of crisis regional management. However, based on the content of the concept of management efficiency as a whole, it is necessary to ensure the implementation of such a criterion as a comparison of the incomes received by the population of the region from the implementation of labor activities with the costs incurred by the regional management bodies to ensure a high level of quality of life for the residents of the territory, which will characterize the effectiveness of social development region Only in this case will it be possible to talk about the effectiveness of regional management, achieving a balance of interests between all subjects of the regional socio-economic system, finding alternative ways to reduce costs and increase population incomes. Only under the conditions of a harmonious combination of various socio-economic processes and phenomena of the region, it will be possible to avoid or mitigate crisis processes in the development of the region, to achieve high efficiency of regional management. Representatives of the concept of the quality of management focus their attention on compliance by regional management bodies with the current regulatory and legal framework. However, legality cannot serve as an indicator of efficiency, since in terms of content and character it is, first of all, a principle of regional management, which is enshrined in the Constitution of Ukraine. On the other hand, the criterion of the effectiveness of regional management is the achievement of the effect as a quantitative indicator and measure of the effectiveness of the socio-economic development of the region, which can be the level of crisis in the region.

Usually, qualitative assessment among all assessment methods is characterized by subjectivity, as it does not allow to interpret the cyclical phase of the socio-economic

development of the region and, thus, to determine the depth and type of the region's crisis, to develop an anti-crisis strategy for regional management. Representatives of the functional concept in the assessment of the effectiveness of anti-crisis management include such a factor as the comparison of received benefits with costs. However, in the changing conditions of the economic environment, the region as a socio-economic system will go through different stages of the life cycle of its development, where the transition from one state to another will be determined by the destabilizing (stabilizing) influence of various factors. In this regard, the level of socio-economic development will undergo significant changes, which requires a detailed structuring of the revenues and expenses that the region will bear in connection with such changes, the application of various anti-crisis measures, which will determine the effectiveness of the anti-crisis management of the region. Thus, with the positive influence of some factors on the socio-economic development of the region, another group of factors will have a neutralizing or destabilizing effect, which will lead to the emergence of crisis phenomena within the region.

Therefore, it is quite important to study the set of various factors of the internal and external environments from the standpoint of assessing the state of socio-economic security of the region in order to take into account the factors that have a positive impact on regional management and to avoid their destabilizing action from the other side (identification of crisis-forming factors), which can lead to the emergence crisis phenomena in the socio-economic sphere of the region. To assess the effectiveness of crisis regional management, scientists use a simplified system of analysis based on one indicator, or replacing the efficiency indicator with other indicators that do not correspond to the concept of management effectiveness and does not allow for an objective analysis of the effectiveness of anti-crisis management. Unlike from the above, we propose to use a complex and extensive system of indicators that will characterize the level of crisis of the socio-economic development of the region from the position of equilibrium and safety, as indicators of the effectiveness of regional management, and indicators that will reflect all costs borne by the subjects of the regional system for social -economic development and regional management. Thus, results will be compared with costs, as criteria for the effectiveness of anti-crisis regional management.

In addition, many authors suggest the use of indirect methods of assessing the effectiveness of regional management by involving experts and carrying out expert assessments. Expert assessments are distinguished by subjectivity, inaccuracy and the inability to predict and determine the state of crisis in the region through the assessment of the balance and security of socio-economic development. In order to avoid this debatable moment, when developing the author's methodology and conducting an assessment of the effectiveness of regional anti-crisis management, it is proposed to

apply only quantitative assessment methods, for example, such as analysis and comparison - to develop a system of indicators for assessing the effectiveness of regional anti-crisis management; to establish the structure and set of primary indicators for the analysis and assessment of the socio-economic development of the region; economic and statistical methods - for statistical data processing when evaluating the effectiveness of anti-crisis regional management; of strategic analysis - for identification and positioning of regions according to the level of balance, safety and uniformity of socio-economic development of the region. The obtained final quantitative indicators of the analytical study will characterize the effectiveness of the anti-crisis management of the region. In some methods, there is a contradiction regarding a clear understanding of the efficiency achieved as a result of regional management, which would characterize the main goal of anti-crisis regional management, since, in our opinion, only the final results of the functioning of the socio-economic system, that is, the effect that arises under the influence of regional management, can realistically determine the stage of the life cycle of socio-economic development of the region and evaluate the overall effectiveness of anti-crisis regional management.

Thus, the approach to determining the criterion of effectiveness of anti-crisis management of socio-economic development of the region from the standpoint of the effect created in the region most comprehensively characterizes the effectiveness of anti-crisis management of socio-economic development of the region. Having conducted a detailed review and analysis of concepts for evaluating the effectiveness of management from the standpoint of anti-crisis management of the region, using the work and acquisitions of scientists regarding the justification of methods for evaluating the effectiveness of management, their advantages and debatable provisions, we will develop an author's approach to the choice of a methodological approach for evaluating the effectiveness of anti-crisis regional management, based on which should be placed (Fig. 1):

- assessment of the socio-economic development of the region by comparing the levels of development of the economic and social spheres;
- assessment of the effectiveness of the regional development of the region for the purpose of identifying signs of balance between the available income and expenses for the socio-economic development of the region;
- assessment of the crisis level of the region as a criterion for determining the final beneficial effect of anti-crisis management;
- assessment of the effectiveness of anti-crisis regional management by comparing the final beneficial effect of anti-crisis management to the costs of regional management of socio-economic development;

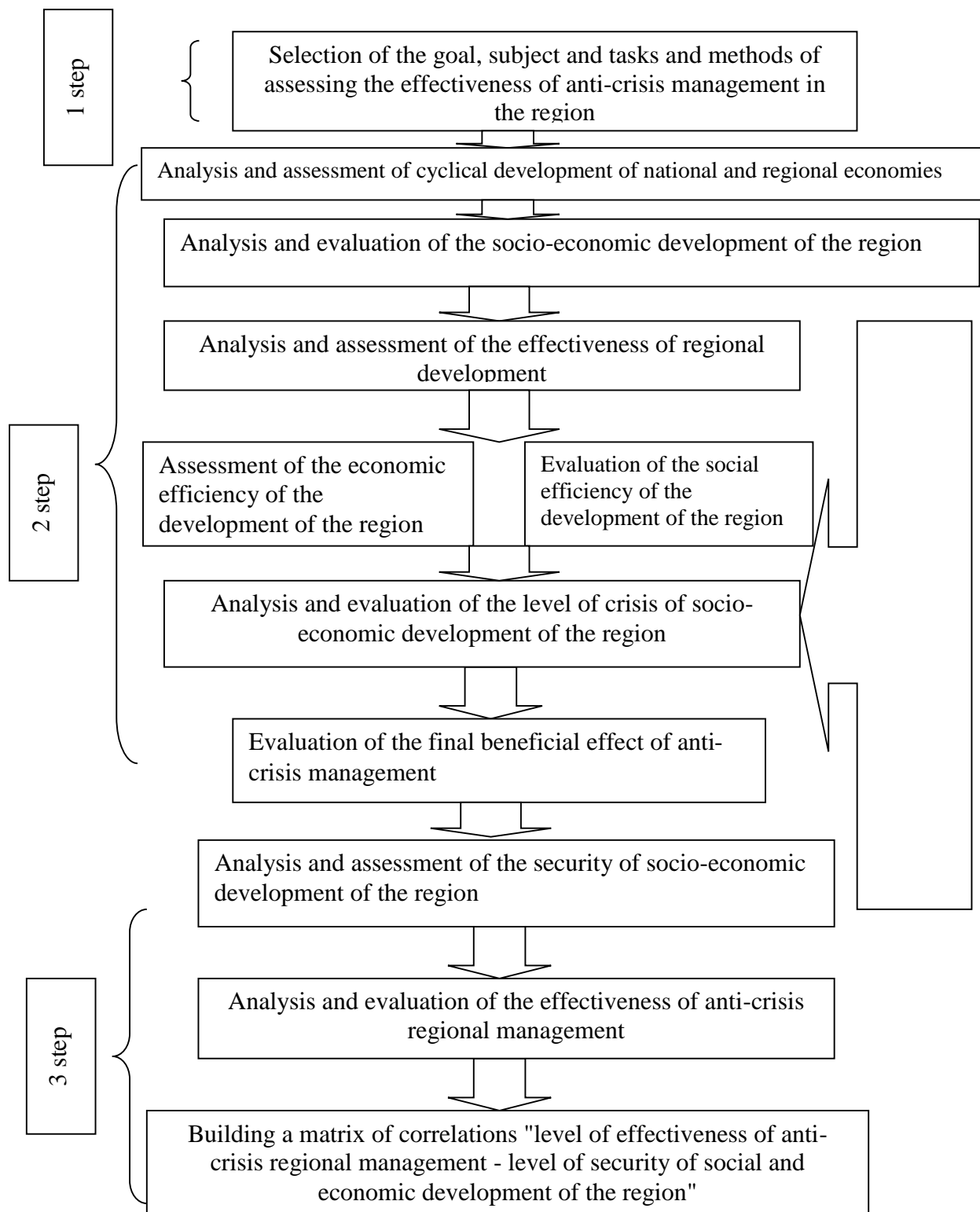


Fig. 1. Methods of analysis and evaluation of the effectiveness of anti-crisis regional management

- assessment of socio-economic security as a direction of assessment of the impact of destabilizing factors on the development of the region;

The developed method of analysis and evaluation of the effectiveness of anti-crisis regional management contains three successive stages. At the first stage, the goal,

tasks and methods of assessing the effectiveness of the anti-crisis management of the region are chosen. The main goal of analytical research is the analysis and

assessment of the effectiveness of anti-crisis regional management in order to objectively determine the effectiveness of anti-crisis management of the socio-economic development of the region. According to the goal, the object of the study is the process of anti-crisis management of the socio-economic development of the region in terms of its effectiveness. The subject of the analysis is the level of crisis in the region.

The tasks of analytical research include the following:

- assessment of cyclical development of national and regional economies;
- assessment of socio-economic development of the region;
- assessment of the effectiveness of the socio-economic development of the region;
- assessment of the crisis of socio-economic development of the region;
- assessment of socio-economic security of the region;
- assessment of the effectiveness of anti-crisis regional management;

Among the main methods that will be used in the process of analytical research and which were discussed above, it is advisable to highlight the following: the method of standardization of indicators, the index method, the comparison method, each of which will be used at different stages of the algorithm for evaluating the effectiveness of anti-crisis regional management.

The basis of the information support for the assessment of the anti-crisis management of the socio-economic development of the region is: domestic and foreign scientific publications on the studied issues; legislative and regulatory acts of Ukraine; statistical collections, bulletins and materials of the State Committee of Statistics of Ukraine, regional statistical offices and regional authorities.

The second stage of the study involves the analysis and assessment of the level of cyclicity of the development of the national economy; socio-economic development of the region; assessment of the effectiveness of the socio-economic development of the region; assessment of the depth of the crisis of socio-economic development of the region, which will characterize the final beneficial effect of anti-crisis management; assessment of factors causing the emergence of crisis phenomena in the socio-economic development of the region. An important direction for assessing the effectiveness of anti-crisis regional management is the assessment of the cyclicity of the development of the national economy. Evaluating the cyclicity of the development of the national economy, scientists consider the following periods as short-term cycles (*Kostiana, 2011, p. 163-167*).

1996-1998;

1999-2002;

2003-2005;  
2005-2006;  
2007-2010

When interpreting the modified taxonomic indicator, it should be taken into account that this unit is more developed, the closer its value is to the unit. Using statistical methods of grouping, the range of values of the modified taxonomic indicator of the level of development was divided into eight intervals, each two corresponding to a stage of the cycle. The following system of calculation formulas should be used to calculate the taxonomic index:

- determination of indicators of stimulators and de stimulators of the development of the region;
- calculation of the indicator of the taxonomic level of development, which allows you to determine the distance between individual periods and the reference vector;
- determination of the taxonomic index of the development coefficient.

The next direction of assessment is the analysis of the levels of socio-economic development of the regions of the state in order to determine the signs of crisis. For a balanced assessment of social and economic development, it is necessary to create a list of group and partial indicators of quantitative assessment that will characterize it (Fig. 2).

Assessment of the level of socio-economic development should be carried out based on primary statistical data according to the official statistical materials of the State Statistics Committee. The system of partial indicators characterizing the level of socio-economic development of the region according to the areas of research is presented in the table 2.

At the same time, taking into account the fact that certain indicators have a positive effect on the socio-economic development of the region, while others have a negative effect, they should be divided into two groups (*Vakhovich, 2007, p. 237*): - those whose growth positively characterizes the level of socio-economic development of the region. Such indicators (indicators) are called stimulators; - those whose growth negatively affects the socio-economic development of the region. They are called destimulators. To ensure the process of standardization of indicators (bringing them to one unit of measurement - coefficients), we will use the following formula:

$$a_{ij}^c = \frac{\tilde{o}_{3j}}{\max x_i} \quad , \quad a_{ij}^d = \frac{\min x_i}{\tilde{o}_{3j}} \quad , \quad (1)$$

where  $a_{ij}^c$  i  $a_{ij}^d$  are respectively standardized i-stimulating indicators and de-stimulating indicators for the j-th region;

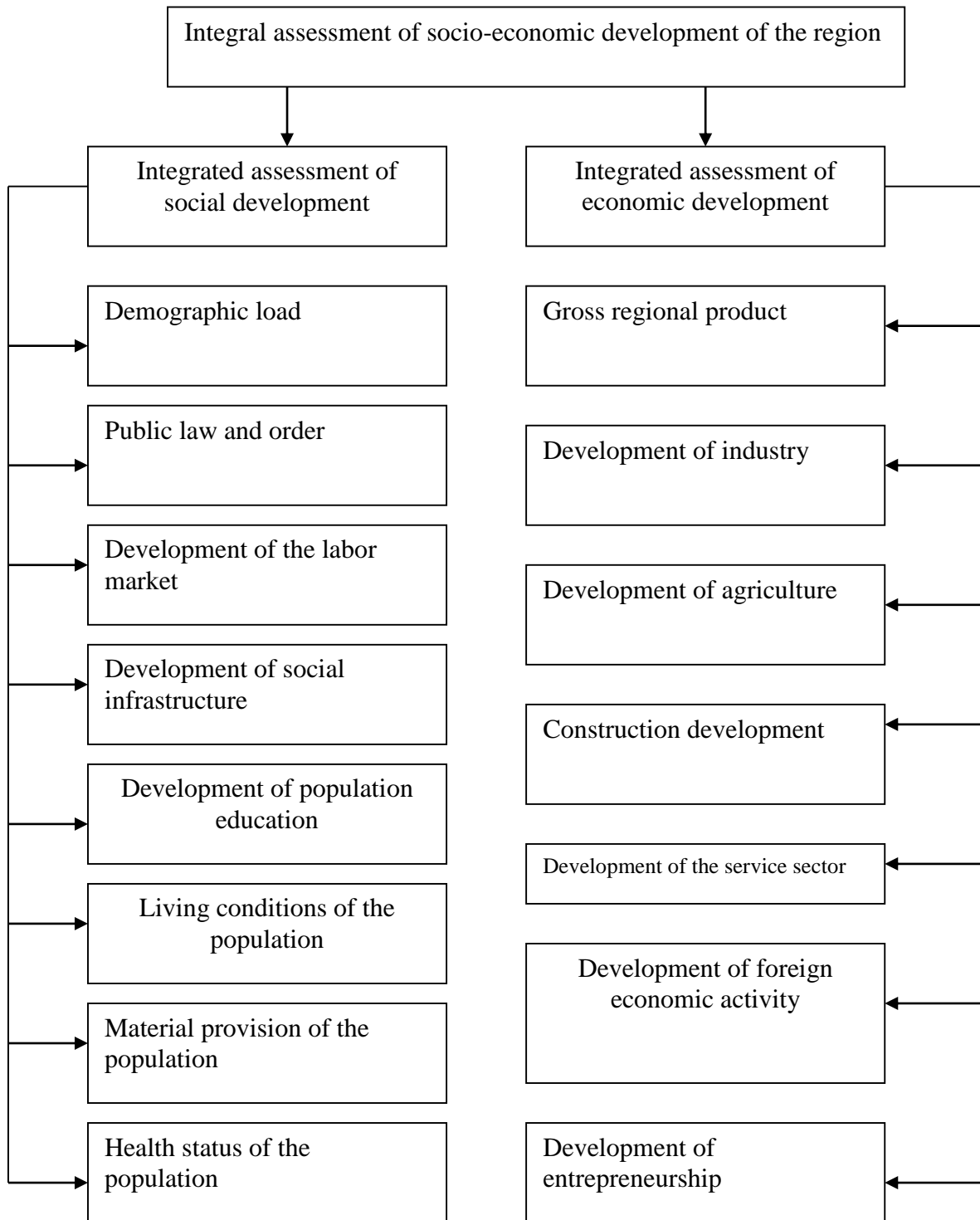


Fig. 2. Areas of assessment of socio-economic development of the region

Table 2

## Indicators of assessment of the level of socio-economic development of the region

Spheres of development of the region	A group of evaluation indicators	Partial evaluation indicators
1	2	3
Economical development	Gross regional product	Gross regional product per capita
	Development of industry	Volume of sold industrial products per person
	Development of agriculture	Production of gross agricultural products per person in comparative prices
	Construction development	Commissioning of housing for 1,000 people
		Investments in fixed capital per person
	Development of the service sector	The volume of implemented services per person
		Retail turnover per capita
	Development of foreign economic activity	Retail turnover per capita, \$
		Import of goods and services per person, \$
Development of entrepreneurship	Export-import coverage ratio	
	The number of small enterprises per 10,000 people of the existing population, units	
Social development	Demographic load	The share of products of small enterprises in the total volume of products sold, %
		The size of the existing population
		Demographic load factor (number of pensioners per 1000 population)
		Share of the population of working age to the total population, %
		Birth rate
	Public law and order	Mortality rate
		Number of registered crimes (per 10,000 population)
		Number of persons who suffered from crimes (per 10,000 population)
		The number of persons who committed crimes per 10,000 people
	Development of the labor market	The number of identified minors who have committed crimes
		Load of citizens who are not engaged in labor activity for one vacant workplace, vacancy, persons
	Development of the labor market	Unemployment rate, %
		Number of retail trade enterprises (per 10,000 population)
Number of restaurant enterprises (per 10,000 population)		



Continuation of table 2

1	2	3
		Number of seats in club-type cultural institutions (per 100 people)
	Development of population education	The level of coverage of children in preschool institutions, as a percentage of the number of children of the appropriate age, %
		The number of students in general education institutions per 10,000 population, people
		The number of students, trainees of vocational and technical educational institutions per 10,000 population, people
		Number of students of universities I - IV accreditation levels per 10,000 population, people
		Highly qualified specialists employed in the economy, per 10,000 people,
	Living conditions of the population	Provision of housing for the population, m <sup>2</sup> of total area per inhabitant
		Provision of housing for the population in urban settlements, m <sup>2</sup> of total area per inhabitant
		Provision of housing for the population in rural areas, m <sup>2</sup> of total area per inhabitant
		Provision of the population with private passenger cars (per 1000 population)
		Density of public railway tracks, km per 1000 sq.m. territory
		Density of paved public roads, km per 1000 sq.m. territory
		Provision of the population with basic home telephones (per 100 families)
	Material provision of the population	Income of the population per person, hrn
		Average monthly salary of employees
		Expenditures of the population per person
	Health status of the population	The level of work-related injuries, the number of victims per 1,000 workers, persons
		Providing the population with medical hospital beds (per 10,000 population)
		Provision of the population with doctors of all specialties (per 10,000 population)
		The level of recovery in sanatoriums and health resorts

$x_{ij}$  - the  $i$ -th indicator of socio-economic development of the  $j$ -th region;  
 $i = 1 \dots, n$ - indicators on the basis of which the research is conducted;  
 $j = 1 \dots, m$  are regions under investigation.

In order to determine the characteristics that do not significantly affect the level of development of the region, the coefficient of variation should be calculated:

$$V_j = S_j / \bar{X}_j, \quad (2)$$

where  $V_j$  - coefficient of variation;

$S_j$ - root mean square deviation of the  $j$ -th feature:

$$S_j = \sqrt{\frac{1}{m} \sum_{i=1}^m (X_{ij} - \bar{X}_j)^2} \quad (3)$$

$m$  – the number of objects of analysis ( $i = 1, 2, \dots m$ );

$x_{ij}$ –is the value of the  $j$ -th feature characterizing the state of the  $i$ -th object

$\bar{x}_j$  - arithmetic mean value of the  $j$ th feature:

$$\bar{X}_j = \frac{1}{m} \sum_{i=1}^m X_{ij} \quad (4)$$

$n$  - number of signs ( $j = 1, 2, \dots n$ );

After the determination of each  $j$ -th characteristic  $v_j$ , the inequality is checked:

$$V_j < e \quad (5)$$

If  $v_j$  is less than the value  $e = 0.1$ , the signs are considered quasi-permanent and are excluded from the list and further research. The key and fundamental for determining the integral level is the choice of the method of grouping partial destabilizing factors into a general assessment of the level of socio-economic development of a specific region, that is, the choice of the method of "collapsing" partial assessments into an integral one. In order to avoid such a situation, a modification of this formula in the form of a modified geometric mean is often proposed (*Bakhrushin, 2011, p.161*):

$$x_{geo} = \sqrt[n]{\prod (1 + x_n)} - 1 \quad (5)$$

When using such a method, it is assumed that the more one partial score decreases, the more difficult it is to compensate for it by increasing another partial score. In other words, a low value of at least one of the partial scores significantly lowers the integral score. The strategic goal of the anti-crisis management of the region

can be considered to be the achievement of balanced and safe socio-economic development. Equilibrium will reflect such a state of development of the region, under which there will be a harmonization of the use of the productive forces of the region, satisfaction of the needs of the population, and on this basis - a balanced socio-economic development of the region.

The index of the balance of socio-economic development of the region indicates the achievement of such a final effect of anti-crisis regional management, which involves observing the proportion of the components of its potential that is special for each regional system, overcoming the destructiveness of other components, stimulating intra-regional and inter-regional ties (*Raevneva, 2016, p. 596*), in which a balance is achieved between the available income of the region from various types of economic activity, the income of the population and expenses for the socio-economic development of the region, which creates favorable conditions for the crisis-free socio-economic development of the region. Achieving a balance between available income and expenses will characterize the socio-economic efficiency of the region's development. The effectiveness of the development of the region is the degree to which the regional management system achieves the final beneficial effect of anti-crisis management, which should take place under the condition that it fully fulfills its management functions. The higher the level of the final beneficial effect of anti-crisis management, the higher the level of effectiveness of the socio-economic development of the region, and vice versa. The main goal of effective regional management is to meet the needs of the region in a sufficient amount of income, which forms its income to finance activities and ensure real socio-economic development, increase the welfare of the population and a positive financial result, provided that economic and financial resources are minimized.

This can be achieved through the use of regional development management efficiency criteria. Indicators characterizing positive shifts in socio-economic development and the depth of its crisis should be the defining features of the model of effective regional management. At the same time, both the consumption process and the accumulation process involve the use of the main factors of production (labour resources, labor items, means of labor), for the formation and development of which regional funds are used. Therefore, it is advisable to distribute the income generated within the regional system between all production factors that determine both economic and social development in accordance with the defined structure of the regional economy, on the other hand, to maintain a balance between the rate of capital accumulation and the socio-economic growth of the region. Accordingly, income in the form of direct investments, investments in fixed capital, investments in terms of the main types of economic activity (investments in agriculture, forestry, industry, construction, restaurant business, trade, repair of cars, hotels and restaurants; transport

and communication etc.) of household incomes, will form the income part of the socio-economic development of the region is the main instrument of regulation of the regional authorities of the socio-economic development of the region. One of the objectives of regional management of effective management is to observe the proper structure of investment in various types of economic activity, which will mean investing in progressive and priority directions of regional development, due to which it will be possible to achieve a positive beneficial effect of anti-crisis management and intensive economic growth. As for the social component of regional development, its income part is represented by the population's savings, that is, its income from labor activities.

The costs of the region, which determine the model of effective regional management and the level of the beneficial effect obtained from anti-crisis management, are the costs of the consolidated budget of Ukraine for financing the economic development of the region by types of economic activity according to the budget classification (expenditures for agriculture, development of industry, construction, restaurant industry, trade, repair of cars, hotels and restaurants; transport and communications) and expenditures on the social sphere (expenditures on financing education, health care, spiritual development of the population, social security, etc.). The effectiveness of the economic development of the region will be determined by the formula:

$$Eek = \frac{R_{ek}}{E_{ek}} \times 100 \quad (6)$$

where  $R_{ek}$  - revenues of the region from all types of economic activity;  
 $E_{ek}$  - expenses of the region for economic development.

The effectiveness of the social development of the region will be determined by the formula:

$$Esoc = \frac{I_{soc}}{E_{soc}} \times 100 \quad (7)$$

$I_{soc}$  - incomes of the population;  
 $E_{soc}$  - expenses for social development of the region.

The threshold value of the effectiveness of the social and economic development of the region is 1 ( $E_{soc}; E_{ek} \geq 1$ ).

Socio-economic development can be considered balanced if the following function is observed:

$$I_{bal} = E_{ek}; Esoc \rightarrow \max \quad (8)$$

The calculated indicators of the socio-economic development of the region and the indicators of the effectiveness of regional development cannot be considered separately from each other. Only their simultaneous analysis and assessment will ensure the expected beneficial effect of anti-crisis regional management. On the other hand, the obtained system of these indicators is a dynamic criterion, the specificity of which is manifested in the fact that they set the direction of development of the regional system through the reflection at each moment of time of such a state that characterizes the depth of the crisis. Each indicator, which characterizes the integral values of the levels of socio-economic development of the regions of the state and the levels of its efficiency, is not determined by a fixed value, but can change in a certain time horizon. Having constructed the dynamics of the levels of socio-economic development of the regions of the state, the dynamics of the levels of effectiveness of the socio-economic development of the regions of the state and superimposed these two trend models on the ordinate axis X and Y, where X is the axis that characterizes the time period of changes in indicators, Y is the axis that characterizes the value of the indicators, we will obtain the area of a right-angled triangle, which will be the level of the crisis of socio-economic development of the region, and the value of its crisis level is the final beneficial effect of anti-crisis management (Fig. 3).

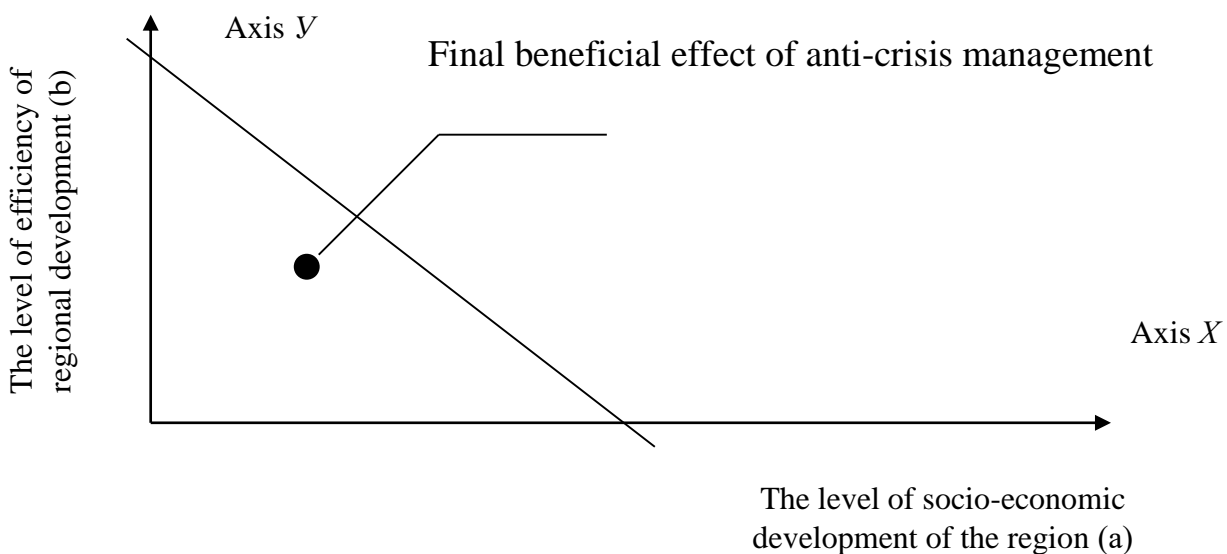


Fig. 3. Graphic representation of the area of a triangle

The area of a triangle is equal to half the product of its two sides multiplied by the sine of the angle between them.

$$S = \frac{1}{2} a \cdot b \cdot \sin \gamma$$

The emergence of various types of crisis and its depth are determined by factors that to one degree or another affect the results of regional management of the region's socio-economic development. Therefore, the quantitative assessment of the influence of factors on the socio-economic development of the region, which lead to the emergence of crisis phenomena for their timely elimination in the future, becomes important. At the third stage, the effectiveness of anti-crisis regional management of socio-economic development of the region is evaluated. The evaluation of the effectiveness of anti-crisis management is carried out on the basis of indicators from the point of view of a certain criterion. The criterion should adequately reveal the content of the evaluated phenomenon, i.e., on the one hand, characterize the targeted direction of management, its goal, and, on the other hand, indicate the final beneficial effect created as a result of its achievement. This understanding of the criterion of the effectiveness of anti-crisis regional management conditions the content of the indicators on the basis of which the effectiveness can be assessed.

We propose to evaluate the effectiveness of anti-crisis regional management in terms of the results of the activities of regional authorities, which will be the level of crisis of the socio-economic development of the region and the costs of regional management. We believe that the assessment of the effectiveness of the anti-crisis management of the socio-economic development of the region is not comprehensive without taking into account the costs of achieving the final beneficial effect of the anti-crisis management of the socio-economic development of the region. In our opinion, this necessity arises from the following dependence: the greater the socio-economic problems of the region, the lower the level of effectiveness of anti-crisis management of the socio-economic development of the region, and as a result, the efficiency of regional management is lower, and the need for financial resources is greater - necessary for their solution. That is, based on the above, it is appropriate to talk about effective management under the condition of minimal costs while achieving the maximum final beneficial effect.

Costs for regional management of socio-economic development include costs for labor, management equipment, organization of management support, and overhead costs. The integral assessment of the effectiveness of anti-crisis regional management will be determined by the formula:

$$K_e = \frac{\Delta E}{\Delta V} \quad (10)$$

where  $E$  is the rate of change in the level of the final beneficial effect from the anti-crisis management of the region;

$V$ - rates of change in costs for regional management.

The ratio between the rate of growth of the level of change in the level of the final beneficial effect of the anti-crisis management of the region and the rate of change of costs for regional administration will characterize the dynamics of changes in the depth of the crisis and the actions of regional administration bodies to eliminate or mitigate it. If the condition is  $>1$ , the effectiveness of anti-crisis regional management is achieved; under the condition  $<1$ , - inefficient spending of funds on anti-crisis regional management of socio-economic development of the region. That is, the unit will be considered the limit of effectiveness of anti-crisis regional management. The obtained values of the regional anti-crisis management efficiency index reveal the cyclicity of socio-economic development, identify regional problems and develop appropriate anti-crisis programs. In order to identify the cyclical state of socio-economic development of the regions of the state by the level of effectiveness of anti-crisis regional management, we suggest grouping using the following formula: where  $i$  is the grouping interval;  $X_{max}$  is the maximum value of the feature characterizing the state of the region;  $X_{min}$  is the minimum value of the feature characterizing the state of the region;  $n$  - number of groups (4 groups). There are four states that characterize the cyclical nature of socio-economic development of the region: boom, recession, depression, revival.

Therefore, it is necessary to determine the intermediate elements, such as recession and revitalization: recession acts as an opportunity to form prerequisites for the positive influence of factors on the socio-economic development of the region, and revitalization occurs when there is a direct growth of indicators that characterize the socio-economic development of the region, and accordingly there is a possibility of two radically different scenarios of the development of the region:

1) A positive scenario is an exit from the crisis, that is, a transition to a state of uplift, that is, the main task of anti-crisis management at the stages of recession is to prevent the emergence of a new depression, that is, to provide the system with upward development. Thus, regional development management can be considered effective.

2) Negative scenario – the return of the region to a state of depression. Such a scenario of regional development will indicate ineffective regional management. Therefore, we offer a system for diagnosing the state of crisis of the socio-economic development of the region, which includes the main constituent elements: a safe state of the socio-economic development of the region; regional development in a state of recession; regional development in a state of depression; regional development in a state of revitalization.

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**CHAPTER 2**

**MANAGEMENT**

**OF SPHERES**

**AND**

**TYPES OF ACTIVITIES**

## **2.1. INFORMATION AND ANALYTICAL SUPPLY OF THE SYSTEM FOR FORMATION OF BUSINESS PROCESS COSTS OF AGRICULTURAL ENTERPRISES**

Since the beginning of the war in Ukraine, the agricultural sector has faced a number of problems: the occupation of territories and lands where agricultural enterprises grow agricultural crops, theft of grain and its export outside the territory of Ukraine, blockade of sea ports, destruction of elevators, farms, machinery, fires in fields, etc. Nevertheless, most agricultural enterprises continue to work, because Ukraine must grow agricultural crops for domestic consumption and the international market, which depends on Ukrainian grain.

According to preliminary estimates, the potential direct damage caused to the domestic rural infrastructure and its assets as a result of a full-scale Russian aggression against Ukraine exceeds \$6 billion. Additional economic losses of the industry from the war in 2022 alone are expected to be about \$22 billion, and the reduction in the income of agriculture and related industries are predicted at the level of 10-30%. However, despite the large-scale destruction of rural infrastructure, pollution and production decline, leading experts say that this key industry will not lose its status as the breadbasket of Europe and the world (Uryadovyy kur'yer, 2022).

The current state of the agricultural sector of Ukraine requires the search for effective ways, in which agriculture found itself as a result of the war.

Ukraine is going through difficult times, and it certainly affected agribusiness. The agricultural sector is one of the main ones in the country, its role is difficult to overestimate, it is both the filling of the domestic market with the necessary products, the work of the food industry, and the inflow of foreign exchange earnings, which provides powerful support to the hryvnia. Food prices have been rising since the beginning of the war. It should be noted the increase in the price of some food products, especially vegetables. Some seasonal vegetables have become more expensive by 20%. There is no shortage of products in Ukraine, there are only problems with logistics, which affect the growth of prices.

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Before the war, the Ukrainian economy was called export-oriented. Exports and the companies that worked for them brought a significant part of the currency and taxes. The destruction of enterprises, blockade of seaports, logistical problems and restrictions on other trade routes led to a sharp reduction in Ukrainian exports. The reduction in trade exports of agricultural products is particularly painful. The world lost 20 million tons of food due to Russia's attack on Ukraine. From March to September 2022. Ukraine exported almost three times less than planned. Despite the war in Ukraine, foreign trade operations were conducted with partners from 225 countries of the world (Zanuda, 2022). Since the beginning of 2014, about 180,000 km<sup>2</sup> of territories – up to 30% of our state – have been affected by military operations in Ukraine. Russian troops fire 50,000-60,000 artillery shells per day, while 10% of the shells do not explode. Cluster ammunition is especially dangerous. Cluster munitions fail 50% of the time (Hunko, 2022).

Agricultural enterprises found themselves in the worst conditions. Their business is tied to a specific territory, and work in the field or on the farm cannot be postponed indefinitely or postponed. Preliminary estimates of total losses from the Russian-Ukrainian war in the agricultural sector of Ukraine reached \$4.3 billion (KSE Agrocenter, 2022). This figure is constantly growing. Agricultural lands are contaminated with improvised munitions, cluster munitions, anti-personnel and anti-tank mines. Contamination of agricultural land is approximately 25,000 km<sup>2</sup>. Demining agricultural land is estimated at approximately 10 million man-days and 2 billion euros (Ministry of Agrarian Policy and Food of Ukraine, 2022). Currently, it is extremely difficult for farmers to work, because about 20% of the territory of Ukraine is under occupation or is being fought over. We have to survive and work with such realities today. There were cases when farmers died while cultivating their land. Therefore, for the agricultural sector, the issues of demining and clearing land, as well as reclamation and restoration of soil fertility are currently priorities. The restoration of logistics chains and exports is also important.

Also, despite the tenacity and courage of Ukrainian farmers, there were objective obstacles to harvest on mined, occupied areas and destroyed crops. In connection with a decrease of almost 1 million hectares of areas from which it is possible to harvest, this forecast decreased to 64.5 million tons. However, under these conditions, exports from Ukraine in the 2022/2023 marketing year may still amount to 32.8 million tons for conditions for preserving the sea route of export and expanding the throughput capacity of crossings at the borders of Ukraine (Ukrainian Grain Association, 2022).

Therefore, Russian aggression has a significant impact on agribusiness and the fate of the future harvest, and the issue of saving resources in agriculture is quite acute, especially now, when there is a war in Ukraine, and many agrarians are faced with limited or complete lack of access to them. Cost management is the main component

of the process of managing agribusinesses, so building an effective cost management system of business processes in agribusinesses is more timely today than ever. Most enterprises in their activities use resources to perform each function separately, without mastering the process in general, and face communication problems within the organization.

The modern view of managing an organization is that it largely focuses on business processes. This involves the systematic identification of processes and their management, and especially the management of the interaction of people within individual processes and the organization as a whole. This approach, called Business Process Management, allows you to significantly increase the level of transparency and manageability of business and improve its main indicators (cost, time, quality, level of customer satisfaction, costs) (Vynohradova, 2005).

Agricultural enterprises carry out their activities in conditions of rapid, permanent and difficult to predict changes and uncertainty of the external environment. "Improving the economic situation in the agrarian sector of the economy is impossible without successful production and commercial activities of the enterprise, and these processes must be started precisely from the field of crop production, which has much greater prerequisites for sustainable and effective development and, of course, is the basis for the development of the livestock industry" (Berezivskyi, 2008, p.53).

Today, process-oriented management is the most progressive method, the implementation of which allows you to establish an effectively functioning management system at the enterprise. The modern view of managing an organization is that it largely focuses on business processes. This involves the systematic identification of processes and their management, and especially the management of the interaction of people within individual processes and the organization as a whole.

Business processes are "a system of interdependent, related business procedures (operations), which, as a rule, have an end-to-end, cross-functional nature (that is, they cover several functional areas that are separated in the traditional organizational structure)" (Danyliuk, 2002, p.25) .

Within the framework of this concept, we consider business processes as a stable set of interrelated actions (tasks, operations, functions), which, with the help of technologies and within a specified period, transforms "inputs" (resources) into "outputs" (results), which constitute a certain value for internal and external consumers and significantly influence the formation of the company's competitive advantages.

Each system exists and functions within certain limits that separate it from the external environment, but at the same time it can function and develop only under the condition of active interaction with the environment. At the same time, the external environment includes a set of objects external to the system, which either affect it, or it affects them. Thus, during its operation, the system is forced to constantly adapt to

the external environment at the "input" (to resource providers) and at the "output" (to consumers), harmonizing its material, informational and labor relations with its requirements (Vasylyuk, 2011 ).

Among the main advantages of the process approach to enterprise management, a high degree of motivation and a reduction in the burden on the manager due to the distribution of responsibilities among process executors are highlighted.

About the high flexibility, adaptability and dynamism of the management system and its processes due to vertical integration of resource flows and acceleration of information exchange; simplification of coordination, organization and control procedures; the possibility of complex automation of the management process is noted by O. Andriyuk (2007).

The main advantage of the process-oriented approach is a direct focus on the customer of products or services produced or provided by the enterprise. After all, it is the satisfaction of the customer's needs that leads to the fact that the product will be purchased by him or the service will be used, which means that the company will receive its profit (Lipych, 2011).

By its essence, an agricultural enterprise is an open system within which many business processes flow, but the primary ones, in our opinion, are the processes related to the production of plant products, which is the basis for the development of animal husbandry. Such processes, by their functioning, determine the state of the entire organizational system of the enterprise. Schematically, the flow of business processes in an agricultural enterprise, in particular in crop production, looks like this (Fig. 1):

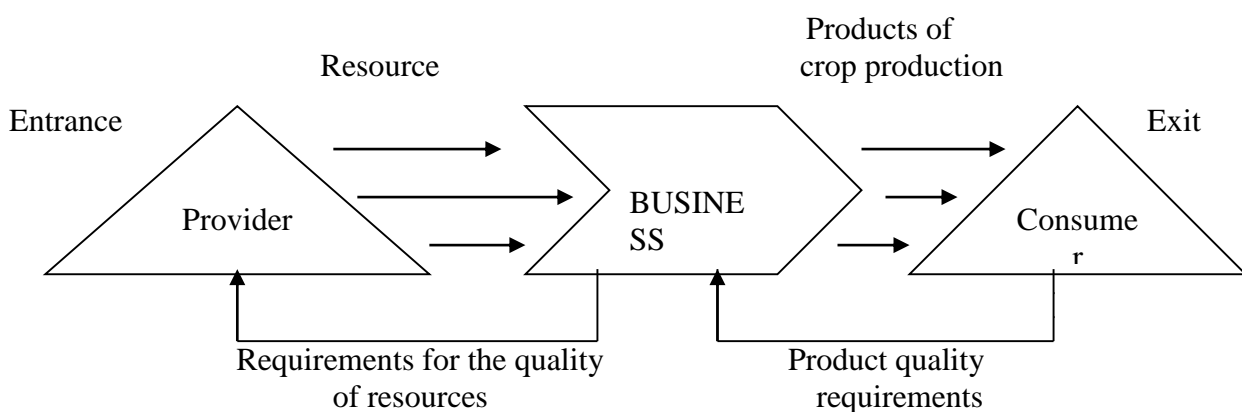


Fig. 1. Flowchart of business processes in plant production

Source: author's construction.

By input we mean input resources (material and technical, energy, labor, information); under the output - finished products of crop production in case the consumer is the own sub-branch of animal husbandry, or profit received in case of its sale. After all, not all produced plant products are marketable. Part of it remains in the farm and is used in further production (for example, for seeds, fodder, etc.). This determines the difference between the business processes of agricultural enterprises and the business processes of other branches of the economy. It is clear that the costs necessary for the implementation of such business processes depend not only on the quantity and quality of the resources involved, but also on the operations that need to be performed in a certain period of time.

The functional model of the enterprise contains many business processes, each of which plays a specific role in the general mechanism of its functioning. In any organization, there are both main and auxiliary processes. Core processes are processes of current activity, the result of which is the created value for both external and internal consumers. Auxiliary processes ensure the existence of primary processes.

Today, the most successful organizational structure is considered to be the one that corresponds to the business processes of the enterprise. The formation of this approach was influenced by the value chain theory of M. Porter (1985). According to this theory, there are nine main types of activities in any organization (five of them belong to the main activity, and four to the auxiliary). Types of main activities are: supply and logistics, production, deliveries, marketing and sales, service. Types of auxiliary activities include: production infrastructure, personnel management, technology development, procurement.

The described groupings of business processes concern, as a rule, industrial enterprises. There is no approach to the decomposition of economic processes (business processes) in agriculture, in particular in crop production. In order to increase the possibility of conducting analysis, evaluation and making proposals for improving the company's activities and optimizing business processes, they need to be structured. For this purpose, we propose to combine the business processes of crop production into three groups, each of which is characterized by its own characteristics.

The main business processes include the production and processing of own agricultural products and are aimed at making a profit. Auxiliary and service business processes support the functioning of the main ones, creating the infrastructure for their effective execution.

During the formation of the list, the goal was not to highlight all possible business processes, operations and procedures in crop production, but only to display typical ones. Moreover, it is obvious that each enterprise itself (depending on the purpose, conditions of operation and types of activity) singles out such business

processes that correspond to the reality and the assigned tasks. However, the proposed list makes it possible to connect business processes with the use of factors of production, i.e. material factor (means of production, which are embodied in the mass of materialized labor used – tools and objects of work), personal factor (use of labor in the production process – employee abilities to labor) and the natural factor – land. That is, it is about the resources that are consumed and the resources that are used. Then the costs associated with the funds invested in the acquisition and use of these resources can be separated as business process costs.

Thus, when singling out and studying business processes that are directly or indirectly related to the production of plant products, it is necessary to take into account their close relationship with the company's resources. The competitiveness of agricultural enterprises is determined by the rational organization of business processes, and therefore, the rational use of resources. Therefore, we will focus our further research on the costs of business processes in crop production.

The analysis of the research work on the topic of the research and the own vision of the problem allows us to interpret the costs of business processes in crop production as a valuable expression of material, labor, energy, information and natural flows that are used in the enterprise and under the action of certain processes are transformed into value for external and internal consumers

In order to more fully reveal the essence of costs of business processes in crop production, it is advisable to develop their classification, which is an important aspect of the study.

In our opinion, it is advisable to group the costs of business processes in crop production depending on the types of business processes themselves. Taking into account the criterion of participation in the process of value creation, it is advisable to divide the costs of business processes into costs that are directly related to the creation of value (generate value) and costs that indirectly affect the creation of value (arising in the process of supporting the main business processes). The classification of costs of business processes in crop production is presented in Fig. 2.

To the costs that generate value, increasing the profitability of the enterprise, we include the costs of the main business processes directly related to the production or processing of plant products. Costs that indirectly affect value creation include the costs of supporting and servicing business processes.

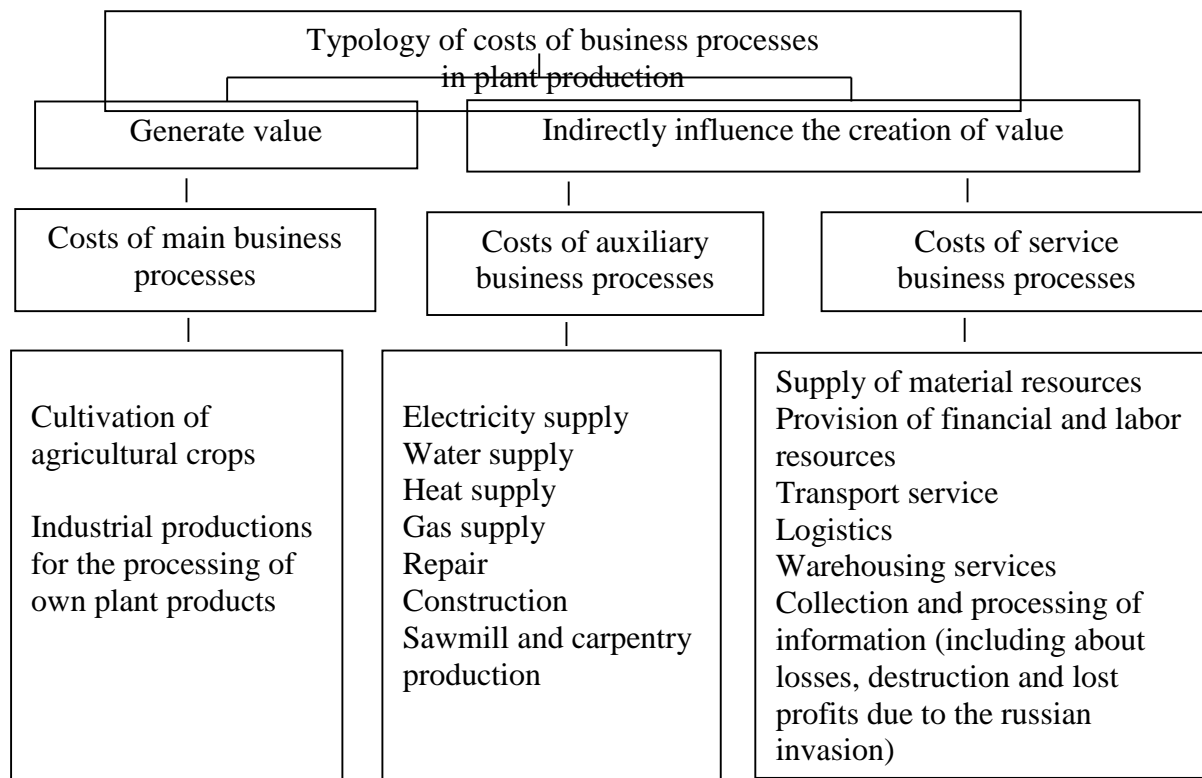


Fig. 2. Typology of costs of business processes in plant production

*Source:* author's construction.

In fig. 2 is not a complete list of all possible types of costs of business processes in crop production, but only the most significant ones. However, the proposed grouping criterion makes it possible to increase the efficiency of building a system for cost management of business processes at agricultural enterprises.

Our research revealed the dominance of structural and functional management models in agricultural enterprises. They are aimed at distinguishing functional areas, as a result of which the organizational structure is formed in accordance with the performance of traditional tasks and functions. The structural-functional model, which came down to us from the time of Adam Smith and the first manufactories, has not lost its relevance to this day. However, the model contains certain shortcomings. Most enterprises are built on the principles of a vertical hierarchy, which does not facilitate the adoption of informed decisions due to delay, distortion or loss of part of the information.

In the articles of M. Hammer and D. Ciampi (1993) on reengineering and process management, the following shortcomings of traditional management methods are given:



- lack of reference point for the final result;
- inability to quickly respond to changes;
- non-compliance with the client-oriented approach;
- high transaction costs.

In contrast to structural-functional management, process management is based on the principles of implementing the strategic idea of the enterprise through the construction and optimization of business processes that reflect the essential content of the business and are focused on creating added value for both external and internal customers (Verba, 2008).

Therefore, the process-oriented format of the organization of the enterprise is based on a different methodology. The main methodological basis of building process management is orientation to the result, which is measured through added value to external customers. The principle of customer-oriented business requires measuring the efficiency of the enterprise through the ratio of the added value received by customers with the resources used to create it (Hammer & Champy, 1993).

The system of process-oriented management should be focused on flexibility and adaptability to adapt to changes in the environment or approaches to performing tasks. When new production or management technologies are adopted at the enterprise (as a result of which new processes are introduced and others are discontinued), when a change in the composition and structure of the assortment and production volumes causes a shift in the priority and cost-intensive operations, when the client portfolio and order structure undergo significant changes, i.e. when the basic initial parameters of the process-oriented cost management system are modified, it must be immediately modernized (Danyliuk, 2002).

However, as noted by A. Verba (2008), "the implementation of process planning can only take place under the conditions of agreement on the mission, basic values, vision of the enterprise, strategy, a balanced system of indicators, strategic initiatives and personal goals of the management and employees of the enterprise" (Verba, 2008, p.135).

Functioning in the cost management system of business processes in crop production of the organizational structure development subsystem is related to the definition of cost centers and responsibility centers. In American practice, this approach made it possible to move from passive cost accounting systems to active methods of their operational management. This had a positive effect on the efficiency of the financial and economic activities of enterprises that used this method. Therefore, it was widely distributed not only in the USA, but also in European countries. As a result, not only the methodology of cost accounting, but also the organization of their management was significantly improved.

Preferring this approach, M. Korrenbauer and R. Müllerdorf (1996) single out the following requirements for determining costs by their place of occurrence:

- each place of occurrence of costs should have its own sphere of responsibility. Each division should be headed by a manager who is responsible for the costs that arise. The scope of responsibility of cost center managers may include several places of their occurrence;

- the causes that lead to the occurrence of costs must be quantifiable. For each place of occurrence of costs, it is necessary to set the units of measurement to which the costs fall (machine-hour, time rate, etc.). Such units can be the basis for cost allocation. They are necessary to ensure the accuracy of accounting and prevent errors during control;

- locations of costs must be identified in order to simplify the distribution and accounting of various types of costs as much as possible.

Cost centers and responsibility centers are different concepts, although some authors do not see the difference between them.

In our opinion, cost centers are related to product costing, and responsibility centers are related to cost management. Sometimes they may overlap, but in many cases cost centers are smaller units relative to responsibility centers.

A responsibility center is a segment of the organization in which both expenses and income received or the process of its investment are controlled. Moreover, the head of the center is responsible for the process of forming these indicators.

The creation of cost centers is a means of their detailing and localization by centers of origin for the purpose of organizing current control and reliable calculation of production costs. Cost management of business processes in crop production should be expressed in the implementation of centralized rationing and cost planning by types, cost centers and responsibility centers; conducting operational accounting, control, analysis and regulation of their level by cost centers and responsibility centers; generalization of the received data regarding the actual costs of business processes; comparison of actual costs with planned costs and analysis of deviations; determining the possibility of reducing costs without reducing the quality of products; stimulating the interest of production units in reducing costs.

As for determining the cost centers of business processes in crop production, it is advisable, in our opinion, to use their hierarchical structure in practice (Fig. 3).

At the same time, for each cost center (business process – first-order production allocation – second-order production allocation – type of operation – procedure), costs are grouped by costing articles. Information grouped in this way allows you to track costs separately for each procedure, operation and business process, and is also the basis for calculating the entire product and its individual unit.

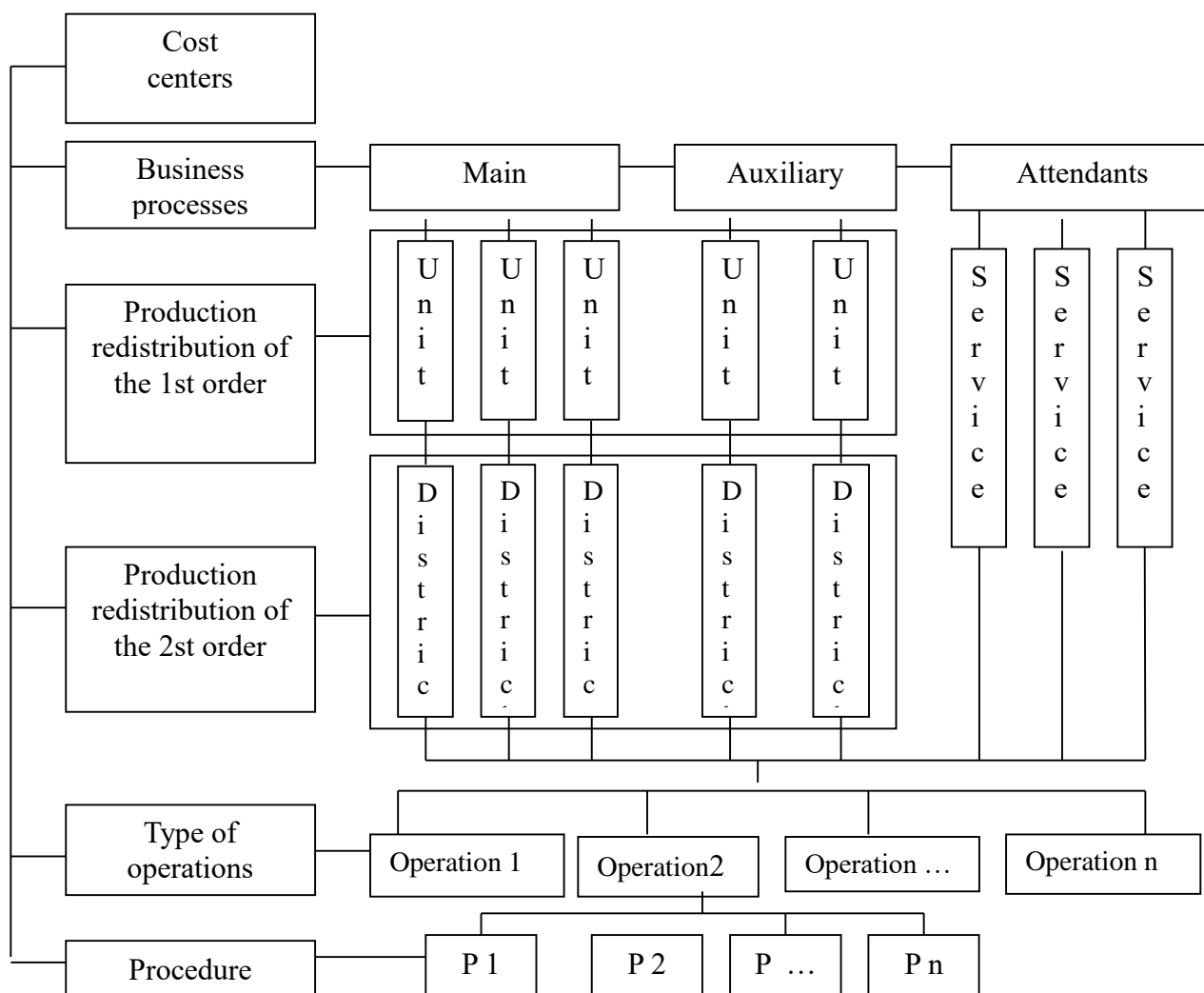


Fig. 3. Hierarchical structure of cost centers of business processes in crop production

Source: author's construction.

For the organization of cost centers and responsibility centers at the enterprise, it is necessary to take into account the problems that the heads of such centers and the enterprise in general may face. One of the most common is the problem of making unfounded and incompetent decisions, when the interests of the unit become higher than the interests of the entire enterprise, which occurs in the event of a mismatch between the goals of the enterprise as a whole and a separate structural unit, or the lack of information by which the heads of structural units can determine the impact of their activities on others constituent enterprises.

The generalizing nature of the cost category, its integrality, the unification in the cost indicators of information that characterizes the use of different, often incomparable resources, and in connection with this, the variety of situations and

directions of application of the results of the cost analysis requires a clearly defined, specific, but and a universal method of their analysis is sufficient. However, there is no methodology for analyzing the costs of business processes in crop production, which would make it possible to navigate easily enough in a huge number of business processes, indicators, schemes and methods of cost formation in domestic practice. This problem is considered mainly by foreign authors (Shim & Siegel, 1996; Druri, 2007). However, they also do not directly consider the issue of cost effectiveness. And if the domestic classical analysis is in most cases comprehensive, then in the Western one much attention is paid to solving individual management issues and making forecasts.

From the standpoint of the process-oriented approach, which is recognized as a priority general scientific methodological concept in modern scientific research, the economic unit is described by the concept of a complex dynamic controlled system subordinated to the achievement of a certain goal. This makes it possible to apply the principles of a process-oriented approach to the formation of methodological foundations for the analysis of costs of business processes in agricultural enterprises.

The choice of the object of analysis also requires clarification of the composition of costs and the scheme of their formation. Here it is appropriate to consider costs from the point of view of the set goal of the analysis. For a general assessment of the effectiveness of the use of costs, it is necessary to enter all costs according to the types of activities of the enterprise, as well as the final result of its activities, into the composition of the object of analysis. In our opinion, the study of the costs of business processes in crop production involves the parallel application of two main directions: the analysis of changes in the general level of costs and the analysis of factors influencing changes in the volume of production (Fig. 4).

Having formed an information base for the analysis of costs of business processes in crop production, it is necessary to choose methods of information processing that best meet the purpose of the analysis. From the known arsenal of analysis tools, traditional methods of information processing, methods of deterministic and stochastic factor analysis, and methods of optimizing indicators are most often used. However, it can be stated that each method is used only in individual cases, to solve a narrow problem. In our opinion, several methods should be combined to improve the analysis procedure. In particular, the use of matrix methods and models together with elimination methods will provide a balance that will reflect the real and potential capabilities of the enterprise.

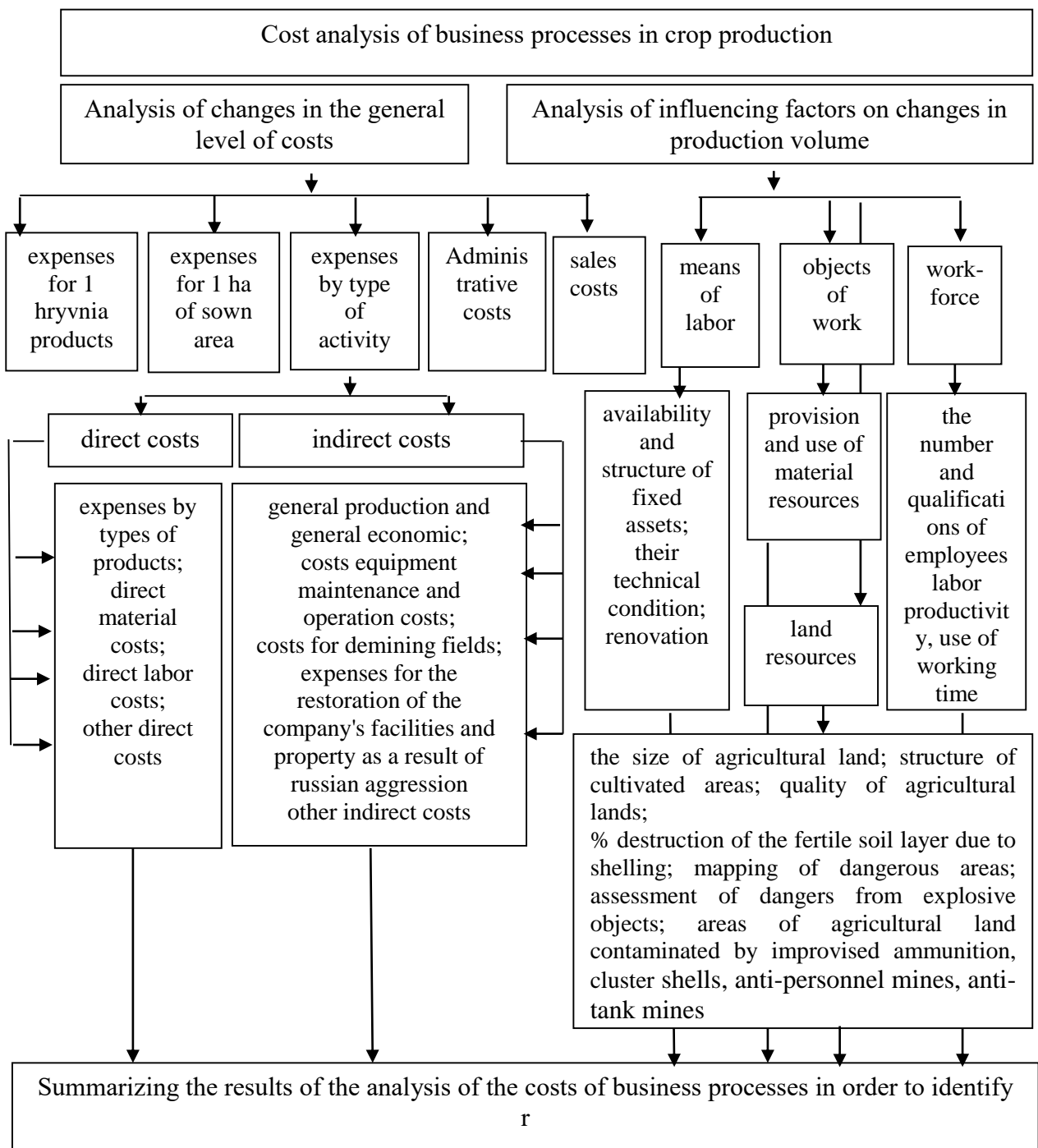


Fig. 4. Format of components for cost analysis of business processes in crop production

Source: author's construction.

The need for an in-depth study of the costs of business processes arises when the purpose of the analysis is to determine the expediency of their implementation. If the goal of the research is to identify the influence of factors on the selected research

object, then at this stage it is necessary to determine the influence of which group of factors (external or internal) will be studied. On this basis, a system of factors taken as basic should be formed in the factor model of cost research.

In general, the system of indicators necessary for the analysis of the costs of business processes should be an information system that characterizes the costs of business processes: a system of methods used for their calculation, forms of documents containing the indicators themselves or providing raw data for their calculation, the periodicity of accumulation, analysis methodology and comparison base. "The main goal of economic analysis in the field of costs is to model the optimal relationship between the consumer value (net income) from the object of costs and the costs of its formation" (Tsal-Tsalko, 2002, p. 317).

Therefore, the conducted research established that the development of an agricultural enterprise is determined by a combination of various resources, organized and coordinated for the purpose of producing agricultural products. That is, the activity of the enterprise covers all the processes necessary for the production of products and their sale to the consumer. Optimizing business processes and, as a result, reducing costs is the basis for the efficient functioning of the enterprise. That is why the development of the process of cost management of business processes should be directed to a process-oriented approach. The application of its main principles in practice will ensure planning and economic services the choice of the most effective and least expensive business processes, which will increase the effectiveness of the functioning of agricultural enterprises.

The application in practice of methodological approaches to the analysis of costs of business processes in crop production, which involves the parallel use of its two main directions (analysis of changes in the general level of costs and analysis of factors influencing changes in the volume of production) will enable managers of economic services to receive operational information about costs and factors impact on the cost of products at each stage of the business process, and managers of different levels of management – to make rational management decisions.

The introduction of cost formation business processes at domestic enterprises involves forecasting and determining the need for all types of material resources, optimization of production stocks, the selection of a promising supplier in view of the dynamics of commodity markets, makes it possible to improve the quality of the selection of acreage for appropriate crops, to strengthen the competitiveness of agricultural enterprises on the world market, contributes to the growth of profit, that is, the effectiveness of activities. To achieve the effect of implementing management of these costs, it is necessary to optimize them at all stages of production.

Optimization will contribute to the growth of the financial results of the agricultural enterprise.

An important aspect of effective cost management of business processes in crop production is information support. In management activities, information is interpreted as a set of information necessary for active influence on the system that is managed for the purpose of its optimization.

Usually, when we talk about the cost management system, we mean a system for supporting management decisions based on certain information technologies. The advantages of information technologies in enterprise management are obvious. First of all, this is a total accounting of all resources and cost objects of the enterprise, construction and clarification of budgets, management accounting and control in real time, the possibility of modeling new development scenarios for changes in external and internal factors in order to find options that most accurately correspond to the tasks.

The system of cost management of business processes in crop production determines the need for appropriate information support. Since the management decision-making process is the main consumer of economic information, it is most sensitive to its shortcomings, therefore the information must be complete, accessible and reliable.

However, in most agricultural enterprises, due to the lack of established information systems, the analysis of activity is carried out late, when the main financial indicators are formed and it is impossible to influence them, and the efficiency of the work of individual structural units is often not analyzed at all. As a result, the accounting system generally does not reflect those results that are difficult to accurately measure, even if they are important from the management point of view.

Thus, there is a need to create a unified information system at the enterprise. We understand the information system as an interconnected set of means, methods and personnel that accumulate, store, process and issue information in order to achieve the set goals.

The goal of any economic system in market conditions is to minimize costs and increase the market value of the enterprise. However, the goal of the economic system is not always so obvious and so easily transformed into a list of criteria. In particular, the purpose of the information system, which is a component of the economic system, is to increase the efficiency of management decisions made.

Information flows in the cost management system of business processes in crop production will have the form shown in Fig. 5.

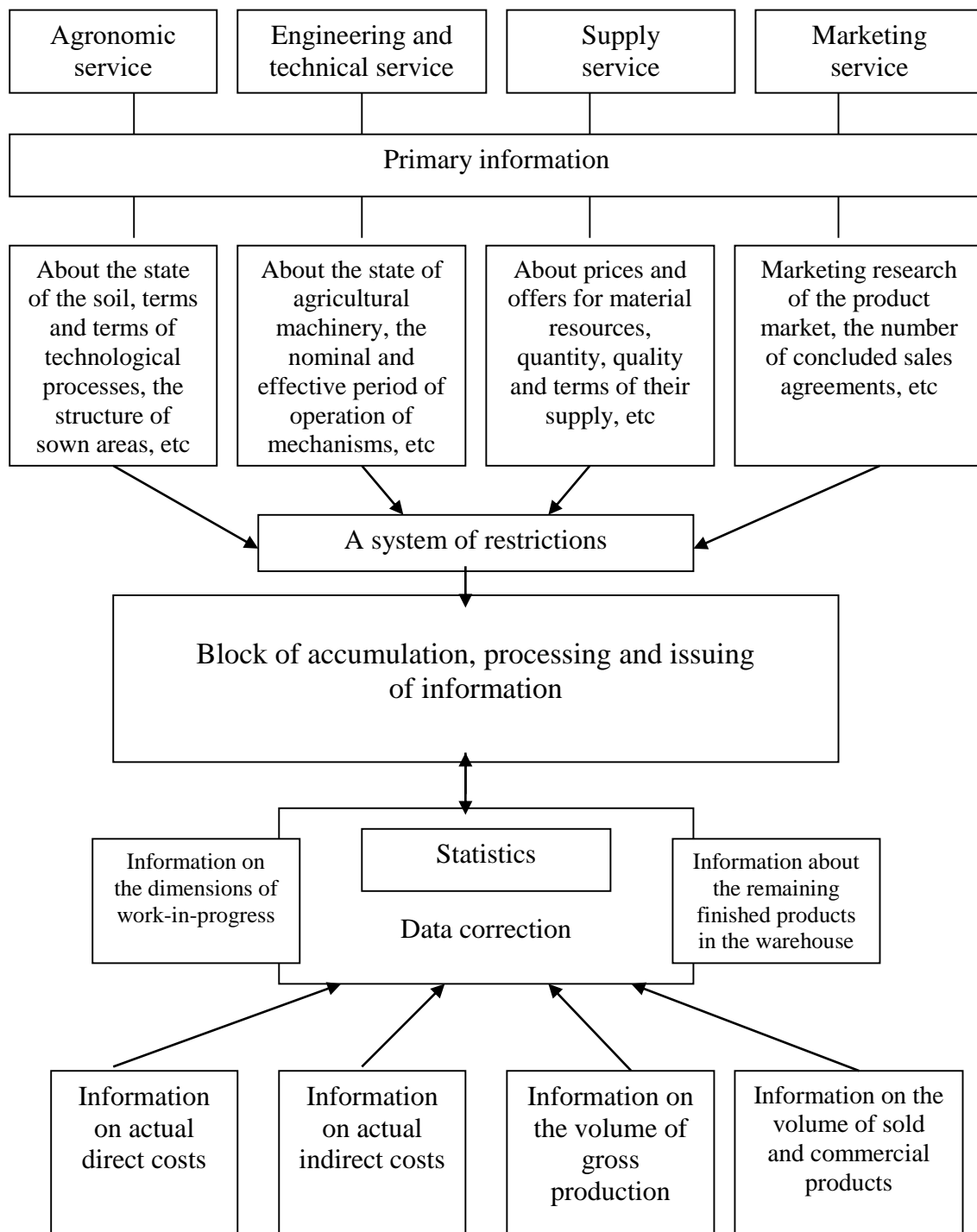


Fig. 5. Principal scheme of information flows in the model of cost management of business processes in crop production

Source: author's construction.

The physical movement of information from one employee of the enterprise to another or from one division to another, which makes it possible to implement a decision, that is, to carry out a process, is called an information flow. It is no secret that information flows are far from perfect: there is often duplication of information; it may



not reach the addressee; after receiving the information, there is a need to clarify it. This encourages the improvement of the system of information flows, the development of an algorithm for the passage of documents and the automation of information transmission.

Under a clearly established organizational chart of the functional operation of the information system, each performer performs the actions determined for him, receiving information in the amount necessary and sufficient for the performance of official duties. As a result of the work of all users of the system, the company's database is filled with information about the progress of specific business operations that belong to different areas of activity.

An important aspect in the cost management system of business processes in crop production is the analysis of information flows. Its purpose is to identify places where information is duplicated, its lack or excess. Also, in the process of studying information connections and information flows at the enterprise, control over the expediency of business processes and the costs arising from this is strengthened.

There are many methods of analyzing information flows, but the most common and, in our opinion, the most effective method is the method of compiling graphs of information flows. In order to build such schedules, the enterprise can independently establish the rules for their compilation and develop conventional designations of individual elements.

Each information flow is a single movement of information.

The following signs of information flow are distinguished:

- a document (on which the information is physically stored);
- issues (to which sphere of activity of the enterprise does the information belong: to purchases, sales of products, receipt of consolidated costs, planning, etc.)
- executor (person who transmits information);
- periodicity (frequency of information transmission).

The purpose of creating a single information base at the enterprise is to expand the capabilities of structural divisions in making management decisions regarding the formation of costs of business processes and evaluating their effectiveness. Achieving the set goal involves the implementation of a wide range of tasks, among which the main ones are: development and implementation of an information management system; ensuring the development of personnel potential in the development, implementation and use of information to ensure the efficiency of business processes; mobilization of material and technological resources of the enterprise; improvement of analytical means of accumulating data and carrying out supporting scientific research, which will allow agricultural enterprises to reach a new level of management.

Orientation to business processes is the basis of modern enterprise management. In market economic conditions, it is no longer enough to simply produce the required

amount of products, it is important to achieve profitability and competitiveness of production. New business conditions require a new approach to ensuring the effective operation of domestic agricultural enterprises. Organizational issues of cost management of business processes are gaining special importance. The imperfection of organizational management structures leads to a decrease in the efficiency of farms in the use of resources, prevents the diversification of certain types of production, does not ensure profitability, and is the cause of the unstable financial condition of most agricultural enterprises.

From such positions, the need to research the cost management structures of business processes in crop production stands out. The theoretical foundations of scientific approaches to the construction of organizational management structures became the basis for the construction of the cost management structure of business processes in crop production.

The cost management structure of business processes in crop production depends on the production and organizational structure of the agricultural enterprise. The production structure of the enterprise is a set of main, auxiliary and service divisions of the enterprise, their relationship, order and forms of specialization, concentration of cooperation and combination. The production structure of the enterprise depends on the type, size of the enterprise, complexity of technological processes, etc. The organizational structure, as a derivative of the production structure, significantly affects it. It ensures the coherence of individual types of enterprise activities and efforts to fulfill the main tasks and achieve goals. Improvement of the current organizational structure of the enterprise, in turn, improves the production structure, at the same time reducing costs for business processes.

Effective management of the costs of business processes can be achieved under the condition of complex interaction on the part of a significant number of services, departments, units in terms of what unites a specific object managed by them. Such a system should provide enterprise managers with information that will allow them to make decisions about the expediency of implementing certain business processes and the efficiency of using resources.

In order to manage the costs of business processes in crop production, it is advisable, in our opinion, to implement integrated economic management centers, separating production sites, teams and units, as well as the most important auxiliary and service units, depending on the specialization of the enterprise (Fig.6).

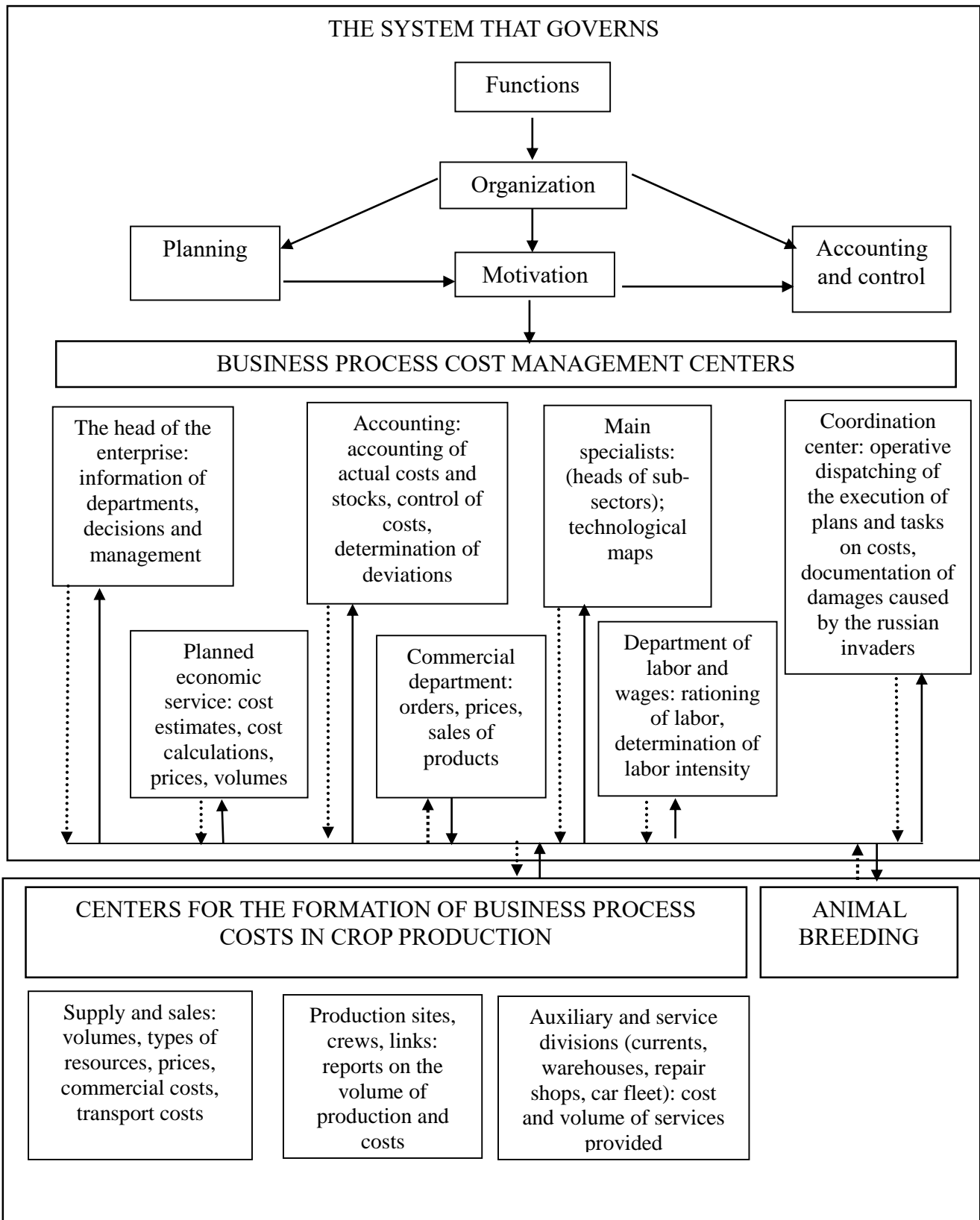


Fig. 6. Organization of cost management of business processes in crop production

Source: author's construction.

In the conditions of a process-oriented approach, the organization of the cost management structure of business processes should take into account the following points: development of a system of goals is necessary for cost management of business processes; establishment of management levels related to the use of resources (material, labor, information, etc.) in business processes; in cost management, it is necessary to agree on specific functional duties for all structural units.

At the initial stage of implementation of the process-oriented cost management structure of business processes in crop production, it is necessary to organize such a cost management system that clearly delimits the responsibility between different departments for the level of individual costs, and the process of managing them should be carried out by cost centers.

So, summing up the above, it should be noted that the development of an agricultural enterprise is determined by a combination of various resources, organized and coordinated for the purpose of production of plant and animal products. That is, the activity of the enterprise covers all the processes necessary for the production of products and their sale to the consumer. Cost reduction is the basis for the efficient functioning of the enterprise. The advantages of using process-oriented cost management of agro-enterprises are the distribution of responsibilities between process executors, shortening of information transfer terms, increasing the efficiency and adaptability of the enterprise's activities. The application of the main principles of the process-oriented approach in practice will provide planning and economic services with the choice of the most effective, least costly and safe business processes, which will increase the effectiveness of the functioning of agricultural enterprises.

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## 2.2. FORMATION OF THE MANAGEMENT SYSTEM FOR WEAK SIGNALS IN HEALTHCARE INSTITUTIONS

The development of medicine is one of the main signs of the sustainable development of the country. Other areas of activity cannot fully develop if the level of the healthcare system is low. Without an effective fight against epidemics and establishing protection of the population from diseases, people will not be interested in secondary needs.

In the modern social and economic realities of Ukraine's development, the healthcare industry is considered one of the priority areas of reform. The ideology of providing medical care, financial, economic, and market mechanisms in the field of health care is changing. It is also necessary to introduce a new management system for healthcare facilities, which is designed to anticipate changes that significantly affect the functioning of medical facilities. That is why it is worth paying special attention to the use of control by weak signals.

The ideology of building a management model based on weak signals is based on the assumption that any adverse phenomena or growth prospects do not occur suddenly, but are determined by the appearance of harbinger signals or «weak signals», according to the terminology of I. Ansoff (Romanyuk, 2009, Ansoff, 1989).

I. Ansoff distinguishes two types of management: strategic and operational. Strategic management activities are related to setting the organization's goals and objectives and maintaining productive relationships between the organization and its business environment. This allows the organization to achieve its goals, meet its internal capabilities, and helps to remain resistant to external challenges (Romanyuk, 2009).

In general, strategic management is aimed at creating competitive advantages for the organization and establishing an effective strategic position that will ensure the future viability of the organization in changing conditions.

One of the most productive currently is the classification of strategies depending on the chosen object of strategic management. A corporate strategy is distinguished - for the organization in general; business or competitive strategy – for one unit of the organization; functional strategy - the strategy of functional divisions.

The purpose of operational management is to use the already existing strategic position of the organization to achieve specific tactical goals.

In the organization, managers who deal with strategy are engaged in the search for potential ways of increasing its profitability, and managers who deal with current operations are responsible for turning potential into real profit (Zarichna, 2014).

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Strategic management is a process by which managers carry out long-term management of the organization, determine specific activity goals, develop strategies to achieve these goals, take into account all external and internal conditions, and ensure the implementation of the developed, constantly developing, and changing (Labunska, Sobakar, 2018).

Consider the concept of «weak signals» in Table 1.

Table 1

Study of the concept of «weak signals»*	
Author	Definition of the concept
I. Ansoff (Ansoff, 1989)	Weak signals are factors that determine the need to find effective mechanisms for adapting the enterprise to the conditions of an unstable environment.
MA. Dyadyuk (Dyadyuk, 2015)	Weak signals are incomplete information about possible changes in the external environment, associated with early and inaccurate signs of the onset of important events
E. Kopytko (Kopitko, 2014)	Weak signals are the initial signs of future changes in the internal and/or external environment, which indicate the likely occurrence and sources of negative consequences for the organization.
O.H. Melnyk (Melnik, 2014)	Weak signals are information messages of a quantitative and qualitative nature that indicate initial changes in the development trends of potential phenomena or the emergence of new trends in the environment of the organization's functioning.
O.E. Kuzmin (Kuzmin, 2013)	Weak signals are incomplete in content, unclear and understandable messages, and data that require adequate recognition, processing, and interpretation.
T.M. Pakhomov, V.V. Moshko (Pahomova, 2011)	Weak signals are initial information about early signs of imbalance in the management system of the organization. If such changes are not taken into account and preventive measures are not taken, the organization will become bankrupt with a high degree of probability.
O.V. Stelmashenko (Stelmashenko, 2011)	Weak signals are early and imprecise signs of the onset of important events, which over time become more reliable and turn into strong signals.

\*Compiled by the author

The unpredictability, instability and rapid change of business conditions, as the administration's incomplete understanding of internal problems in the institution, determine the greatest interest in assessing the factors of the external and internal environment of the organization as one of the stages of strategic management and the need to form a strategy in the actual conditions of the country's market economy.

Therefore, weak signals are harbingers of problems in the organization, the accurate analysis of which can change the course of events.

Many scientists have studied the features, essence and advantages of «weak signal management». We presented these results in Table 2.

Study of the essence of weak signal management\*

Author	Definition of the concept of «weak signal control»	Advantages of weak signal control
I.M. Biletska (Bilecka, 2008)	Management, under which the firm must be able to sense changes that have not yet occurred, but are in the nascent stage.	Ahead of competitors, quick response to changes in market conditions.
MA. Dyadyuk (Dyadyuk, 2015)	Weak signal management is a powerful means of competitive struggle.	Early notification of changes in the external environment; timely response to difficult-to-predict events; taking action in the early stages of threats or new opportunities.
E. Kopytko (Kopitko, 2014)	Management of weak signals is a type of strategic management.	Getting more time to make management decisions; protecting against the impact of changes.
A.M. Shtangret (Shtangret, 2007).	Anticipatory management is based on monitoring the external and internal environment, forecasting changes, and developing organizational flexibility in the decision-making process.	Taking into account the impact of environmental factors on the organization's activities; determining the need for certain actions even before the situation arises, makes it possible to react to difficult-to-predict events.

\*Compiled by the author

The most significant areas of manifestation of management by «weak signals» in the internal environment of healthcare institutions can be, for example, in the financial sphere – indicators of solvency, liquidity, profitability, and cost of credit obligations. In the field of management, weak signals about changes can be obtained from the analysis of staff turnover, the organization's costs for staff training, changes in personnel potential, labor productivity, and salary levels by category.

The external environment manifests itself as an influence on healthcare institutions through the political sphere – stability, the political orientation of the state, international relations with other countries; technological sphere - state policy in the field of science and scientific and technical activity, rates of development of progressive methods of providing medical services, automation of processes in medical institutions, new discoveries; social sphere - population size, the standard of living; economic sphere – inflation, currency relations, income, unemployment, export-import policy.

All healthcare institutions face new challenges every day, which require an immediate response from the manager, especially solving problems in non-standard situations. In such cases, strategic planning helps. After one achieved a goal, it is necessary to aim for the next achievement.

It is especially worth paying attention to strategic management in the context of healthcare because it is during the pandemic that it is necessary to ensure a high level of flexibility of thinking, create conditions and ensure early detection of problems and their prevention. That is why we emphasize the need to use the weak signal control model.



The weak signal control model will be effective if an effective system of information collection and processing is developed. Then we will be able to predict possible changes in the external and internal environments of the healthcare institution. In order to predict the consequences of such changes, it is necessary to constantly collect and analyze information about the trends and dynamics of changes.

In order to correctly and timely respond to external and internal signals, using weak signal management, managers must monitor a large number of indicators that are indicators of the organization's performance. Therefore, it is important to identify the most significant indicators, develop a methodology for determining the impact of changes, and form a mechanism for neutralizing possible threats.

Therefore, weak signals can be defined as quantitative and qualitative indicators that inform about the likely occurrence of events and likely sources of negative consequences or potential opportunities for a healthcare facility. Weak signal management is a purposeful activity of a medical institution related to a quick response to weak signals, applying preventive measures to prevent negative consequences, and using potential opportunities most effectively.

Dynamic and unexpected changes in all socio-economic spheres became an impetus for the search for new management models or revision of already developed ones. In particular, in conditions of uncertainty, the weak signal control model (according to I. Ansoff) deserves special attention (Ansoff, 1989).

The concept of building a management model based on weak signals is based on the assumption that any adverse phenomena or the prospect of the emergence of opportunities do not occur suddenly, but are caused by the appearance of harbinger signals or «weak signals», according to the terminology of I. Ansoff (Ansoff, 1989, Romanyuk, 2009, Semenyuk, 2017).

The author of the concept and its supporters understand by «weak signals» are early and not entirely accurate signs of the onset of important events, which over time become more reliable and turn into strong signals. This model of enterprise management is oriented towards work in the languages of the instability of the external environment. Such management involves the identification of additional opportunities, the creation of a mechanism for adaptability to changes and conditions of flexibility, and an increase in the amount of time for the adoption and implementation of preventive measures against probable threats (Kuzmin, Adamiv, 2013).

According to the Ansoff's method, each factor is first evaluated qualitatively according to each characteristic (habitually of events, rate of change, and predictability), and then, based on this matrix, each qualitative characteristic is converted into points (Table 3).

For each of the levels of instability, I. Ansoff proposed a suitable type of strategic management. The higher the level of instability, the more difficult the management and the more effort is needed to transition to a new type of management. A higher level of volatility implies less time for the firm to react.

Table 3

Matrix for assessing the level of instability of the external environment  
(according to the Ansoff's method)\*

Characteristic	Stages				
	Stability	Reaction on changes	Foresight	Research	Creativity
Familiarity of the event	Familiar		Within the extrapolation of experience	Unexpected, those with analogies	Unexpected and completely new
Pace of change	Slower than an organizational response		Corresponds to organizational response		Faster than the organizational response
Predictability	By analogy with the past		Extrapolation	Anticipated significant problems and new opportunities	Partial predictability from weak signals and unpredictable changes
Scale instability	1	2	3	4	5

\*Added by the author based on (Ansoff, 1989)

I. Ansoff distinguishes the following types of strategic management, which are used depending on the degree of instability of the external environment (Romanyuk, 2009):

- management based on the extrapolation of trends (long-term planning), which is used in conditions of a relatively low degree of instability (the instability rating is 2,5–3,0);
- management based on the prediction of changes (strategic planning, selection of strategic positions), applied at medium values of the degree of instability (grade – 3,0–3,5);
- management based on flexible expert decisions (ranking of strategic tasks; management according to weak signals; management in conditions of strategic surprises), which is used in conditions of significant instability of the external environment (grade above 3,5)

In our opinion, I. Ansoff's method does not describe the external environment as a whole, but only takes into account certain of its factors.

Each healthcare institution functions in a certain external environment and can exist only with constant interaction with this environment. Limitation of resources affects not only the potential of the organization but may also lead to negative consequences for its activity in the future. The external environment must be taken into account when planning the work of a healthcare facility.

The degree of instability of the external environment should be evaluated to clearly understand what kind of changes the organization expects in the future and whether the applied changes will be effective when choosing a strategy.

In order to predict or predict the consequences of changes in the external environment for the enterprise, it is necessary to constantly collect and analyze information about favorable and unfavorable trends, and the dynamics of changes in certain parameters.

Monitoring of the external environment is carried out using the following methods: STEP analysis, STEEPLE analysis, SWOT analysis, analysis of M. Porter's five competitive forces, benchmarking, PIMS analysis, scenario analysis, and early warning system.

In Table 4, we proposed the approximate target parameters for evaluating weak signals of changes in the conditions of the internal environment of healthcare institutions.

Table 4

Approximate target parameters for evaluating weak signals of changes in the conditions of the internal environment of healthcare institutions\*

Spheres of manifestation	Target evaluation parameters
Internal environment	
Financial	Indicators of financial autonomy, liquidity, solvency, business activity, profitability, cost of credit resources, share price, refusal of credit institutions to raise funds, non-fulfillment of financial obligations
Personnel	Personnel turnover, personnel training costs, organizational structure, changes in the personnel potential of the enterprise (level of education, qualifications, work experience), labor productivity, wages by personnel categories, conflict situations, changes in intellectual potential, changes in working conditions
Technical-technological	The average life of fixed assets by type, level of wear and tear of fixed assets, asset availability, technological availability, energy availability of labor
Production	The level of use of corporate resources, the efficiency of the logistics system, the level of diversification of production, the rhythm of production
Innovative	The level of moral wear and tear of human resources, the use of outdated technologies in production and management, the production of products with parameters that are inferior to the parameters of competitors' products
Information	Level of computerization, assessment of electronic document flow
Environmental	Harmful emissions into the environment, the probability of man-made accidents, the release of products containing harmful substances
Environment	
Force majeure circumstances	

\* Added by the author based on (Kopitko, 2014, Bezginova, 2014, Mylko, 2021)

The financial component is described by the indicators presented below.

1. The profitability of the enterprise (RP) is calculated as the ratio of the amount of net profit to the amount of net income from the sale of products, services, and works.

2. The ratio of total liquidity is calculated as the ratio of current assets to current liabilities of the enterprise.

3. The solvency ratio is determined by the ratio of equity to the total liabilities of the enterprise.

Personnel composition is described by the indicators presented below.

1. The staff turnover rate is defined as the ratio of the number of employees who left the organization during a certain period (minus the unavoidably dismissed) to the average registered number of employees for the corresponding period.

2. Labor productivity is the cost efficiency of specific labor, which is determined by the number of products produced per unit of working time, or the amount of time spent on a unit of production. The indicator is defined as the ratio of the volume of produced products (services) to the costs of only one of the factors of production - live labor, which can be measured per hour, day, quarter, or year.

3. The specific weight of employees (doctors by category) who have undergone advanced training in the total number of personnel.

The technical and technological component is described by the indicators presented below.

1. The level of depreciation of fixed assets determines that part of them that is written off for production costs, is calculated and calculated as the amount of depreciation of fixed assets to the original cost of fixed assets at the beginning of the period.

2. Capital adequacy is defined as the ratio of the average annual cost of fixed assets to the number of employees.

3. Technological equipment is defined as the ratio of the active part of the average annual cost of fixed assets to the number of employees.

4. The energy availability of labor characterize the supply of living labor with electricity, or the level of consumption in the production of electricity or electrical power per unit of working time.

The innovative component involves the calculation and analysis of the following indicators.

1. The level of moral wear and tear is defined as the amount of premature depreciation of fixed asset objects (in particular, diagnostic equipment, means for physiotherapeutic procedures, and equipment of hospital wards) under the influence of scientific and technical progress long before their complete physical wear and tear.

2. The share of the cost of outdated technologies in the management and provision of medical services in the total cost of fixed assets.

The information component should be based on criteria that can determine the level of computerization, the level of staff access to personal computers, and the level of mastery of skills to use professional software products.

Most often, to determine weak signals, the method of prospective diagnosis of weak signals of potential phenomena in the operating environment of the enterprise is used, which is aimed at recognizing, processing, and organizing weak signals,

interpreting their further development to specific phenomena, and probabilistic assessment of the impact of identified events based on weak signals on the efficiency of the operation of the enterprise.

Based on the study of literary sources, it is possible to use the method of prospective diagnosis of weak signals of potential phenomena by types of activities of the health care institution. The method is used in the following stages (Romanyuk, 2009, Tarnavska, 2003, Zarichna, 2014, Shershnova, 2001, Labunska, 2018, Ansoff, 1989, Dyadyuk, 2015, Kopitko, 2014, Melnik, 2014, Kuzmin, 2013, Pahomova, 2011).

1. Monitoring of the operating environment to identify signals characterized by probabilistic and incomplete content regarding the possible occurrence of potential phenomena in the operating environment of the enterprise. At this stage, the process of comprehensive monitoring of the internal and external environment of the health care facility is implemented to qualitatively recognize weak signals of potential phenomena.

When monitoring the operating environment, it is necessary to take into account that weak signals contain information only about the possibility of potential changes in operating conditions and the source of their occurrence, and therefore, accordingly, require further processing and interpretation to form a complete vision of the future situation (Zarichna, 2014).

2. Determination of the entropy level of the registered signals as a determining parameter of signal strength and priority identification of signals with the highest entropy values as weak signals of potential phenomena.

The results of monitoring the operating environment to determine weak signals of potential phenomena, obtained at the previous stage based on expert judgments and conclusions, may be characterized by a certain level of subjectivity and inaccuracy, and therefore require quantitative justification. For this purpose, it is proposed to determine the level of information entropy for each registered signal as a predictor of the possible occurrence of certain changes in the activity of a healthcare institution.

3. Construction of an event tree for each priority weak signal of potential phenomena in the environment of the health care institution.

3.1. Establishment and substantiation of a weak signal as an initial sign of the emergence of potential phenomena in the environment of the health care institution. Based on the obtained results of the previous stages, a specific weak signal characterized by the highest rating is selected and identified as an initial sign of the probable occurrence of a potential phenomenon in the activity of a healthcare institution. At this stage, it is advisable to carefully investigate and characterize the weak signal according to such features as the source of the weak signal; the presence of analogs of weak signals, and ways of their development in the past periods of operation of the health care institution, competitors, other medical institutions.

3.2. Formation and interpretation of probabilistic trajectories of the development of a weak signal to alternative strong signals, which report the occurrence of potential phenomena in the enterprise's activities, based on the establishment of logical cause-and-effect relationships between events. Applying causation makes it possible to form the logic of the development of events (from weak signals to strong signals) by establishing a relationship between one event that is a cause and another event that is an effect and accordingly follows the first event.

At this stage, based on the characteristics of a weak signal, one should logically and reasonably think through and consistently formulate all alternative options for its development to strong signals that report the emergence of an opportunity or a threat in the environment of the enterprise's functioning. Each transition of the signal from one state to another should be filled with probabilities of the occurrence of relevant events, which will make it possible to perform an idea of the least and most probable phenomena that may occur in the environment of the healthcare institution.

3.3. Determination of all opportunities and threats that may arise from identified signals in the activity of the health care institution. Based on established strong signals that indicate the occurrence of a certain event, all opportunities, threats, or conditions of the healthcare facility are determined. During the construction of the tree of events, it should also be taken into account that under the same weak signal, as a result of its development, phenomena of a positive and negative nature can potentially occur at the same time.

4. Probabilistic assessment of the influence of opportunities and threats based on weak signals on the resulting indicators of the healthcare institution based on simulation modeling using the Monte Carlo method. Since it is quite difficult to accurately determine the specific impact of identified opportunities and threats based on weak signals on the effectiveness of the healthcare facility, in this case, it is advisable to use economic and mathematical methods of a probabilistic nature. The most adequate solution to the problem of assessing the impact of potential phenomena, identified by weak signals of their occurrence, on the performance of the enterprise is the use of the method of statistical tests, or the Monte Carlo method.

Let's consider the features of using the Monte Carlo method to assess the impact of identified opportunities and threats based on weak signals on the effectiveness of the healthcare institution.

4.1. Determination of the objects of influence of the identified opportunities or threats of the operating conditions of the health care institution and the selection of indicators capable of representing the impact of potential phenomena on the efficiency of the selected object.

4.2. Setting the change intervals of the selected indicator as a result of the influence of each potential phenomenon identified by the initial weak signal.

4.3. Choosing the type of probability distribution of a random variable and setting its parameters.

4.4. Simulation modeling of various variants of possible values of a random variable in the Microsoft Excel environment.

4.5. Construction of an interval scale of simulated indicator values as a random variable and determination of the most likely range of changes in the resulting indicator. At this stage, each simulated array of values of a random variable for each potential phenomenon is divided into a specified number of intervals of changes in its values. Next, for each interval, the number of occurrences of the values of the random variable in the corresponding interval is determined using a conditional data filtering operation. On the basis of the obtained results, we choose the interval with the largest number of hits of the values of the random variable, which identifies this interval as the most likely range of changes in the indicator due to the influence of a certain potential phenomenon behind a weak signal.

5. Formation of structured conclusions based on final potential phenomena from the position of reflecting the probability of their prospective occurrence and quantitative impact on the effectiveness of a certain type of enterprise activity. Based on the results of the diagnosis of weak signals, a generalized structured conclusion is formed, which reflects the ordered location of the final potential phenomena identified by the initial weak signal, according to the probability of their occurrence and quantitative impact on the performance of a certain type of enterprise activity (Kuzmin, Adamiv, 2013).

So, taking into account all «weak signals», evaluating the parameters of the external and internal environment, and force majeure that can significantly affect the healthcare institution, it is possible to indicate the occurrence of a certain event, and determine all opportunities, threats or states of the organization.

We will assess the instability of the external environment of the Volyn Regional Clinical Hospital. For this, we will use STEP analysis. We build three tables that are connected.

The PEST analysis of the Volyn Regional Clinical Hospital was conducted in the following sequence (Semenyuk, 2017, Duhnovskij, 2021, Zinchenko, Malishko, 2016):

1) formed an extended list of factors for analysis within each group: political, economic, social, and technological. This stage involves the identification of factors that significantly affect the future results of the Volyn Regional Clinical Hospital;

2) determined the significance and degree of influence of each selected factor. At this stage, it is necessary to determine the influence of each of the factors on a point scale. During the analysis, we used a 3-point scale:

1 point – the influence of the factor is insignificant, i.e. its change has almost no effect on the results of the Volyn Regional Clinical Hospital;

2 points – a significant change in the factor affects the results of the hospital;

3 points - the influence of the factor is high, any changes in it lead to changes in the results of the activity of the Volyn Regional Clinical Hospital.

The strength of influence of each factor is determined based on an expert survey. Three experts were selected to conduct the assessment: Larin L. (director of the medical department and temporary disability examination of the Volyn Regional Clinical Hospital), Ustimenko V. (deputy director for economic issues), and Omelchuk V. (chief accountant of the Volyn Regional Clinical Hospital). At the same stage, the direction of influence of each factor is determined (significant – «+» or negative – «-»);

3) assessment of the probability of a factor change on a point scale based on an expert survey. In the conducted analysis, a 5-point rating scale was used, which:

1 – the probability of changing the factor is almost non-existent;

2 – low probability,

3 – average probability;

4 – high probability;

5 – the maximum probability of changes;

4) assessment of the real significance of factors, which involves the calculation of a weighted assessment of the influence of factors. In the conducted analysis, this is the calculation of the grade adjusted for weight. We found the product of the specific weight of the factor and the average expert assessment to adjust the influence of the factors.

The obtained results of stages 1–4 for the Volyn Regional Clinical Hospital are shown in the table;

5) distribution of all factors from the extended list in order of decreasing the real importance of factors. This division is made for clarity, because the higher the real significance of the factor, the more attention should be paid to controlling its change;

6) drawing up a summary table of the PEST analysis, i.e. formulating the conclusions and presenting the results in matrix form.

We presented the ranking of factors, as well as the distribution by groups, within the PEST analysis of the Volyn Regional Clinical Hospital in the form of Table 5.



Table 5

## Ranking of factors for PEST analysis Volyn regional clinical hospital\*

Political	Weight	Economic	Weight
Expansion of military operations on the territory of the state	0,55	Number of contracts with the National Health Service of Ukraine	0,43
Stability of political power and existing government	0,22	Level of development of entrepreneurship and business environment	0,16
Tax policy (tariffs and benefits)	0,13	Staff satisfaction with the level of remuneration	0,32
Bureaucratization and level of corruption	0,2	0.2 State financing of the industry in general	0,14
Together	1	Together	1
Social and cultural	Weight	Technological	Weight
The level of qualification and education of the population	0,12	The level of innovation and technological development of the industry	0,40
Requirements for the quality of the provision of medical services and the level of service	0,28	Research and development costs	0,08
The culture of the population applying for medical services	0,23	Legislation in the field of the technological equipment industry	0,07
The institution's ability to provide highly qualified services	0,27	The quality of the medical information system	0,45
Together	1	Together	1

\*Developed by the author

Among the political factors, the greatest influence on the work of the health care institution is the probability of the development of military operations on the territory of the state; among the economic factors - the number of contracts with the National Health Service of Ukraine; technological factors include the quality of the medical information system; among socio-cultural factors – requirements for the quality of medical services and the level of medical services.

An analysis of the main factors was carried out, taking into account the expert assessment of three experts of the Volyn Regional Clinical Hospital, and the assessments were determined, taking into account their specific weight.

Table 6

The influence of factors on the functioning of the Volyn regional clinical hospital\*

Description of the factor	Influence of the factor	Direction of influence	Expert evaluation			Average evaluation	Evaluation taking into account their specific weight
			1	2	3		
1	2	3	4	5	6	7	8
<b>Political</b>							
Expansion of military operations on the territory of the state	3	-	5	4	5	4,66	2,57
Stability of political power and the existing government	3	-	3	4	4	3,33	0,73
Tax policy (tariffs and benefits)	2	+	3	2	3	2,66	0,35
Bureaucratization and level of corruption	3	-	5	4	4	4,33	0,87
<b>Social and cultural</b>							
The level of qualification and education of the population	2	-	3	4	3	3,33	0,40
Requirements for the quality of the provision of medical services and the level of service	3	+	4	5	5	4,66	1,30
The culture of the population applying for medical services	2	+	3	2	1	2	0,46
The institution's ability to provide highly qualified services	2	+	5	5	4	4,66	1,26
<b>Economic</b>							
Number of contracts with the National Health Service of Ukraine	3	+	4	4	5	4,66	2,0
Staff satisfaction with the level of remuneration	3	-	4	2	1	2,33	0,75
Financing of the industry by the state in general	1	-	1	2	1	1,33	0,19
Development Level entrepreneurship and business environments	2	-	3	3	4	3,33	0,53
<b>Technological</b>							
The level of innovation and technological development of the industry	2	-	2	3	4	3	1,2
Research and development costs	2	-	1	1	1	1	0,08
Legislation in the field of technological equipment Industry	2	-	2	1	1	1,33	0,09
The quality of work of the medical information system	3	-	3	2	2	2,33	1,05
Together	x	x	x	x	x	x	13,83

\*Developed by the author

In the conducted analysis, their impact on the hospital is described for each factor. Necessary measures that can reduce the negative impact of the factor or maximize its positive impact on the activity of the Volyn Regional Clinical Hospital have also been determined.

Table 7

The level of influence of political factors and the necessary measures of the hospital\*

Political factors	Changes in the industry	Changes in the company	Actions
1	2	3	4
The probability of the developments of military operations on the territory of the state	The military conflict in the East of Ukraine has the potential to harm the indicators of the industry and its investment attractiveness. Large pharmaceutical companies and research laboratories potentially do not consider Ukraine as a stable partner for making investments.	The hospital may suffer losses due to uncertainty in providing the industry with free packages of medical assistance to the population	Enter into contracts with the National Health Service for priority packages of providing medical assistance to the population. To increase the percentage of assistance to categories of the population that are participants in military operations
Stability of political power and the existing government	The stability of political power directly affects the economic stability and investment attractiveness of the industry. The absence of positive changes in this factor and the expectation of changes in political power	The hospital may lose part of its profits due to the unstable political situation	Forecast the state of the political situation and have preventive measures in crises
Tax policy (tariffs and benefits)	A low tax burden will have a positive effect on the work of the industry. The current tax policy is loyal	Direct response of the amount of income to any changes in legislation. Liberalization of the tax burden will increase the amount of profit	Carefully monitor changes in tax legislation, look for legal ways to optimize the tax burden
Bureaucratization and level of corruption	A high level of corruption and bureaucratization will reduce the efficiency of the industry and reduce the potential for further development	Loss of income, loss of reputation, difficulty working with foreign consumers	Conduct anti-corruption measures across the entire management vertical

\*Developed by the author

The obtained results of the influence of socio-cultural factors on the Volyn Regional Clinical Hospital are shown in Table 8.

Table 8

The level of influence of socio-cultural factors and necessary measures  
Volyn regional clinical hospital\*

Social and cultural factors	Changes in the industry	Changes in the company	Actions
The level of qualification and education of the population	The outflow of able-bodied women abroad due to the war. This will negatively affect the development of the medical industry	Negative impact on the institution due to the need to recruit medical personnel, a long period of testing, the uniqueness, and importance of each medical worker	Use the services of HR agencies, search for employees from competitors, a contest for management positions
Requirements for the quality of the provision of medical services and the level of service	If the level of requirements for the quality of services is insufficient, it will lead to the loss of potential patients.	If the level of requirements for the quality of services is insufficient, it will lead to the loss of potential patients.	The use of innovations for the provision of medical care, the use of advanced equipment. A consistently high level of service provision minimizes possible losses.
The culture of the population applying for medical services	The transition to a new industry financing model "money follows the patient" makes it impossible to unjustifiably increase the volume of services provided.	There are no episodes of qualified care in cases where such care can be provided in full at the primary or secondary levels.	Increase the amount of information and educational work with the population about the specifics of the institution's work. Develop clear patient movement routes.
The institution's ability to provide highly qualified services	Cooperation with the World Bank makes it possible to attract funds for the purchase of medical equipment for performing medical interventions of a high level of complexity.	The institution can provide specialized assistance in full to the population of the region	Use the hospital's potential to provide emergency care, and attract the city's population to receive medical services.

\*Developed by the author

We analyzed the level of influence of social and cultural factors on the Volyn Regional Clinical Hospital and calculated the necessary coefficients. The cultural factor of the population applying for medical services has the greatest influence.

Table 9

The level of influence of economic factors and necessary measures  
Volyn regional clinical hospital\*

Economic factors	Changes in the industry	Changes in the company	Actions
Number of contracts with the National Health Service of Ukraine	Healthcare institutions will have the opportunity to conclude contracts for a large number of packages of services for the provision of medical assistance and rehabilitation of the population. This will provide institutions with financial stability.	The medical institution will be able to receive financial resources for the provided assistance within the framework of concluded contracts for packages of medical services.	The institution will be able to update medical equipment, raise the level of staff wages, and improve the quality of medical services.
Employee satisfaction with the level of remuneration	The level of remuneration of workers in the industry is at a consistently low level, which leads to high staff turnover.	Make qualified medical care, the number of patients dependent on the doctor's salary.	Increase payments to medical workers through monthly bonuses, which will positively affect the quality of the work performed by the staff.

\*Developed by the author

After analyzing the economic factors listed in Table 9, it is possible to single out the most significant – the number of contracts with the National Health Service of Ukraine, which increases the funding of the health care institution. The level of remuneration of the staff of the Volyn Regional Clinical Hospital also has a significant impact.

Table 10 presents the impact of technological factors, reflects their impact on the medical field and the Volyn Regional Clinical Hospital, and suggests preventive actions.

Table 10

The level of influence of technological factors and necessary measures in  
Volyn regional clinical hospital\*

Technological factors	Changes in the industry	Changes in the company	Actions
The level of innovation and technological development of the industry	It remains unsatisfactory due to a lack of funds and lack of government support	The level of innovation is at a fairly high level, but it is also necessary to attract sponsors and charitable organizations	Increase the attraction of state funds for the development of the industry
Research and development costs	The low share of spending on the industry during the pandemic, the insignificant share of spending on updating medicine, the low share of innovation in the industry	Insufficient costs for the development of the Ukrainian research product	To study the scientific potential of the industry, to develop mechanisms for the production of high-quality domestic medical equipment
Legislation in the field of technological equipment of the industry	Inconsistency of legislation in the field of technological equipment of the healthcare industry in Ukraine	Hospital work by established norms	Adherence to established norms, careful monitoring of changes
The quality of work of the medical information system	The slow pace of digitization of the medical industry, low coverage of certain levels of medical assistance	Low level of provision of computer equipment, frequent system failures	Increase the number of computer equipment, conduct regular training of personnel to work with medical information systems, and increase the number of employees of the automated management system department.

\*Developed by the author

We singled out the level of innovation and technological development of the medical field as the most important factor among technological factors.

Also for the analysis of the external environment of the Volyn Regional Clinical Hospital, a SWOT analysis, which involves determining the organization's strengths and weaknesses, opportunities, and threats.

We will build a SWOT analysis matrix for the Volyn Regional Clinical Hospital. The results of the analysis are presented in Table 11.

## Matrix of SWOT analysis for the Volyn Regional Clinical Hospital

Opportunities	Threats
<ol style="list-style-type: none"> <li>1. Medical reform</li> <li>2. Availability of investments and loans</li> <li>3. Implementation of the medical information system.</li> <li>4. Acceleration of population aging</li> </ol>	<ol style="list-style-type: none"> <li>1. Emphasis on the reorganization of primary care hospitals.</li> <li>2. High level of unemployment.</li> <li>3. Strengthening competition with private healthcare institutions.</li> <li>4. Low level of remuneration for medical workers</li> </ol>
Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. High specialization in the provision of medical care.</li> <li>2. Latest equipment.</li> <li>3. Qualified personnel.</li> <li>4. Autonomy (own laboratory, pathology and anatomy office, surgical and therapeutic buildings, dining room, hairdressing salon).</li> <li>5. The presence of two buildings (in the center and on the outskirts).</li> <li>6. A significant amount of scientific research is carried out based on the hospital.</li> </ol>	<ol style="list-style-type: none"> <li>1. Outdated system of energy carriers.</li> <li>2. Low level of work motivation.</li> <li>3. Lack of authority of the administration in the staff.</li> <li>4. Lack of computer equipment at the workplace for each doctor.</li> </ol>

\*Developed by the author

The results of the assessment of the external environment indicate that to improve the work of the Volyn Regional Clinical Hospital, it is necessary to carry out: modernization of medical equipment at the expense of own funds and involved investments; to increase the number of patients due to visiting preventive examinations in the regions of the region; increase the number of patients applying for expensive packages of the National Health Service of Ukraine; reduce the cost of paid services by increasing the flow of patients; gradually increase the energy efficiency of the medical facility; to change the management staff taking into account the opinion of the team; change the employee motivation system; to equip the workplaces of medical personnel with computers with unhindered access to medical information systems.

Uncertainty of the external environment and the acquisition of the property of adaptation to possible changes, we developed conceptual provisions for weak signal management of health care institutions (Fig. 1). The decomposition of the process of diagnosing situations should be based on the methodology of situational theories, project management, economic analysis with the mandatory use of experience and professional competencies of management personnel, that is, the principles of modern management (Didur, 2012).

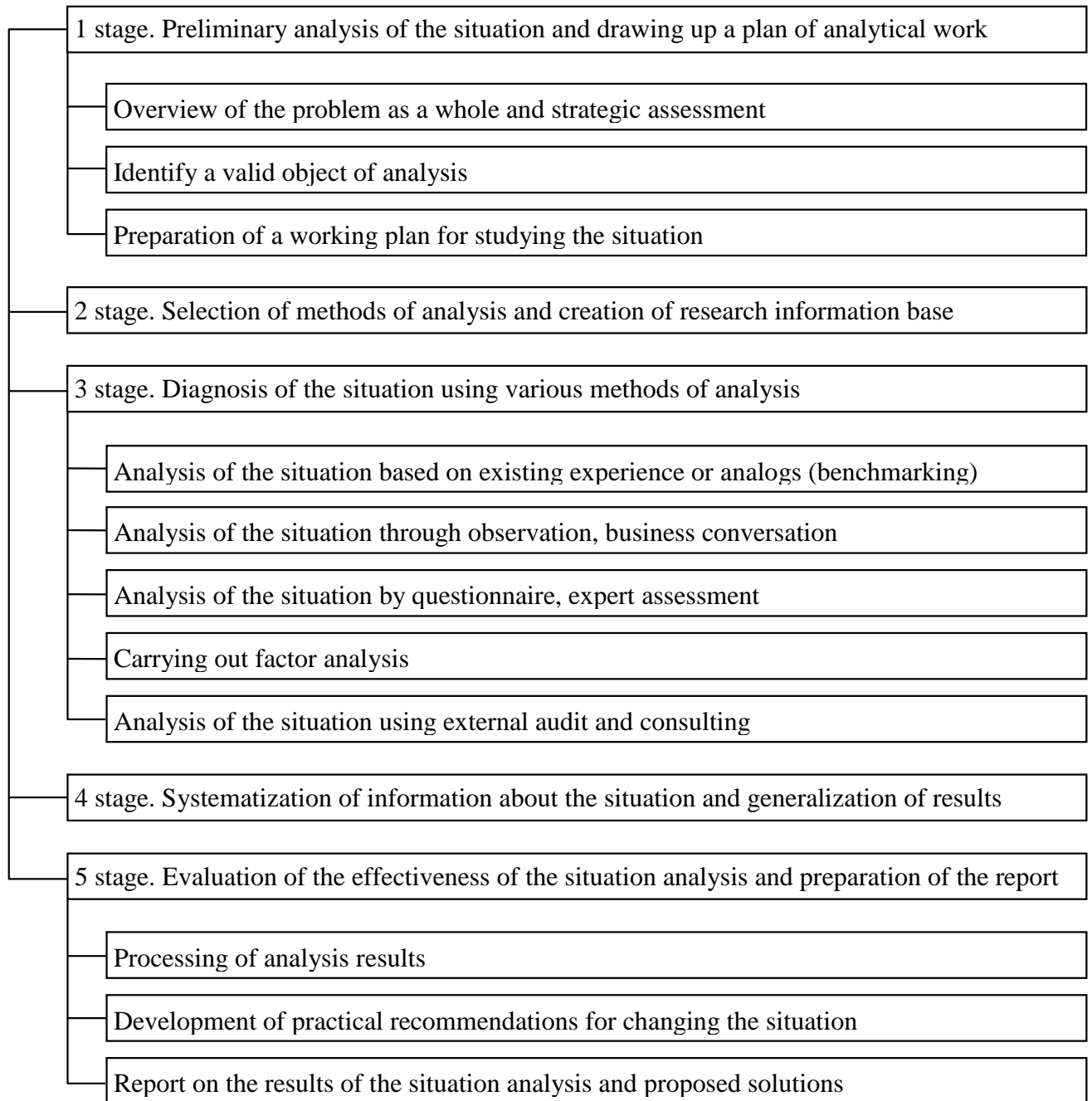


Fig. 1. Structural and logical scheme for diagnosing the situation in a healthcare institution\*

\*Formed by the author based on (Muromec, 2017)

The application of a conceptual approach to the management of weak signals in healthcare institutions should provide for compliance with the following requirements: mastery of theoretical principles and typical tools; correct understanding and interpretation of a specific situation; development of specific methods of work, research methods, management tools taking into account the specific situation to ensure the achievement of goals and objectives.



Also, the process of developing and implementing a strategy for the Volyn Regional Clinical Hospital requires improvement, if the institution chooses management based on weak signals (Fig. 2).

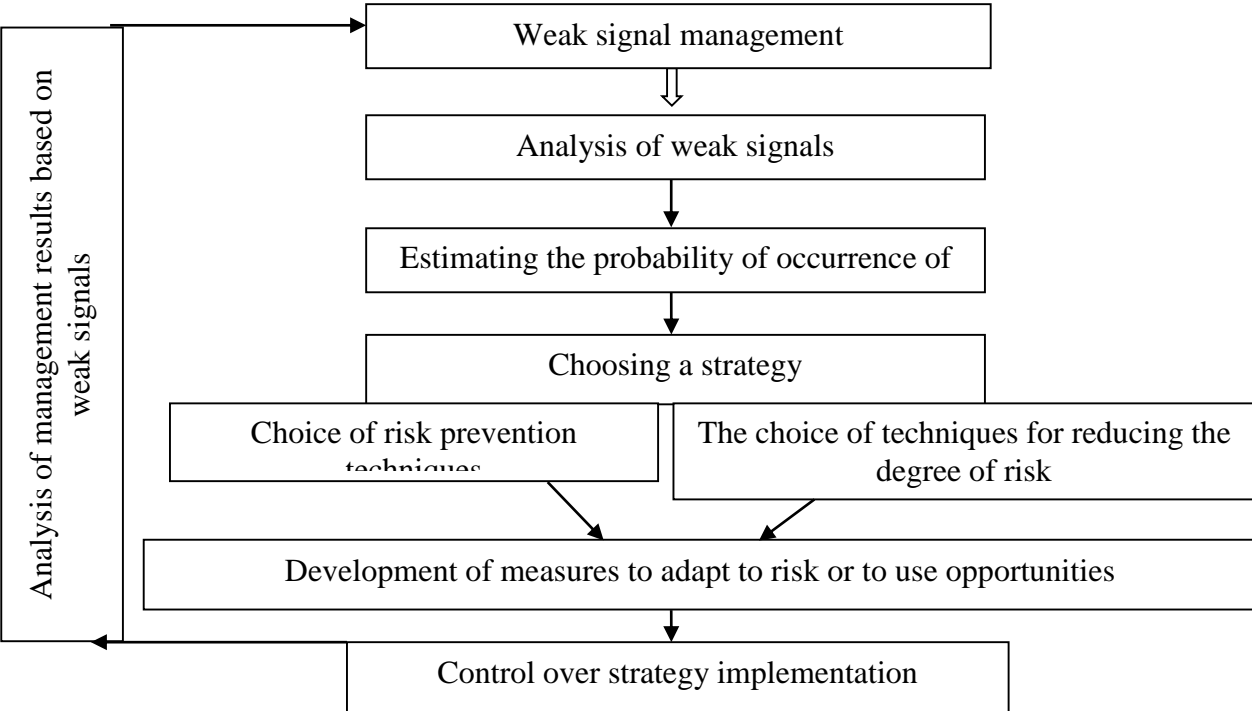


Fig. 2. The process of developing a strategy under conditions of weak signal management

\*Developed by the author

Let's consider each stage. First of all, it is necessary to analyze the factors that can affect the healthcare institution. In the second stage, factors and the probability of occurrence of events are evaluated based on established weak signals. The third stage involves choosing a management strategy, that is, finding means and techniques for reducing or preventing the existing risks of occurrence of events with negative consequences. The fourth stage of weak signal management is implemented through the selection of a strategy for the healthcare facility to adapt to risk or to exploit opportunities. At this stage, it is worth reviewing the system of strategic goals of the healthcare institution, which are presented in Table 12.

In the fifth stage, there is control over the implementation of the proposed measures to manage the process of implementing risk reduction tools and effective use of favorable opportunities.

Table 12

## Systems of strategic goals of the health care institution\*

Strategic goals		Operational goals	Tasks
1. Development of the economic potential of the healthcare institution	«Health Care Institution of Sustainable Economic Growth»	1.1. Use of high-tech equipment and innovative methods of diagnosis and treatment	1.1.1. Preparation of investment services 1.1.2. Technological modernization 1.1.3. Creation of a marketing complex in the institution 1.1.4. Development of logistics potential
		1.2. Stimulating the development of all structural divisions (departments) of the institution	1.2.1. Development of human capital support infrastructure 1.2.2. Stimulating the development of high-tech areas of the institution 1.2.3. Stimulation of diversification of activities
		1.3. Development of the institution's corporate culture	1.3.1. Promotion of cultural and recreational activities for employees of the institution 1.3.2. Conducting field trips, excursions
		1.4. Increasing energy efficiency	1.4.1. Support for alternative energy 1.4.2. Stimulation of energy-saving measures
2. Development of the potential of providing comprehensive medical services	«Region of equal opportunities»	2.1. Increasing the level of efficiency in providing medical services in the institution	2.1.1. Technological re-equipment of existing and creation of high-tech new mechanisms for providing medical services 2.1.2. Supporting the use of means in the process of providing services that do not pollute the environment 2.1.3. Improving access to medical services
		2.2. Development of production activity of the institution	2.2.1. Development of modern forms of cooperation with other institutions and organizations
3. Development of human capital	«The main driver of development is a man!»	3.1. Increasing the adaptability of medical workers to the needs of the labor market	3.1.1. Formation of a modern system of personnel training for the needs of the institution, development of the lifelong education system
		3.2. Increasing awareness and social activity of employees	3.2.1. Development of leadership and entrepreneurial qualities of employees 3.2.2. Formation of the environmental culture of employees
		3.3. Improvement of the personnel management system	3.3.1. Improvement of the personnel development management structure 3.3.2. Improving staff interaction tools for collaborative problem solving

\*Developed by the author

In the Volyn Regional Clinical Hospital, it is necessary to create an information and analytical unit, which should monitor weak signals: collection, systematization, preservation, and distribution of information; identified problematic issues.

The sixth stage involves the analysis of management results based on weak signals.

Therefore, the conceptual position of managing weak signals of healthcare institutions requires observing possible signals of changes and setting up monitoring of changes in the external and internal environments, updating the approach to setting goals, and choosing a strategy for the development of a healthcare institution.

A healthcare institution is faced with the choice of a weak signal management model. It is advisable to consider the situation and make a choice between the three models (Table 13).

The choice of model depends on the type of strategy chosen, the specifics of its implementation, and the expected conditions in which the healthcare institution will carry out its activities in the relevant period.

We believe that in the weak signal control model, it is worth using the method of building an event tree based on a weak signal of the internal environment of the healthcare institution. In fig. 3 presents a tree of events for the Volyn Regional Clinical Hospital following a weak signal «Incorrect entry of medical data into the medical information system», which describes the reaction mechanism to it (Fig. 3).

We identified a weak signal as an initial sign of a potential phenomenon – incorrect entry of medical data into MedEir's medical information system. With a probability of 50%, work with the medical information system will be established in the institution, which will create opportunities for increasing the funding of the institution. In turn, there is a 60% probability that the hospital will maintain its position as a leader in the field of medical services in Volyn, and accordingly, there is a 40% probability that the opportunities for professional development of staff, improvement of material incentives and working conditions of doctors will expand.

Models of strategic management for weak signals in healthcare facilities\*

Models of strategic management	Types of changes		Optimal conditions for model implementation
	Gradual	Periodic	
Reactionary	Method of trial and error	Searching for a way out of a crisis	It is effective in conditions of a stable external environment when changes are repeated and there is an opportunity to use the traditional strengths of the organization
Active special	Changes move from the bottom up, episodic, logical, and gradual. The initiators are the research and marketing development departments	Search by trial and error. Reaction to intermittent changes. Anticipation of episodic changes (management by circumstances, crisis management)	Considered a priority in a busy, gradually evolving environment, the speed of changes in the market environment will not outpace the organization's response
Active systematic	Periodic extrapolation on the scale of various activity trends (long-term strategic planning, research and development planning)	Periodic and systematic extrapolation of future development (strategic planning, strategic management)	<p>1. Long-term planning is necessary when the speed of change begins to exceed the speed of the institution's reaction. When periodic changes are expected in the external environment, the last two models become less effective.</p> <p>2. Strategic management is necessary when the external environment requires the organization to develop new capabilities</p>

\*Developed by the author

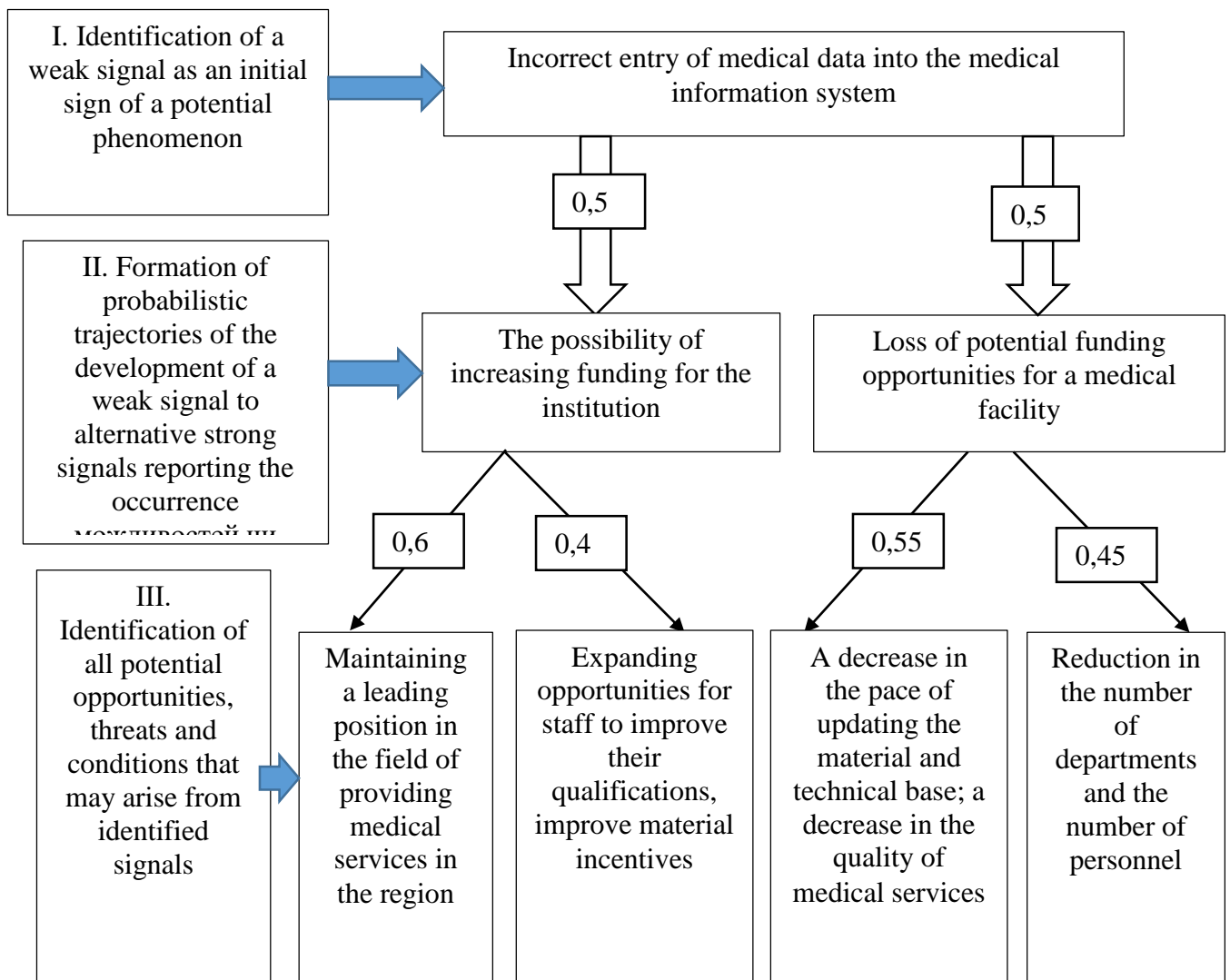


Fig. 3. Tree of events for the Volyn Regional Clinical Hospital following a weak signal of the internal operating environment «Incorrect entry of medical data into the medical information system»\*

\*Developed by the author

Also, with a probability of 50%, the threat of losing potential financing opportunities for a medical facility may materialize. In turn, with a probability of 55%, this will lead to a decrease in the rate of updating the material and technical base of the hospital and; a decrease in the quality of medical services; and with a probability of 45%, there will be a reduction in the number of departments and personnel of the institution.

Such a tree of events can be built for various signals of the external and internal environment and determine the ways of reacting to them.

In general, we believe that the following steps should be taken to improve the efficiency of the hospital.

1. To enter into contracts with the National Health Service of Ukraine for priority packages of providing medical assistance to the population, which will allow to update

medical equipment, raise the level of staff remuneration, and improve the quality of medical services.

2. To increase the percentage of assistance to categories of the population participating in military operations.

3. Carefully monitor changes in tax legislation, and look for legal ways to optimize the tax burden.

4. To carry out anti-corruption measures across the entire vertical of hospital management.

5. Conduct open tenders for filling and closing vacant positions, especially at the upper and middle management levels.

6. Transition to innovative methods of providing medical care, and use of advanced equipment.

7. To intensify information and educational work with the population about the specifics of the institution's work, to improve patient movement routes.

8. Use the potential of the hospital to provide emergency care.

9. To increase payments to medical workers through monthly bonuses, which will positively affect the quality of the work performed by the staff.

10. To increase the attraction of public funds for the development of the hospital.

11. Effectively use the scientific potential of the Volyn Regional Clinical Hospital, to develop mechanisms for the production of a high-quality domestic medical product.

12. Increase the number of computer equipment, conduct regular staff training in working with medical information systems, and increase the number of employees in the analytical and statistical service department.

The proposed model of weak signal management will make it possible to increase the efficiency of the healthcare facility, taking into account obstacles of an objective and subjective nature.

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## 2.3. ORGANIZATIONAL ASPECTS OF MANAGEMENT OF MODELS OF COMMERCIALIZATION OF INTELLECTUAL TECHNOLOGIES

Currently, research and scientific departments of enterprises and organizations that have significant innovative potential, material and financial capabilities of resources and research activities, form scientific and technological progress in the field of technological development. Since the research and development sector is constantly unrelated to business practice, it is difficult to create the proper conditions for the transfer of technology and knowledge into practical activities. For example, the vast majority of universities cooperate with industrial enterprises, but the main problem is the commercialization of technological potential. The goal is to transform the potential of technology and knowledge into useful products or services.

The implementation of a technological innovation project, the main task of which is the commercialization of the results of innovation, is one of the most important areas of innovation activity of an industrial enterprise. The effectiveness of this direction is ensured by the adoption at the enterprise of many important decisions regarding its strategic development. They can be located in a logical, orderly sequence of measures leading to the achievement of the main goal of innovation, which should be to increase the competitiveness of the enterprise in the market through the practical implementation of an innovative project.

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Commercialization is a multi-stage process in which owners of technology or innovation have to make many decisions that lead to an impact on the success or failure of an enterprise. These solutions are often associated with high risk due to the peculiarity of novelty that distinguishes a new technology or innovation. As examples of many breakthrough technologies or innovations show, properly conducted commercialization can lead to impressive success for enterprises.

Therefore, decisions related to the form of this process and the actions taken in this process, in order to achieve the intended results, should be considered not only tactically, but also strategically. The introduction of new technology on the market can lead to the emergence of new opportunities and diffusion of innovations, which will lead to the growth and development of the enterprise, an increase in its value, the emergence of new markets.

At this time, in order to successfully commercialize their scientific developments, enterprises and organizations of different use different models for the creation and implementation of technological innovative projects. On the one hand, these projects should be the result of scientific and technological progress, effectively implemented and take into account the experience of managers, and on the other hand, they should be adapted to the specific conditions that determine the location of the enterprise, its size, the specifics of the field of activity, environmental and personnel capabilities (Kocziszky et al., 2012; Lobacz & Niedziel, 2015).

Commercialization of the results of innovation is a very important process in economic terms. It's not art To produce something is the art of selling something. Nowadays, ability generate new knowledge becomes less important than the ability to sell (or buy) them and use them effectively. Regarding R & D and innovation activities of the enterprise it can be interpreted in two directions (Trzmielak, 2013):

a) as a commercialization of the result of scientific research (GDR) – before or after obtaining for it the regime of legal protection;

b) as the commercialization of the finished product (service), that is, the launch of a new product on the market.

In our opinion, both the first and second directions of commercialization are economically justified and require appropriate scientific and methodological support. Technological innovative model of commercialization of intelligent technologies is an appropriate scheme of innovation activity carried out in the enterprise. It includes a sequence of its actions - from the idea of this project to the launch of a product (technology or service) on the market - divided into specific tasks.

At the same time full innovation cycle that includes consistency activities from concept to Commercial the implementation of this technological innovation does not always take place on Innovation Enterprise. Most often the first phases of innovation begin in the field of research and development (R&D) and only after completion of these

works and concretization in the form of Innovative project they Transmitted to another companyhowe and implements this project in practice, delivers ready Innovative product to the corresponding target market (Fig. 1).

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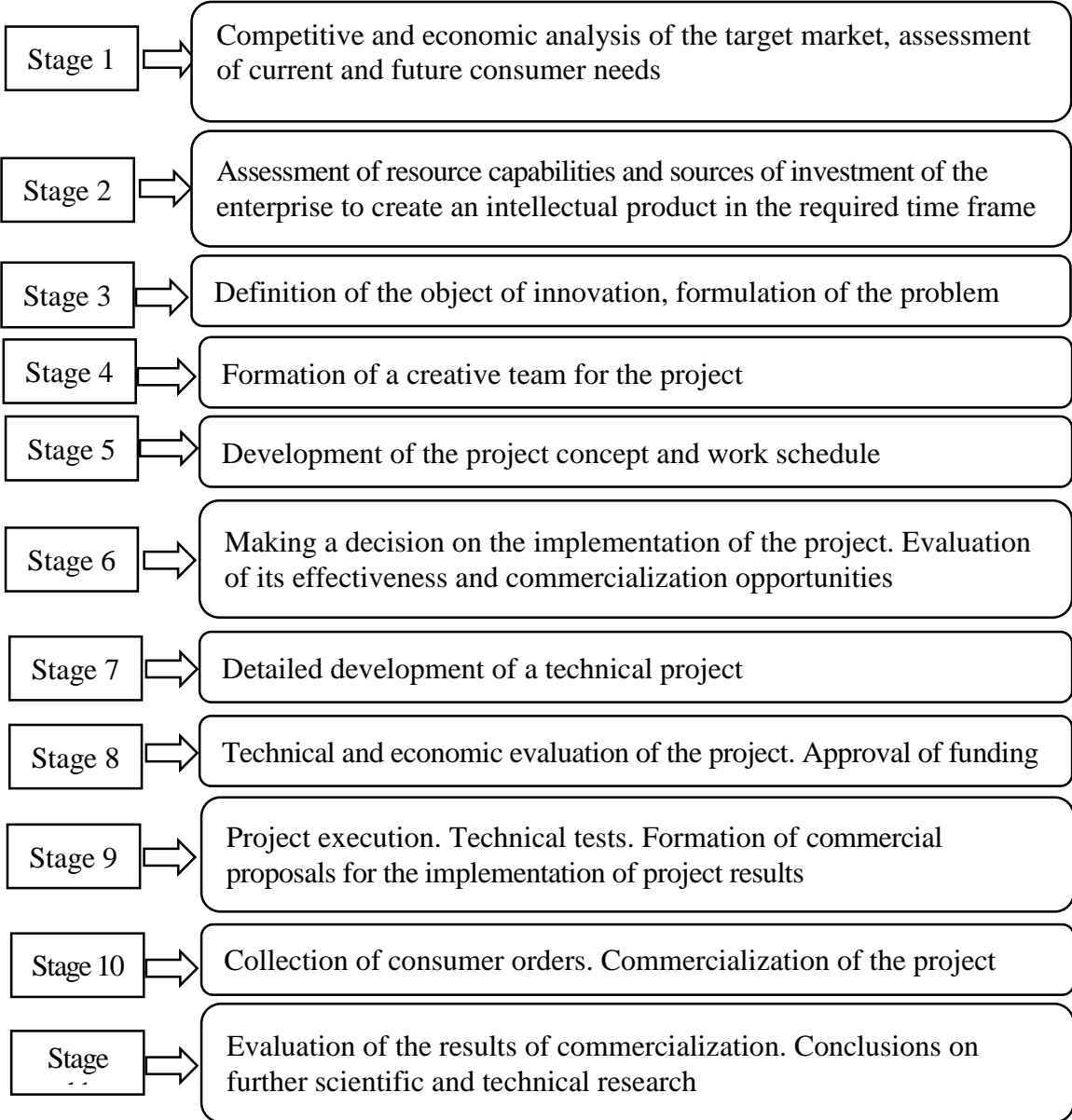


Figure 1. Scheme of the innovation process for the creation and commercialization of intelligent technology

Source: authors development

Each company works to achieve a specific goal, time and place and thanks to the adopted strategy of operation. Success in sustainable development is achieved through

the effective use of available resources and their transformation into market products and services that bring the company appropriate income. To achieve this success, a mission and strategy must be formulated in the enterprise. The mission and strategy of the enterprise is a kind of indicator in which direction the company will follow and what activities will develop in the future.

The mission of an enterprise is often considered the starting point for shaping its strategy. It should include a statement about the meaning of the existence of an enterprise or what reasons determine the need for this enterprise, what it wants to achieve. The main difference between a mission and a strategy, in our opinion, is that the mission is not tied to quantitative indicators or time frames. The mission is what allows you to emotionally express the meaning of the existence of the enterprise. Small and medium-sized enterprises often do not formalize the content of their mission, but most of them are able to provide a significant reason that justify their existence in the market, as well as the general goals they want to achieve. Comparing the mission and strategy, we can say that strategy is a detailed mission.

A clear emphasis on innovation in enterprise strategy is important and allows the company to consider innovation as an ongoing process, and not just an event that occurs from time to time. Enterprises without such a strategy innovate only in response to the actions of their competitors or to meet market requirements. On the other hand, enterprises with a clear innovation strategy constantly remind their employees of the importance of prospects in this process. This emphasis on innovation makes employees are more willing to form new initiatives and ideas for improving existing products. The inclusion of innovation in the strategy gives them an awareness of its importance for the enterprise, it motivates them to participate in innovative processes and increases the innovative potential of the enterprise.

Commercialization, in our opinion, is defined as any activity that introduces scientific achievements (knowledge), a new product, method or solution to the market by selling them or providing them to other entities (for example, entrepreneurs) in order to obtain financial benefits. This is especially true of new products, technologies or organizational solutions that will allow you to sell, produce, share something potentially valuable and profitable for profit. The essence of commercialization is to ensure the developed results of scientific research, development work or ready-made innovative projects based on market operations. All intelligent products created in the enterprise are subject to a commercialization process, the diagram of which is shown in Fig. 2.

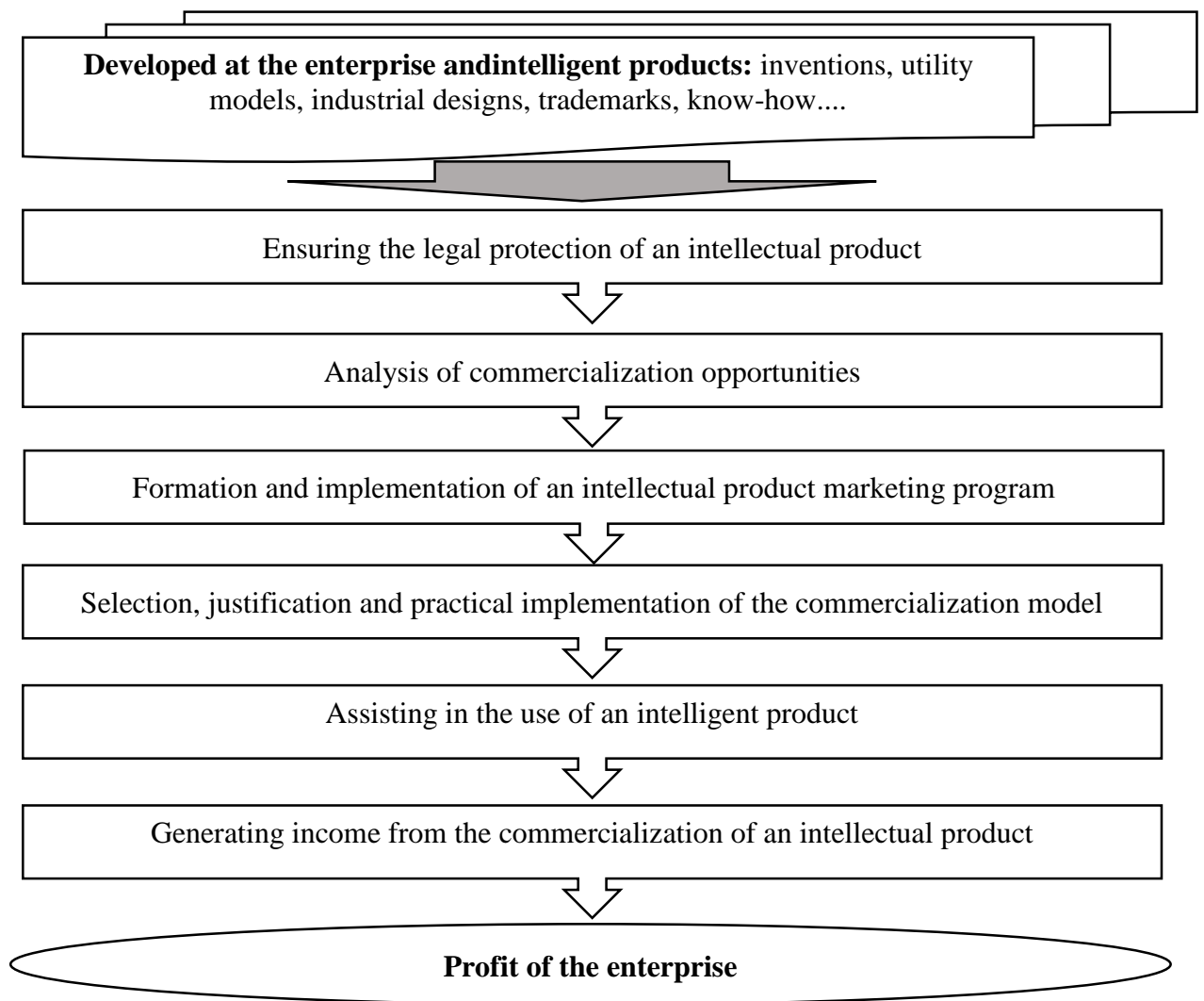


Figure 2. Scheme of commercialization of an intelligent product

*Source:* authors development

In the scheme presented in Fig. 2, it is proposed to distinguish five main (most important) stages:

- idea – realization of the potential and uniqueness of the technology, collection of information about the technology;
- incubation – determining the potential for commercialization of technology, checking ownership of the technology, preparing a business plan for commercialization, obtaining external financing for the commercialization of technology;
- demonstration – preparation of such a version of the product / service that will be presented on the market;
- promotion – presentation of goods on the market, collection of information about the intellectual product from buyers (consumers);

- service – expansion and retention of an intelligent product on the market, full use of the possibilities of commercialization of technology.

Proper management of an innovative project, development and implementation of research results at the stage of their preparation for market commercialization minimizes the risk of an erroneous investment decision. In the process of commercialization at each stage, the possibilities of commercial sales in industrial production can be evaluated. It is usually recommended to check the validity of individual assessments of an intellectual product, which are performed at certain stages of the commercialization process. , and their importance to individual subjects. The types of assessments subject to empirical analysis in the process of conducting a technological audit by the enterprise-developer are shown in Fig. 3.

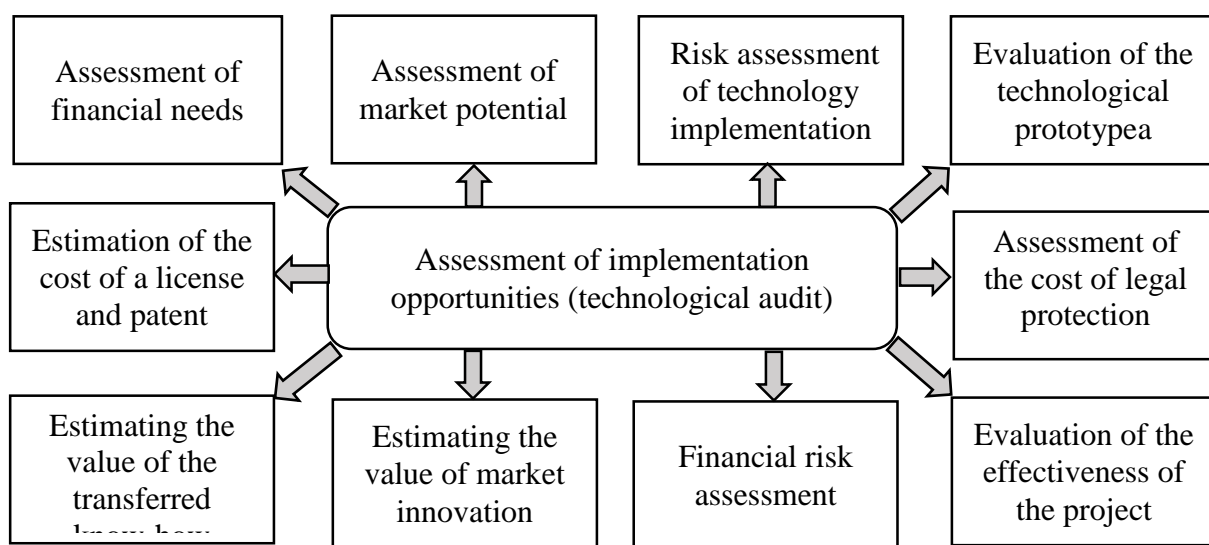


Figure 3. Types of assessments in the implementation of an innovative project

Source: authors development

We conducted a study of the importance of using the proposed ten assessments in the implementation of an innovative project and preparing it for commercialization in industrial enterprises and universities. At the same time, these groups of respondents were divided into two segments: sellers (buyers) of patents and sellers (buyers) of licenses.

The search for general trends, significant relationships between the studied types of assessments provided information on the practical application by the majority of respondents of the assessment of the cost of a license, the possibility of protecting intellectual property, assessing the cost of a prototype, assessing market potential and technological audit by sellers of licenses and patents. For these types of assessments, respondents in their majority indicated that they are used "always" and "in most cases we use."

Relatively high rates, all groups of respondents characterized the importance of evaluating market content. The importance of assessing market potential in the

commercialization of research and technology results is recognized by enterprises and entrepreneurs in the first place. Almost two-thirds of the surveyed industrial enterprises said they always use an assessment of market potential in innovation. In the case of universities, only one in five respondents considers this score to be Managing the commercialization of research, technology and new products is crucial and always applicable. In academic institutions, indicators of analysis and assessment of financial needs and financial risks were of the greatest importance. This assessment is always carried out by more than 70% of universities. In our opinion, this situation is explained by the extremely low financial capabilities of Ukrainian universities in conducting research and their financing.

Industrial enterprises of Ukraine, in our opinion, do not pay due attention to the assessment of commercial risks of introducing a novelty. Similar conclusions were reached by the Polish researcher Trzmielak D. M. (2013), as noted by a small percentage of Polish enterprises that make calculations for assessing these levels of commercial risk of innovation. Among the priorities, this assessment is only in half of the surveyed Ukrainian enterprises, and in Ukrainian universities this indicator is even less important. (Table 1).

Table 1

The structure of respondents' answers on the importance of conducting various types of assessments in the commercialization of innovation results

Type of assessment	Industrial enterprises		Universities	
	Patent sale	License sale	Patent sale	License sale
The answer is "always using"				
Assessment of market potential	78	72	32	21
Estimating the value of a license or patent	67	57	74	69
Estimation of the cost of a technical prototype	59	48	44	38
Assessment of financial needs	43	38	68	74
Assessment of the cost of legal protection	69	78	81	77
Financial risk assessment	38	42	75	80
Implementation risk assessment	54	48	41	39

*Source:* author's research

In many cases, the importance of conducting one or the other assessment depends on how often an enterprise or organization conducts commercialization procedures.

Table 2

The structure of respondents' answers on the importance of conducting different types of assessments depending on the volume of commercialization

Type of assessment	Number of commercialization procedures			
	1-2	3-5	6-10	More than 10
Patent sales ("always use" answer)				
Conducting a technological audit	39	40	74	82
Assessment of market potential	52	61	77	88
Estimating the value of a license or patent	47	56	63	81
Estimation of the cost of a technical prototype	54	65	74	66
Selling licenses (the answer is "always use")				
Estimating the value of a license or patent	22	35	65	72
Assessment of the cost of legal protection	74	82	87	91
Assessment of market potential	41	54	67	82

*Source:* author's research

Two-thirds of respondents who sell the most licenses in most cases estimate the cost of a license. Instead, four out of five respondents stated their assessment of intellectual property market opportunities. In the patent sales segment, the percentage of respondents who almost always used the four ratings indicated was relatively higher. Nine out of ten respondents commercialize patents by estimating market power. In the case of other estimates, the percentage of respondents is relatively lower, but in all segments of respondents who sold more than ten patents, about 75% of respondents recognize that always and, in most cases, they use a technological audit, an assessment of the cost of the prototype and a license (Table 2).

Undoubtedly, increasing the experience of selling licenses and patents brings knowledge and practical use of various types of analysis in the management of intellectual property objects to the beginning of the process of their commercialization. At the same time, there is a certain statistical relationship in the studied sample between the segment of respondents who sell licenses and estimates of the cost of the license and the possibilities of legal protection of intellectual property, as well as between patent sellers and estimates of the cost of the license, prototype, market potential and the use of technological audit.

Commercialization begins already at the stage of creating the concept of innovation in its practical form and is associated with the formation of a list of future consumers of an intellectual product that is still being developed. Therefore, it is closely related to marketing activities, which should be carried out by the creators of new innovative products, as well as new intelligent technologies. This requires an integrated approach to the commercialization process, which should cover the entire value chain.



The study of the most used models of commercialization of technologies (Lobacz & Niedziel, 2015; Trzmielak D.M., 2013; Żebrowski Paweł (2018) allows us to distinguish from them the following:

- use in own production;
- sale of property rights;
- Licensing;
- strategic alliance;
- joint venture;
- creation of a dedicated enterprise.

**The actual use of technology in production** and commercial activities assumes that the new technology or its elements will become a production resource for the development enterprise (Kocziszky et al., 2012). With this form of commercialization, the patent owner is the only one who makes a profit, the only player in the market, which provides him with opportunities to maintain a monopoly state in the market (Fig. 4).

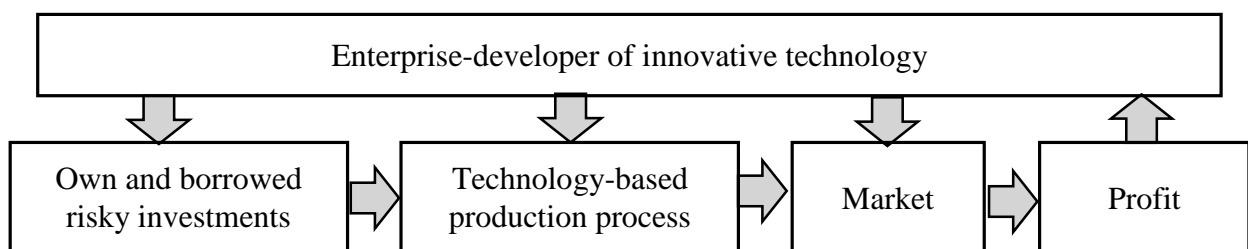


Figure 4. Scheme of the model of commercialization of innovative technologies – "own use"

Source: author's development

The scheme, illustrated in Fig. 1, makes it possible to note that the principle of this model of commercialization is the total control of the technology developer over the innovation process and the localization of the full amount of profit from commercialization in the hands of one owner, which is generally a plus for the enterprise when making risky investments. If you decide on the use of innovative technologies in your own production, then if they meet the needs of production, they are able to bring additional income to the owner. That is, this method of commercialization is justified, but this requires considerable means, first of all, for the development, creation of technology and bringing it to a state of operation.

During the use of innovative technology in its own production, it is possible to issue non-exclusive licenses (Kocziszky et al., 2012; Pererva et al., 2010), which implies the presence of a large number of licensors, or use leasing for equipment, franchise or engineering in the form of advisory services, etc.

The model of application of technology in its own production involves the use of two methods of commercialization of technologies: "pushing to the market" and "drawing into the market". The mechanism of "pushing the market" implies the primacy of technology. Here, the developer does not so much adapt to the existing demand in the market, but tries to draw attention to his development and cause demand for it. Note that the highest level of commercialization of scientific and technical developments is the formation of new market needs based on the achievements of science and technology. The mechanism of "market retraction" is based on the priority of consumer preferences. In such conditions, the developer tries to determine the possible demand in the market, and then orient the development to it. The basis of such a mechanism can be laid value chain M. Porter (2005).

The advantages of this form of commercialization are:

- use in own production allows you to avoid spending money and time on finding a buyer of innovative technology;
- allows you to maintain a monopoly over the market for an innovative product;
- the possibility of implementing sole control measures and making a final decision, the presence of flexibility in commercial actions and the absence of possible conflicts of interest;
- the ability to bring additional profit through leasing can be realized;
- there is no risk of full or partial leakage of trade secrets of the patent owner, which are associated with innovative technology;
- it is possible to use engineering services in parallel, which includes engineering and consulting services: research, calculation, analytical, preparation of a feasibility study for a project, development of recommendations for the introduction of an innovative product;
- provided with the ability of continuous internal control over production, and with the successful use of technology, the possibility of creating a small enterprise is ensured.

The disadvantages of this form of commercialization include:

- long payback period;
- concentration of all areas of responsibility for the efficiency of commercialization within only one industrial enterprise;
- in the presence of market problems and failures during commercialization, there is a significant probability of losing important types of resources;
- the need for significant material and financial costs for the implementation of the invention.

***The sale of property rights is one of the*** simplest forms of commercialization. Property (exclusive) rights to intellectual technologies have all the commodity characteristics (utility – can satisfy needs; rarity – allows you to turn technology into a product; universality – that is, suitability for the process of exchange for other goods or

money), since they are the result of labor and therefore have a certain price. Unlike material goods for innovative technologies, sales are realized only if there are opportunities alienation of exclusive rights both from a specific person (inventor) and from the development organization (Kobielieva, 2021; Tkachov, 2021). Only in such cases, the rights to innovative technologies can acquire the characteristics of the product in its usual sense. Note that the product can be only those intelligent technologies that can be separated from a person or enterprise (inventions, trademarks, works of literature, audio and videograms, etc.). Exclusive rights are not separated from the person (knowledge, creative abilities, skills, etc.) and from the enterprise (personnel, marketing, business reputation, etc.) can not act as a commodity. Another thing is that they can be transferred together with the enterprise or person. In particular, it is impossible to fully transfer the professionalism (outstanding abilities of the organizer) of the director of this enterprise to the director of another enterprise, but you can invite this talented person to work, offering him more favorable working conditions.

This model of technology commercialization involves the implementation of all stages of the commercialization process by another enterprise that is sufficiently knowledgeable in this area. Its use requires a written agreement with the relevant terms of sale. Usually, when a buyer (consumer) buys, for example, a patent, the price also includes assistance to a scientific institution in its implementation, but this practice is not always applied (this depends, in particular, on the degree of development of the acquired technology, know-how, buyer, etc.). The very structure of such a contract is not as complicated as in the case of, for example, a license agreement (Trzmielak D.M., 2013). When using the model of sale of property rights (property rights), the seller ceases to bear further costs for the development of the intellectual technology that is being sold, loses the ability to control its further development. By selling property rights, the seller receives a one-time financial benefit and, thus, saves himself from receiving further income from subsequent benefits received by the buyer when using the intellectual product.

In addition to the "usual" sales, you can also distinguish sales for the so-called milestones. They are based on payments to scientific institutions and researchers after completing the specific steps described in the contract, for example (where "X" is the total amount negotiated for the sale of technology): normal sale - payment of 100% "X", for example, 30 days after signing the contract; sales based on stages: a) payment of 25% "X", for example, 30 days after signing the contract; b) payment of 20% "X" upon reaching the first proceeds from the production of products based on the implemented technology, but not later than 2 years from the date of signing the contract; payment of 30% "X" after receiving income in the amount of 5 million rubles. hryvnia from the sale of products on the basis of the implemented technology, but not later than 3 years from the date of signing the contract; payment of 25% "X" after receiving an income of 10

million rubles. hryvnia from the sale of products on the basis of the implemented technology, but not later than 5 years from the date of signing the contract.

The advantages of this form of commercialization are:

- the buyer (consumer) has the exclusive right to dispose of the patent for commercial purposes, through the purchase he acquires such a right in relation to the commercial use of the patent;

- the seller does not need additional costs - regardless of the level of development of the technology, the seller should not bear further costs for the development of the technology being sold, because the rights to it pass to the buyer;

- the transaction is carried out easily with a low level of commercial risk, since the contract of transfer of the right can be in the form of an ordinary contract of sale;

Payment for the transaction, as a rule, is made once without installments, which is a convenient form for both the seller and the buyer, as it significantly reduces the level of financial risk.

The disadvantages of this form of commercialization include:

- the seller is deprived of any form of ownership - after the sale of property rights to the buyer, the seller is deprived of the right of ownership;

- For the seller, there are significant difficulties in finding a buyer, since the buyer needs to pay much larger amounts than in the case of a license before the stage of technology implementation (that is, with an uncertain profitability of the technology). Patents are acquired mainly by large enterprises that can afford non-urgent research of the technology market in terms of the profitability of its implementation;

- the seller's inability to participate in subsequent income - if products made using the patent sold are successful, the seller is not entitled to claim participation in the sale - the sale of property rights in practice may be the least profitable form of commercialization for him;

- there is a possibility of not introducing the technology - in the case of a regular sale, the buyer may not implement the technology (purchase to block competition).

***Licensing of ownership*** can be briefly described as allowing a third party to exercise ownership with due consideration. Licensing provides additional profit to the patent owner from the sale of the license (Fig. 5).

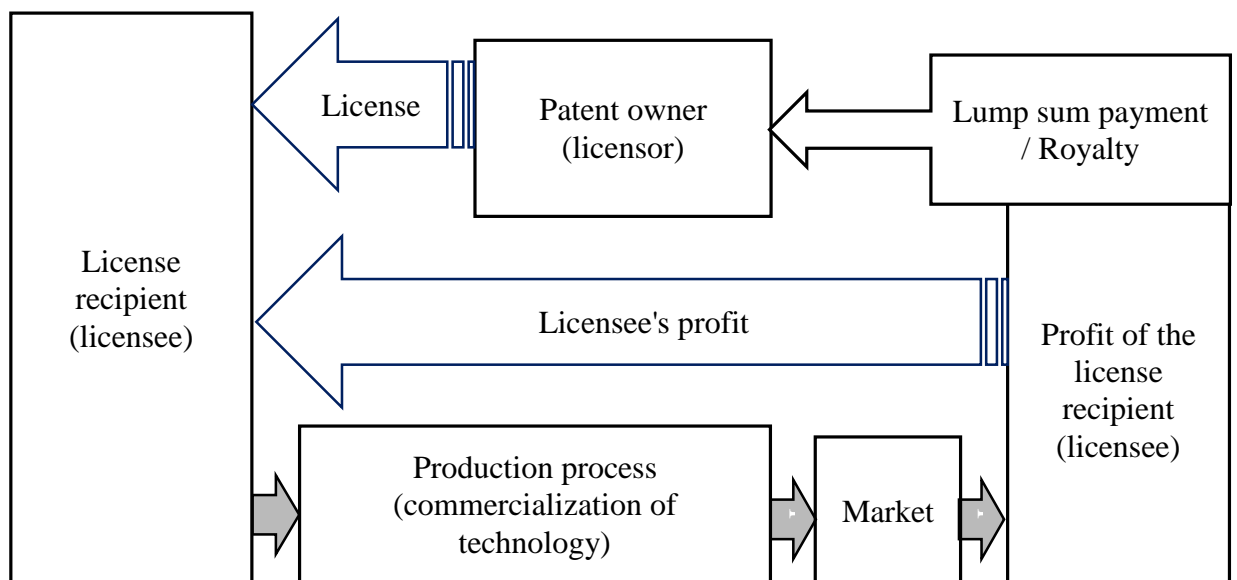


Figure 5. Scheme of the model of commercialization of innovative technologies – "licensing"

*Source: authors development*

The conclusion of a license agreement has two main advantages for the licensor. The first is financial, most often manifested as a percentage share in the proceeds from market sales and (if it is laid down in the concluded contract) down payment. The second advantage for the licensor is the ability to control the direction of the licensee's work with intelligent technology. The introduction of a down payment also gives a better chance of finding an investor, since the down payment is much lower, and fees for acquiring a license arise after reaching the income from the sale.

The sale of a license allows the licensor to solve problems in the case when, for example, the demand for products exceeds the volume of its own production, when funds are needed to improve production or the market conditions suddenly deteriorate (Lobacz & Niedziel, 2015; Trzmielak D.M., 2013).

As with the transfer of ownership, the license agreement must be concluded in writing. License agreements may cover the maximum term of a patent - if the validity of the license is not specified in the license agreement, it is valid for the entire term of the patent (for example, 20 years). The content of the license agreement must contain at least information about the subject of the license, its validity period, scope of use, the territory in which it operates (the license agreement may be, for example, regional) or the amount of the license fee. Unless otherwise stated, the licensor is obliged to provide all the information and technical experience that he possesses at the time of the conclusion of the contract, necessary for the use of the invention. Also, in case of transfer of a patent encumbered by the license, the license agreement is valid for the assignee.

Advantages of commercialization of technologies in the form of licensing:

- the ability of the licensor to participate in future income;
- the licensor's ability to participate in the further development of the technology due to the fact that the technology/patent is still owned by the licensor, there are no obstacles to its further development;
- compared to the sale of property rights, it is easier for the licensor to find a buyer, the licensee pays a much smaller amount as a down payment, so it is easier to start negotiations on the conclusion of the contract;
- formation of long-term partnerships;
- usually very small financial risks are associated with licensing;
- there is no need to temporarily interrupt scientific activities;
- regular receipts of profits;
- the licensee may defer the fee for the use of the right, that is, it can pay the license fee only upon receipt of income from the sale.

The disadvantages of this form of commercialization include:

- for the licensor, this licensing model carries a greater risk, since after an advance payment, the licensee may falsify income levels or not pay royalties. Care is needed when choosing a licensee (who wants and can operate this technology);
- the licensor at the first stage receives less money immediately after signing the contract compared to the sale or does not receive it at all. Usually, licensing revenues are much lower than from setting up a Start-up company; the costs of legal services in patenting and licensing (especially abroad) can be high;
- competitors may deny the legality of the patent;
- the licensee for one reason or another does not use this technology;
- the cost of technical support exceeds the expected;
- it's hard to detect copying your technology on the market;
- the licensee underestimates sales volumes, it is difficult to conduct an inspection;
- for a licensor who cares about maintaining an appropriate contract structure, in the licensing model, the contract structure is important, among other things, it is about the introduction (commercialization) of technology, which is decisive due to the subsequent license fee. Thus, the contract may include a provision that, for example, the licensee must implement the technology within three years from the date of signing the contract, and then, in case of non-compliance with this clause, the exclusive license becomes non-exclusive;
- in any case, the licensee must pay, for example, an annual license fee in exchange for the use of the right;
- in most cases, the licensee needs to undergo checks by the licensor, which are aimed, for example, at checking whether the licensee falsifies the data necessary to assess and determine the amount of license payments.

Licensing is most often used to implement technology on the market through an exchange or the purchase of intellectual property. Cooperation between the licensor and the licensee is crucial in the implementation of the subject of the license, because it is the licensor who has more knowledge of intelligent technology. There are models of granting, acquiring licenses and a model of cross-licensing (intellectual property links between organizations). Licensing model makes it possible to successfully commercialize intelligent technologies or the results of scientific research, characterized by less financial risk than the creation of a new business entity to implement the technology. The licensor does not bear capital costs for the implementation of the enterprise for the use of an intellectual product. On the other hand, the investment risk when buying a license applies only to intelligent technology, and not to the entire investment activity of the enterprise. The license gives the licensor control over the exercise of technology rights. The propensity to use licensing strategies increases with increased competition in the target market and the importance of protecting intellectual property in this market. On the other hand, it decreases with a low level of protection and protection of rights to intellectual property. The licensor usually decides on the use of the licensing model based on the analysis of input and output resources and the risk of self-entry into the market.

Another type of commercialization is a *strategic alliance*, which provides for the presence of at least two companies that carry out joint research and development work together with this scientific organization or institution (Fig. 6).

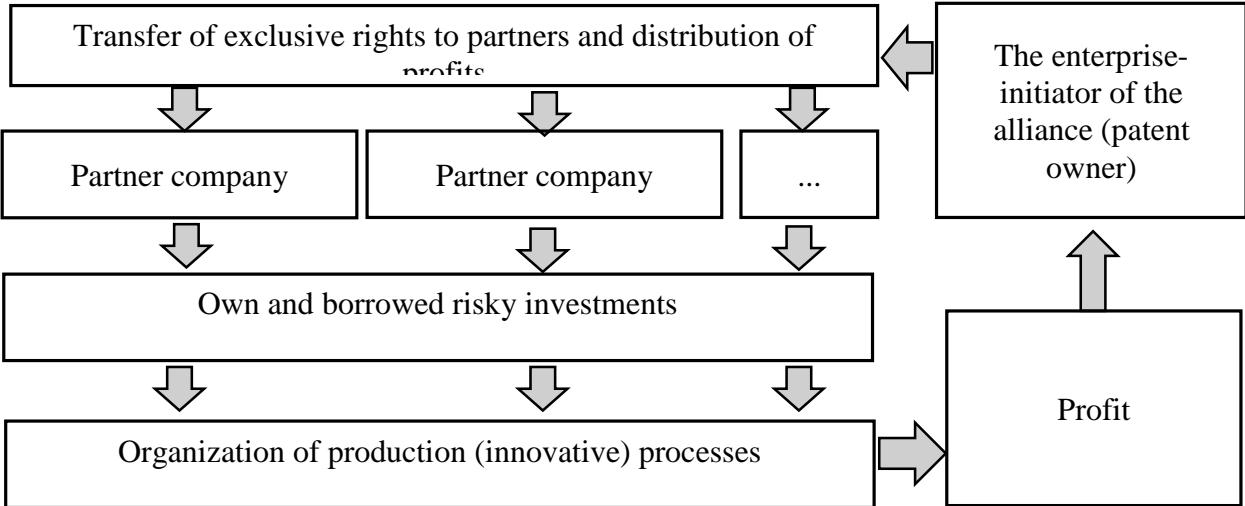


Figure 6. Scheme of the model of commercialization of innovative technologies – "strategic alliance"  
 Source: author's development

This is a very rare type of commercialization, since the vast majority of enterprises in the Ukrainian market are small and medium-sized enterprises that are often not interested in introducing innovative solutions together with other partners. The strategic alliance allows for the development of long-term cooperation, during which the parties

can exchange experience in their fields of activity, but requires significant financial participation of entities, and potential profits from such commercialization will appear much later than in the case of concluding license agreements.

The main advantage of using the model of commercialization of innovative technologies "strategic alliance" for the basic enterprise (an enterprise that implements the rights to intellectual activity) is the separation of efforts and risks with partner enterprises. However, do not forget that the profit is also distributed among the participants in the investment process most often in proportion to the investment (Lobacz & Niedziel, 2015; Trzmielak D.M., 2013).

Usually, the partners of the initiator of the alliance are enterprises from the same industry, competitive, who see advantages in cooperation, for example, the distribution of costs and risks. Alliances arise, for example, in the automotive industry, where competing companies tasked research units to develop, for example, a new part or assembly for them, which companies will then use in their car models. Then a tripartite agreement is concluded, the full participant of which is a scientific institution.

Advantages of commercialization of innovative technologies using the "strategic alliance" model:

- for companies – reducing risk and costs;
- for scientific institutions – search and cooperation with interested companies wishing to commercialize the results of scientific research;
- for scientific institutions – long-term cooperation, full participation in the innovative development and development of their own research;
- the real possibility of mutual learning is universities from enterprises and vice versa.

The disadvantages of this form of commercialization include:

- the need for more parties participating in the commercialization process (including universities) than in the case of a license;
- a scientific institution (for example, a university) usually receives funds later than in a commercialization scenario through licensing;
- the amount of funds received by a scientific institution largely depends on the time spent and the amount of work.

An interesting form of commercialization is the creation of *a joint venture*. A joint venture is created in order to combine the assets of enterprises. A joint venture can also be a form of agreement concluded between the creator (scientist) and the enterprise to which the researcher provides intelligent technology in exchange for market access and joint participation in the profits from the use of technology by the enterprise. For example, an enterprise with created an innovative technology (products), but it does not have the appropriate financial capabilities for its launch on the target market.



The essence of this form of commercialization is the transfer of rights to intellectual property within a joint venture. The main function is to minimize the level of entrepreneurial (commercial) risk and production costs (Fig. 7).

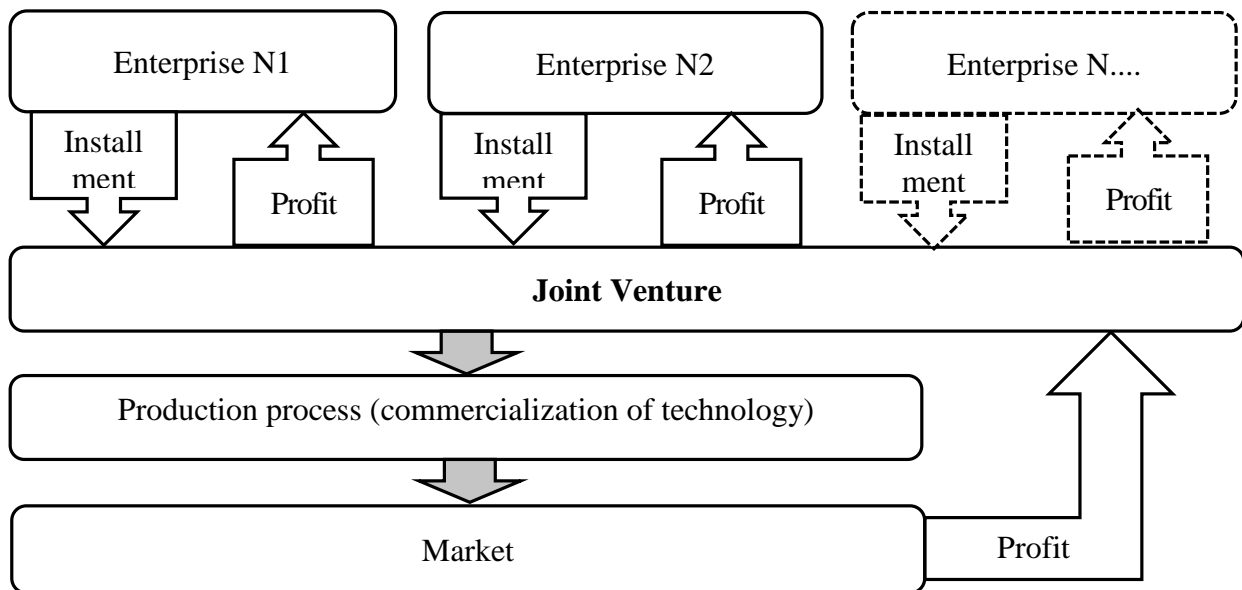


Figure 7. Scheme of the model of commercialization of innovative technologies – "joint venture"

Source: author's development

A joint venture can be a form of commercialization of separation, however, according to its "pure" formula, both parties usually always make contributions in cash (rather than property).

The advantages of this form of commercialization include:

- joint costs and risks of both parties;
- the possibility of entering new markets, reducing implementation costs;
- in case of failure, each party retains the rights to its share of the intellectual contribution;
- financial costs are distributed among partners in the joint venture;
- using existing premises with partners can reduce costs;
- the possibility of mutual learning.

The disadvantages of this form of commercialization include: [r1r1]

- the need to coordinate decisions by both parties;
- profits should be distributed among partners;
- long-term interests of partners may not coincide;
- possible inconsistencies in different corporate cultures in companies;
- the decision-making process may be delayed;

- joint responsibility of the scientific institution / researcher for the entire process of commercialization;
- large participation from a scientific institution or researcher is required.

The process of commercializing innovations using dedicated enterprises in the form of spin-off or *spin-out* requires separate discussion due to differences in definitions. It is generally accepted that a dedicated company is a *knowledge/technology-based* enterprise founded by individual scientific institutions or organizations from the academic community. Under such persons here are understood mainly as academic or scientific-pedagogical workers, at best - graduate students, students or doctoral students. Universities can also carry out the process of commercialization, creating separate or segregated enterprises. Due to the fact that the separated company is a subsidiary, it is necessary to create a sole company called a special company. As part of its own contribution, the university's trust fund contributes intellectual property or other achievements of its scientific activities to the separated company, becoming its shareholder. The university, as part of the allocated shares, can also contribute infrastructure, which allows the development of technology, but with such a contribution it is advisable to evaluate the contribution of the university by the market method.

A dedicated enterprise is defined as a process aimed at expanding the scope and application of the technology that has already proven its effectiveness in practice and urgently needs to be commercialized (Żebrowski Paweł, 2018). The methodological content of the selected enterprise illustrates the pic. 4, from which it follows that the technology initiates the creation of a new product. In this case, there is a phenomenon of the so-called "technological push", since technological development is ahead of design development, but it is precisely this task that is solved in the process of using the selected enterprise, when, on the basis of the application of the developed technological principle, a new product is born.

Methodological provisions of the organizational support for the functioning of the process of commercialization of technologies using a dedicated enterprise provide for the participation of at least four parties: the developer, the research organization (university), the entrepreneur, the venture investor. Their interaction is provided by a specialized (dedicated) enterprise. The scheme of this interaction is presented in Fig. 8.

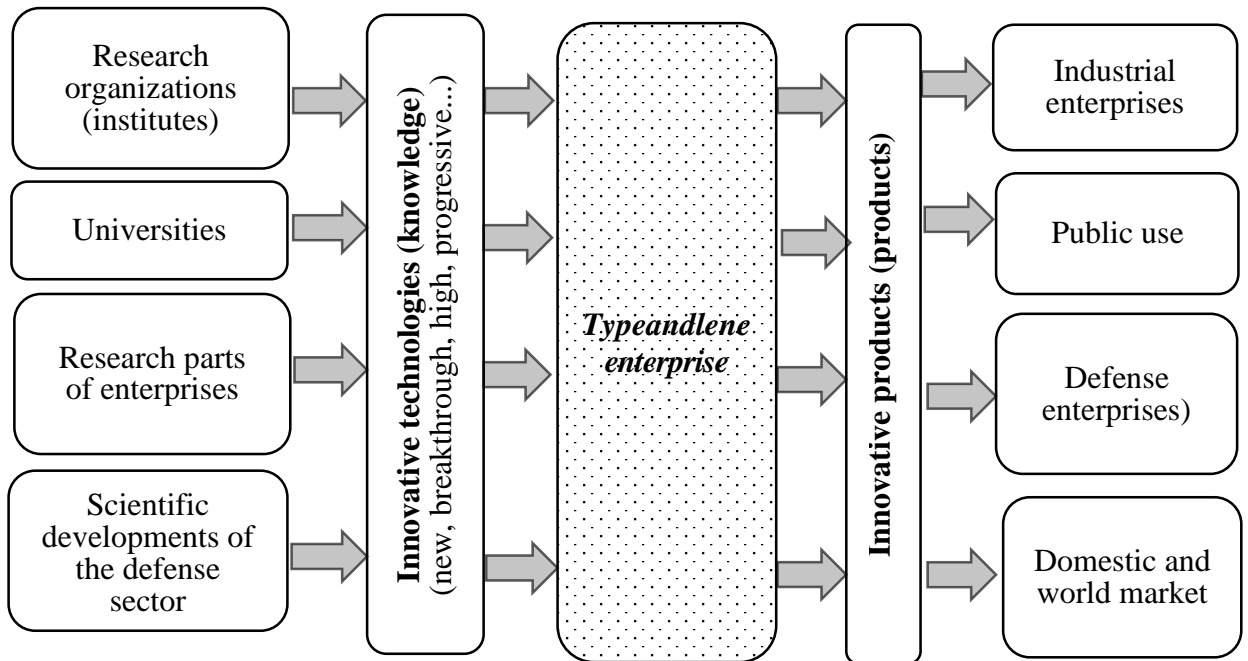


Figure 7. Methodological content of the method of commercialization of technologies using the selected enterprise

Source: Built by authors

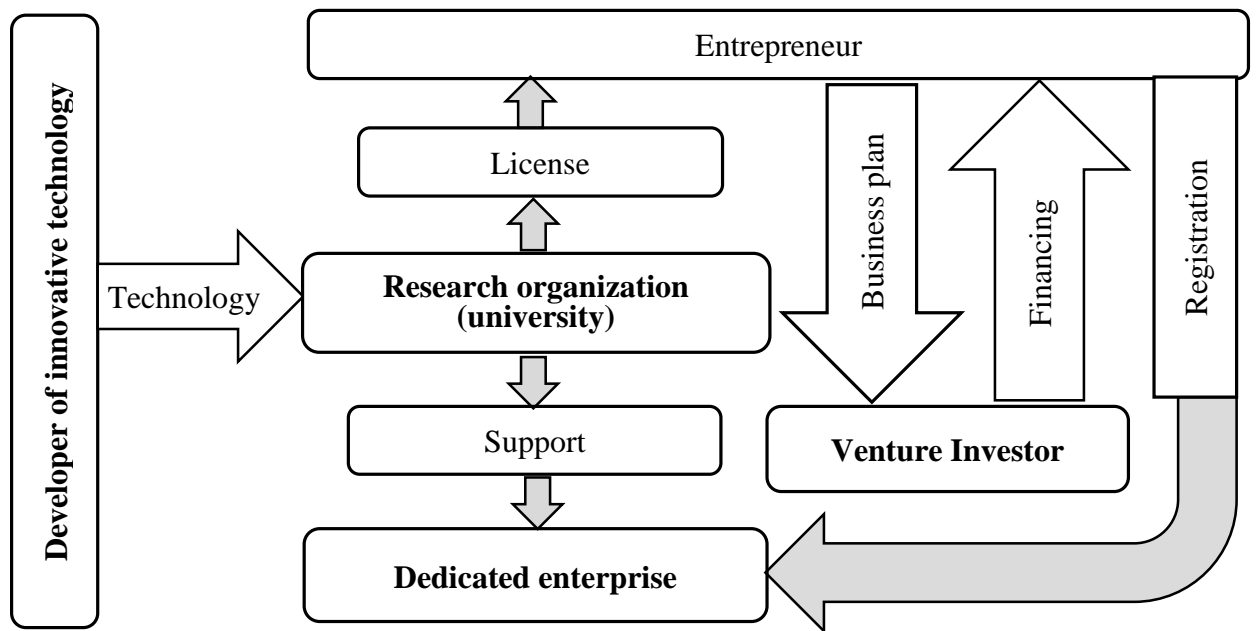


Figure 8. Organizational principles of the commercialization of technologies using a dedicated enterprise

Source: Built by authors

In the scientific literature on this issue, one can find situations where in one publication the definition of a selected enterprise is given in the form of spin-off, and in the other – the same definition is used to describe the selected enterprise in the form of spin-out. Deepening the topic, it is necessary to carefully check what type of enterprise the selected enterprise belongs to.

Spin-off enterprises are descendant enterprises that stand out from the parent enterprise for the purpose of independently developing, mastering and introducing a new product or technology to the market. Enterprises of this kind are most often created by transforming a division of a company into an independent enterprise.

Spin-out companies largely resonate with the model of organizing spin-off companies. Spin-out firms stand out from the parent company, but retain close ties with it, unlike spin-off companies that are given great freedom of action, the ability to independently produce a new product or organize its production. Spin-out companies retain control by the underlying enterprise (scientific organization), which created them in terms of financial and operational ties. This may be financial control, administrative services, support in the field of management, advisory activities.

The developer of an innovative technology represented by an individual scientist, engineer or group of specialists working at a university or research organization acts as the main actor, since he carries out an innovative process and brings the technology to the stage of readiness for industrial use. The research organization (university) is responsible for the protection of intellectual property, while providing the entrepreneur with legal access to an intellectual resource, providing premises, equipment for the development of a prototype and the launch of the production of a product that embodies a new technology. The entrepreneur registers and manages the allocated enterprise for the production of the newly created product. Venture capital investor – venture capital firm – provides financing an innovative project in exchange for a portion of spin-off company shares. However, in practice, the distribution of responsibilities does not always fit into a typical scheme: developers most often assume the functions of entrepreneurs, registering and managing a spin-off company; a research organization can be in the role of a venture investor, financing a project.

In the *spin-off model*, it is necessary that the university establishes a special organization in the form of a limited liability company or joint stock company whose task will be to acquire shares of the target allocated company on behalf of the university. If we assume that the allocated enterprise will be based on a patent, in this scenario the university transfers ownership of this patent to a special purpose enterprise, and then it makes the right ownership of the separated enterprise, becoming its shareholder. The next shareholders are private, venture or other investors who provide funds for the development of the enterprise. The author of the technology makes a profit, for example, through dividends (in accordance with the current rules at each university on intellectual property rights), which the allocated company pays to its shareholders. In this model, it is the university (as a shareholder of a separate company) that is obliged to prepare the technology for implementation, and the university also has the right to dispose of this technology. The university can also be associated with a dedicated enterprise in other

ways, for example, in exchange for a portion of the company's shares, it provides it with its research infrastructure for technology development purposes.

In the *spin-out* model, the presence of a dedicated enterprise is not even mandatory. The scientist agrees with the university on the conditions for granting him, as an individual, a license to use this property right, which he then, having concluded a license agreement with the university, provides in material form to the target allocated enterprise. Thus, the shareholders of the allocated enterprise are the scientist (as a person who has the right to dispose of the property rights of the university) and investors. Most often the scientist "calculates" with the university, transferring to him the appropriate license fees for the right to use innovative technology.

Depending on the level of development of technologies and decisions of the university, a scientist may be required, for example, to evaluate technology (an assessment of ownership is recommended). Similar to the licensing model, the recommended assessment of technology is carried out according to the "university-scientist (researcher)" scheme.

A dedicated enterprise in the form of spin-out often has important tax issues - the transfer of rights to the results of research work (non-cash contribution in a form different from that accepted at the enterprise or organized part of the enterprise) to a scientific enterprise, which is a legal entity, leads to profit for the scientist. The amount of this income is defined as the nominal value of shares purchased from the underlying enterprise for the corresponding monetary installment. On the other hand, contributing to a partnership is a neutral activity under the Personal Income Tax Act. This means that only a contribution to the company will not lead to the fact that the scientist will receive income in the form of personal income tax.

The advantages of the commercialization of technologies using a dedicated enterprise, in our opinion, include:

- the possibility of a basic scientific organization (university) to participate in profits - having a share in a separate enterprise, a scientific organization becomes a full shareholder and can participate in the distribution of dividends. legal principles, however, require that all profits received by the allocated enterprise, which will be transferred to the underlying organization as a partner (or shareholder) of the allocated organization, be directed to its statutory activities and subject to income tax;

- the presence of a certain control over the object of in-kind contribution – the basic scientific organization has the opportunity to influence the decisions made at the selected enterprise;

- academic spin-enterprises are subsidiaries that are created by employees or graduates of the university who have received scientific developments within the walls of this university, while the rights to the received intellectual property also belong to the university;

- university research groups better understand the inventions, technologies, scientific developments that need to be promoted to the market. a competent business team within the newly created enterprise is able to turn it into an efficiently working one, which is able to bring commercial results;

- financing of university spin-enterprises is improved partly at the expense of university funds to support small innovative enterprises, through budget financing, in particular, through grants provided to young scientists, by attracting venture funding;

- there is a real opportunity to support the activities of spin-enterprises in the early stages of their existence through direct financial assistance, the provision of premises and special equipment of the parent enterprise on preferential terms;

- important results of spin-enterprises are effective commercialization of the results of scientific activity, additional income to the budget of the parent enterprise and strengthening the innovation activity of the founding enterprise. the latter circumstance is especially important for universities and scientific organizations seeking to develop their innovation activities;

- the presence of socio-economic advantages, such as the creation of additional jobs, new opportunities for expanding the research activities of the university, etc.

The disadvantages of the commercialization of technologies using a dedicated enterprise include:

- not all scientific organizations of the country need and desire to create a special dedicated enterprise, despite the presence of legislative provisions for this;

- double taxation of income (in the form of income tax) is not excluded: a special-purpose enterprise allocated from the university acquires ownership rights from it, receives income, therefore, the university must pay income tax (before entering the natural structure). The same situation occurs in the allocated enterprise itself - when a natural contribution is made to it by an investor or other partners, it must pay tax on the same profit;

- under certain conditions (for example, the amount of annual income), the allocated enterprise may lose the status of a small or medium-sized enterprise, respectively, and a number of benefits that are provided for by the current legislation for such enterprises;

- increased level of commercial risk, for the failure of the project to create a separate enterprise are directly borne by the researcher and other partners of the selected enterprise;

- formally, there is no direct (mandatory) support from the basic university. There is the possibility of only indirect support, decisions are made directly by the researcher (author of innovative technology) together with other partners. Possibility of cooperation with the basic university on a commercial basis;

- in practice, the distribution of responsibilities does not always fit into a typical scheme: developers most often assume the functions of entrepreneurs, registering and managing a spin-off company; a research organization can act as a venture investor, financing an innovative project;

- to ensure the effective commercialization of technologies, it is necessary to improve the overall legislative framework in the field of innovation of academic structures. In particular: in terms of improving the realization of intellectual property rights; granting ownership rights to intellectual property obtained as a result of research by universities and research organizations at the expense of public funds; introduction of regulations for public-private partnership in the field of innovation; development of stimulating regulations in the field of public-private partnership regulation in state research institutes and universities on the creation of spin-off and spin-out enterprises ; it is necessary to eliminate the contradictions of the legislative framework in terms of regulating the activities of small businesses, in particular, in terms of the transfer of property, specialized equipment, production areas to newly created separate innovative enterprises.

All the above models of commercialization of innovative technologies are risky. Their level on an arbitrary scale from "1" (the lowest level of risk) to "5" (the highest level of risk) can be represented as follows, as shown in Fig. 9.

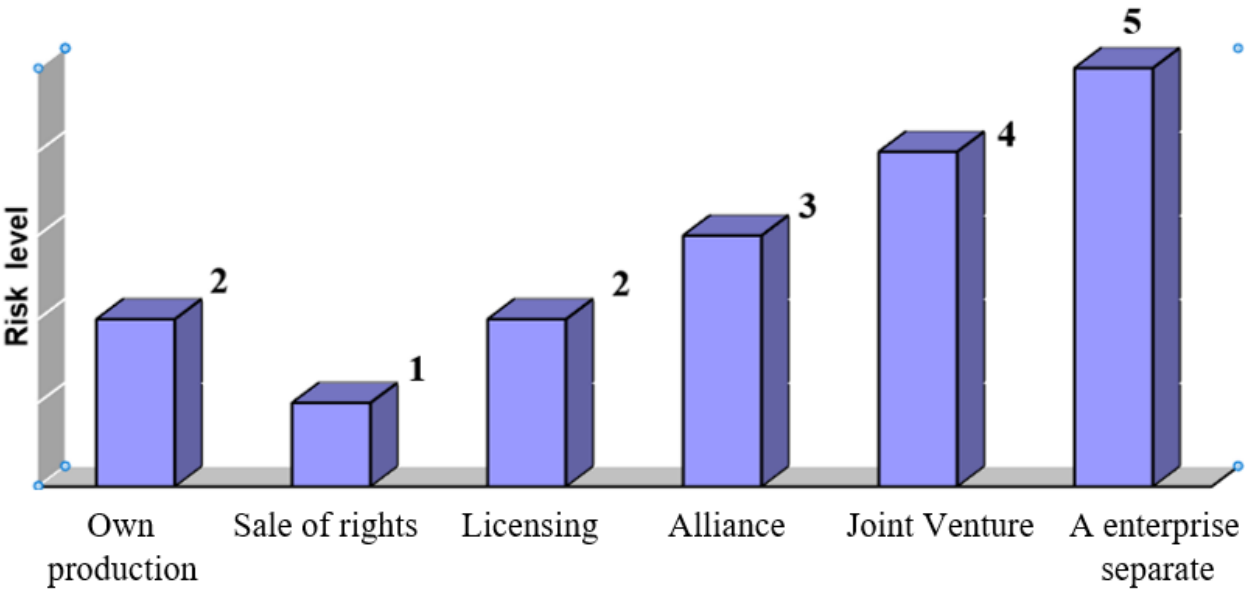


Figure 9. The level of commercial risk of various models of commercialization of innovative technologies

Source: constructed by authors using (Żebrowski Paweł, 2018).

The sale of property rights is the least risky, since in most cases it is a one-time exchange of money for technology. Licensing is a higher level because there may be no charge for the license. The Alliance has a greater degree of uncertainty as it involves more than two partners. In the joint venture model, a new entity is created, which must be further stabilized in terms of marketing in the market. Dedicated enterprises in the form of spin-off or spin-out are characterized by the highest risk, mainly due to tax issues and responsibility for the fate of the new enterprise, as well as due to the presence of problems in ensuring investment activities in the development of the selected enterprise.

Effective commercialization in the form of a dedicated enterprise is possible with the appropriate legislative support, which also implies the introduction of certain changes to existing legal provisions. One of the proposed changes is to ensure the broader rights and opportunities of scientists (researchers), which would be that scientists, not a university, would formally be owners of the technologies they invented. In the case of commercialization, they will be required to give to the university, for example, 25 or 30% of the income from commercialization (depending on whether their university supported them in the process of commercialization or removed from this process). However, these changes do not provide an answer to several basic questions, for example, who will be responsible financially, the university or the scientist for the legal protection of the invention, the conduct of the assessment, the possible responsibility for unsuccessful negotiations, etc.

Commercialization of property rights is a complex topic, and many agreed factors are needed for its proper implementation – successful negotiations, appropriate legal support or an effective university management apparatus. However, this complex process can pay off to all parties financially in a relatively short time - technological investments with a high degree of risk, if successful, offer a very high rate of return.

The main result of the study may be the conclusion that the planning and management of innovative activities is the goal of applying innovative models or commercialization models. It should be noted that each of the considered models of commercialization of innovative technologies has its own certain advantages and disadvantages, which, for the most part, is manifested in the amount of the commercial result (profit), the cost of the commercialization process and in the points of responsibility for the conduct of the innovation process. In the future, it is necessary to compare the models of commercialization of innovative technologies with the capabilities of production and commercial industrial enterprises and assess the potential potential for their practical use.

At the same time, their use will allow to effectively display innovative technologies and products of the market due to the fact that the innovation process will be optimized. Formation and implementation of innovative business models of commercialization of intellectual property (products and technologies) in modern conditions will significantly



increase the economic stability and efficiency of innovative enterprises, significantly reduce the number of "unsuccessful" projects and reduce the amount of "unprofitable" investments. This will create conditions for improving the innovation climate and increasing the innovation activity of enterprises, regions, territories and the country as a whole.

The presented brief description of the models of commercialization of intelligent technologies created in enterprises and organizations indicates relatively large opportunities for technology transfer to industry, which, on the one hand, increases the dynamics of innovation of the economy, and on the other hand, brings tangible financial benefits by developers of intelligent technologies.

Ukrainian universities have significant problems with the commercialization of intellectual property created in them. This is due not only to limited potential, but mostly to the limited interest of the creators themselves in commercialization, the introduction of knowledge or technology into industry. The basis for the development and promotion of entrepreneurship is a change in the mentality of both scientists and the leadership of Ukrainian universities.

An indisputable obstacle to the processes of commercialization of intellectual goods is the lack of coherence of the interests of scientific and business circles. The activity of the creators is often determined by the functioning of the system of both the assessment of the scientist himself and the parameterization of the main organizational units of the enterprise and organizations, the financing of which directly depends on the number of points obtained in the framework of training and research. As a result, the main efforts of stakeholders are often focused primarily on publishing the results of their research in full-fledged scientific sources. Evaluation of significant value in terms of innovation potential and the possibility of introducing the results of these studies into industry usually does not translate into a qualification of research for publication in professional journals, as well as publications Scopus and Web of Science. Changing this state of affairs can have a significant impact on the topics that scientists consider in their research and on the search for topics in which the industry is directly interested. Please note that most of the research conducted by scientists is funded from public funds, which have one-time recommendations for their use, which often leads to the implementation of long-term projects that, due to market dynamics, cannot meet the needs of entrepreneurs.

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## 2.4. FEATURES OF CHOOSING A FORESTRY ENTERPRISE DEVELOPMENT STRATEGY

The strategic management, as an important process of management decision-making, aims to guarantee the development of an enterprise by providing innovations in its organizational structure. The applied aspects of strategic management have changed significantly in recent years, due to changes in the world economy and the emergence of new approaches to conducting business.

The strategic management is based on key goals and ideas, the achievement of which is the goal of the enterprise development. To fulfill the tasks set by the management, it is important to choose the right methods, tools and technologies of management. The methodology of strategic management (*Vasylenko, V.O., Tkachenko T.I. (2004); Taran-Lala, O.M., Sukhoruk, K.V. (2021)*) is a set of principles, specific methods of decision-making and tools for their practical implementation, allowing the enterprise to rationally use its potential and take into account the requirements of the external environment in the process of achieving goals.

In recent years, the issue of reforming the forestry sector in Ukraine is particularly relevant, because the changes taking place in society, technological processes and even the environment require dynamic organizational and structural shifts. An effective direction of the solution is the development and implementation of the State Forest Management Strategy of Ukraine until 2035, which defines strategic goals and ways to implement them in order to ensure sustainable management of forestry and hunting.

Scientists Ansoff I.H., Vasylenko V.O., Ignatieva I.A., Kuzmin O.E., Martynenko M.M., Miziuk B.M., Petrovych Y.M., Tkachenko T.I., Kharchenko V.A., Cherchyk L.M., Ocampo M., Gomatesh R.M., Poornima M.C., Sanosa A.R., Yamagishi K. are engaged in the study of theoretical and applied aspects of strategic management. The features of sustainable management in the field of forestry are studied by Antonenko I.Y., Deineka A.M., Lytsur I.M., Mishenin E.V., Soloviy I.P., Khvesyuk M.A., Yarovaya I.E., Jonsson, A.M., Kajanus, M., Kurtilla M., Kangas, J. Leskinen, P., Müller U., Tarasewicz, N.A. Today, there is no single approach to strategic management, since the conditions of both internal and external environments are dynamically changing and decision makers must respond to the changes in a timely manner.

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The goal is to study the essence of the concept of strategic management, to define the principles of management, to create an algorithm for developing the enterprise strategy, to study the features of the state and development trends of a forestry enterprise and to search for effective strategies and substantiate the practical recommendations for their implementation.

The domestic and foreign scientists have different points of view on the interpretation of the concept of strategic management. The main definitions are presented in Table 1.

Table 1

Theoretical approaches to the definition of “strategic management”

The Author	Definition
Igor H. Ansoff	The activities related to defining the goals and tasks of an organization and ensuring the relationship between the organization and the external environment that meets its internal capabilities and allows it to remain adaptive to external requirements.
Vasylenko V.O., Tkachenko T.I.	It is not only a set of concepts, approaches and methods, but also a complex system, which is a dynamic process of analysis, choice of strategies, planning, provision and implementation of the developed plans by an organization and involves a repeating cycle of solving the main tasks.
Gleidel D. Hatten S.	The process of determining and establishing the relationship of an organization with the external environment by achieving the selected goals and the desired relationship with it, the allocation of resources for effective and result-oriented actions of the organization and its units.
Martynenko M.M., Ignatieva I.A.	It is a set of specific decision-making processes regarding the formation of the goal and defining the objectives of an organization, the choice of strategies for its activities and the use of resources in the market environment, which ensure their implementation.
Thompson A.A., Strickland A.J.	A multifaceted, formally behavioral management process that helps to implement effective strategies that contributes to balancing the relationship between an organization and the external environment to achieve goals.
Shershneva Z.E.	It is the implementation of the concept that combines the target, systemic, situational and integral approaches to the activities of the enterprise and allows setting the development goals and comparing them with the existing capabilities of the enterprise, developing and implementing a system of strategies.

*Notes. Generalized by the authors based on the results of the literature (Vasylenko, V.O., Tkachenko T.I. (2004); Deineka A.M. (2009); Kish, L.M. (2019))*

In our opinion, it is quite difficult to formulate a definition of strategic management that would meet all the listed characteristics and conditions. Having analyzed the table 1, it is safe to say that the proposed definitions of the authors focus only on certain aspects and features of management.

The strategic management of the enterprise development is carried out with the aim of achieving the desired result based on the observance of a number of principles (Cherchyk, L.M. (2017); Kharchenko, V.A. (2014)), the key ones are shown in Fig. 1.

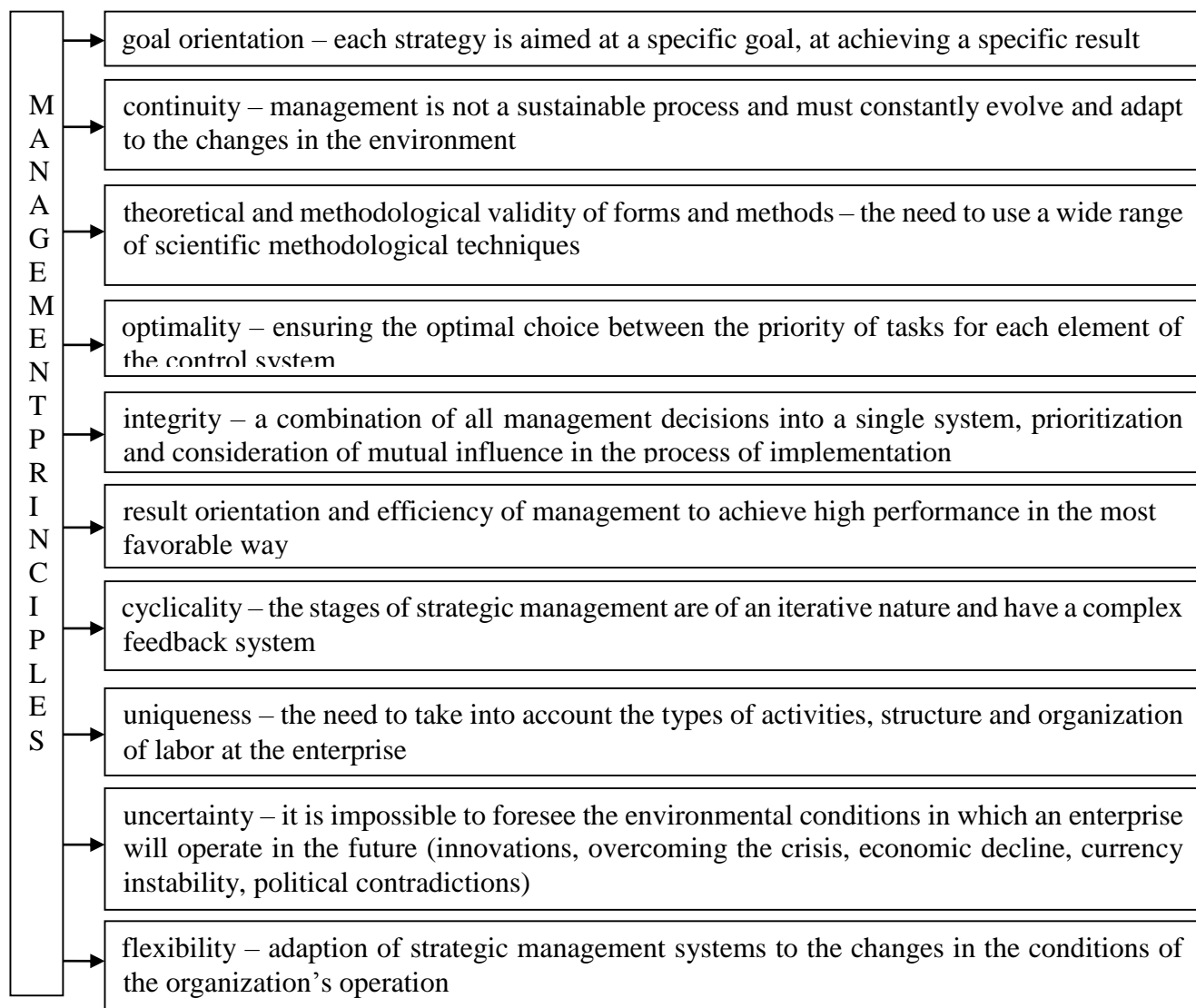


Figure 1. Strategic management principles

Thus, as confirmed by the characteristics of the main principles of strategic management, the enterprise management should be aimed at promoting its offers in the market, searching for unique characteristics of the main types of products and increasing the share of added value. This approach allows implementing large-scale programs and projects and finding new, more effective ways to solve the problems in the enterprise.

The selection and evaluation of performance indicators of the enterprise is of great importance, since it allows a reasoned approach to the choice of the optimal strategy. The set of alternative scenarios for the development of the enterprise forms a "strategic set", i.e. a system of strategies of different types that reflect the specifics of the enterprise's operation, as well as the level of its competitiveness in the market.

The strategic management system of an enterprise depends on the interaction of a number of factors, namely industry affiliation, enterprise size, level of specialization, concentration and cooperation, characteristics of production potential, type of production,

staff qualifications, available scientific and technical potential, management development level, etc.

In practice, the strategic management is based on such methods and approaches as systemic, integrated, situational, functional, integration, normative, quantitative and marketing (*Vasylenko, V.O., Tkachenko T.I. (2004)*). The domestic and foreign scientists attach a different meaning to the concept of strategic management and, therefore, have their own vision of the algorithm for developing the strategy for the enterprise operation.

To maintain flexibility and adaptability in a dynamically changing competitive environment, enterprises are forced to develop and implement more reliable strategies, which should ensure (*New EU Forest Strategy for 2030; Matveev, M., Shvediuk, I., (2022); Miziuk, B.M. (2006)*):

- determination of a unique goal or area of activity that forms a common goal and directions of development of an enterprise;
- specification of sub-goals and corresponding resource support, optimization of the strategy implementation technique;
- search for integration opportunities defined by the market environment and the internal potential of an enterprise;
- elimination of potential threats to enterprise's activity, taking into account the successful experience of European countries.

The consideration of external environment factors, the impact of which on the enterprise's activity is variable and unstable, is mandatory for the creation of the company development strategy. The algorithm for creating the enterprise development strategy is shown in Fig. 2.

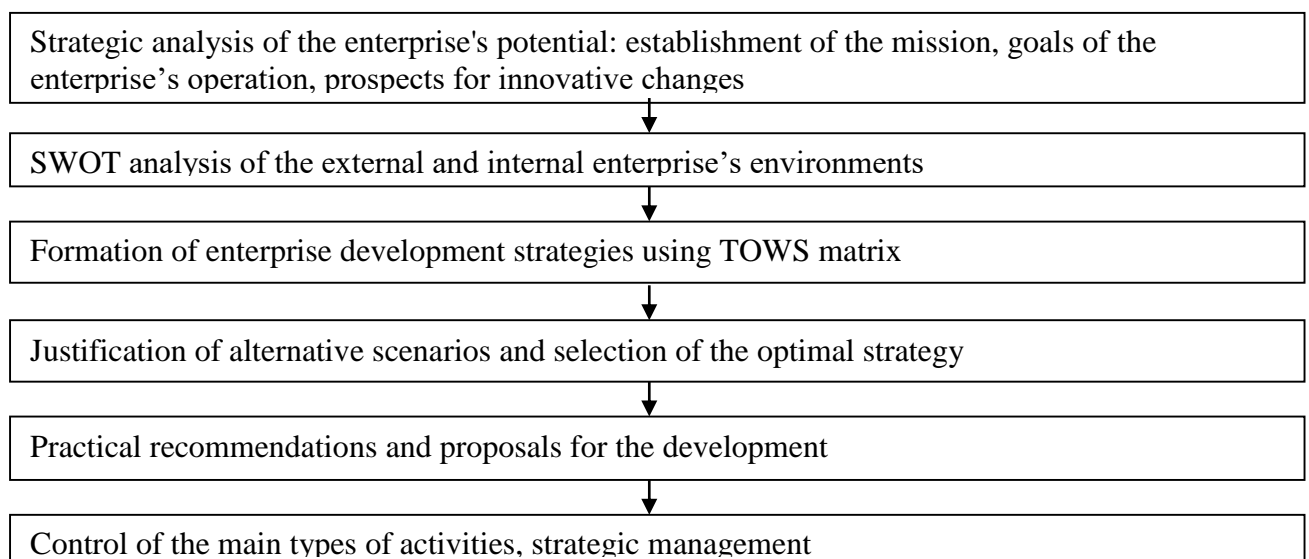


Figure 2. The algorithm for creating the enterprise development strategy

The key factors affecting the formulation of the strategy of a forestry enterprise are determination of the key parameters of the enterprise's operation in the context of reforming the forestry, generation of alternative development scenarios and evaluation of potential results of managerial decisions.

The suggested algorithm is based on the observance of key management principles. It will allow achieving the desired result and ensuring a successful operation of an enterprise in the long term. An effective tool for developing the enterprise development strategy is SWOT analysis (*Kajanus, M. et al. (2012); Kovalčík, M. et al. (2013); Shvediuk, I. (2018)*): one of the analytical techniques that helps to assess the four important aspects of the enterprise's operation.

SWOT analysis involves an expert diagnostics of the environment to identify trends in its development, formation of basic hypotheses about the prospects of an enterprise and its competitive capabilities and identification of alternative directions for strategic development. This tool examines both internal (strengths and weaknesses) and external (opportunities and threats) factors (table 2).

Table 2

The advantages and disadvantages of SWOT analysis

The advantages	The disadvantages
periodic monitoring of the market and enterprise resources	quite poor adaptation to a constantly changing environment
systematization of knowledge about internal and external factors affecting the process of strategic planning	subjectivity of the choice and ranking of factors of the external and internal environment of an enterprise
determination of competitive advantages of an enterprise and formation of strategic priorities	weak support for making specific management decisions

Strengths are certain features that provide an enterprise with additional opportunities. Weaknesses are characteristics that place an enterprise at a disadvantage; lack of key aspects of its successful operation. Opportunities are prospects that open up for the enterprise in the future. Threats are challenges and limitations that may be faced by an enterprise.

The main tasks of SWOT analysis (*Gomatesh, R.M., Poornima, M.C. (2012)*): identification of possibilities of the external environment that correspond to the enterprise's resources; identification of its threats and development of measures to eliminate or reduce their impact; identification of strengths of the internal environment and comparison with market opportunities; analysis of weaknesses of the enterprise's activity and development of measures to overcome them; determination of competitive opportunities and formation of strategic priorities.

When conducting a SWOT analyses following rules are suggested (*Simkin, L., Dibb, S. (2001)*):

1. It is necessary to define thoroughly the scope of each SWOT analysis. Focusing the SWOT analysis on a specific segment will ensure the identification of its most important strengths and weaknesses, opportunities and threats;

2. The clear differences between SWOT elements should be recognized. Strengths and weaknesses are internal features of an enterprise; therefore, they are under its control. Opportunities and threats are associated with the characteristics of the market environment and are not subject to the influence of an enterprise.

3. Strengths and weaknesses can only be considered as such if they are perceived as such by the customers. They should be ranked according to their importance to the customers.

4. It is reasonable to use variable incoming information: SWOT analysis should be based on objective facts and research data.

5. Ambiguous statements should be avoided: the more precise the wording, the more useful and effective the analysis will be.

Based on the results of the SWOT analysis according to the algorithm, it is recommended to build a TOWS-matrix of the enterprise development strategies (table 3), which is aimed at coordinating the internal factors with the external ones and helps to define the appropriate alternative scenarios, which can be used by an enterprise. This will allow the management of the enterprise to understand how to realize the opportunities, reduce threats, overcome weaknesses and enhance the benefits of the enterprise.

Table 3

TOWS-matrix of the enterprise development strategies

	Opportunities	Threats
Strengths	Aggressive strategy	Conservative strategy
Weaknesses	Competitive strategy	Preventive strategy

Let's describe in detail the components of TOWS matrix (*Yamagishi, K. et al. (2021)*):

✓ Aggressive strategy – Strengths / Opportunities (SO) – it uses internal strengths to maximize or make optimal use of external opportunities, available to the enterprise.

✓ Competitive strategy – Weaknesses / Opportunities (WO) – it allows minimizing the enterprise's weaknesses and maximizing its opportunities. This strategy eliminates internal weaknesses by exploiting external opportunities.

✓ Conservative strategy – Strengths / Threats (ST) – it maximizes the enterprise's strengths and minimizes threats using these strengths.

✓ Preventive strategy – Weaknesses / Threats (WT) – it allows minimizing weaknesses in order to avoid possible threats.

The mechanism of strategic management of an enterprise is a set of comprehensive measures covering the definition of strategic goals, features of the production process, necessary material and financial resources and human capital in a certain period of time.



The analysis of the collected information made it possible to develop a mechanism for implementing the development strategy for a forestry enterprise (fig. 3).

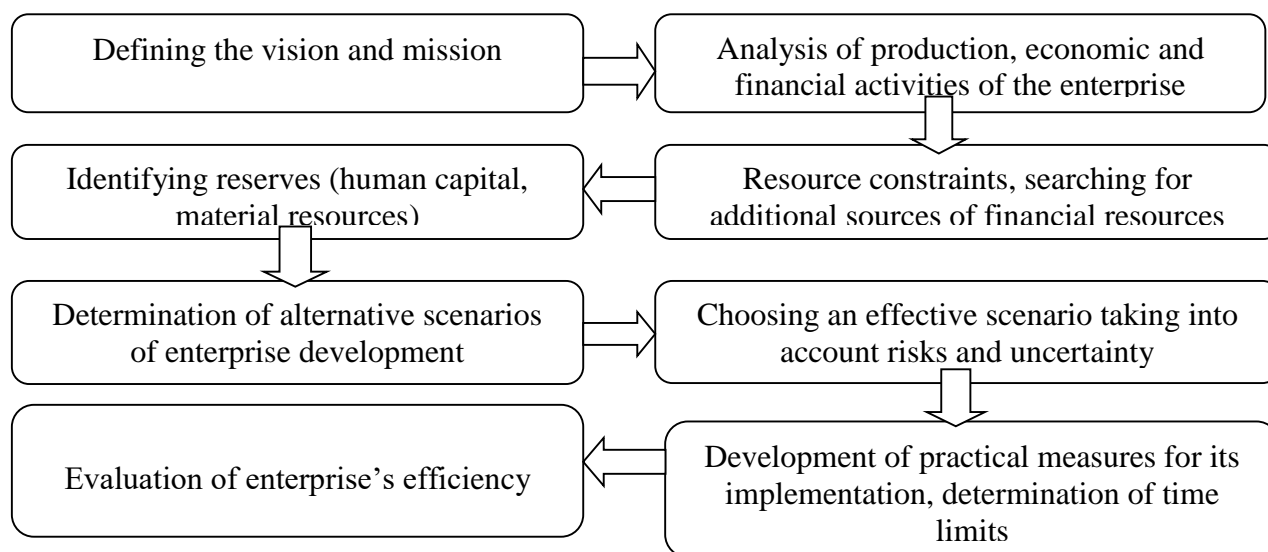


Figure 3. A mechanism for implementing the enterprise development strategy  
*Notes. Generalized by the authors based on the results of the literature (Deineka A.M. (2009); Cherchyk, L., Cherchyk, A. (2019))*

Lviv Forestry State Enterprise was selected as the object of the study. The main indicators for assessing the financial condition and profitability of the enterprise are given in Tables 4-5.

Table 4

The indicators the liquidity and the financial condition:  
 Lviv Forestry State Enterprise case study

Indicator	2019	2020	2021
Current liquidity ratio	1,17	1,50	1,52
Absolute liquidity ratio	0,04	0,06	0,57
Critical liquidity ratio	0,59	0,81	1,04
Current assets ratio	0,15	0,33	0,34
Financial stability ratio	1,97	1,59	1,70
Financial independence ratio	0,51	0,63	0,59
Debt ratio	0,49	0,37	0,41
Current assets to equity ratio	0,17	0,30	0,36

The analysis of Table 4 shows that the current liquidity ratio increased from 1.17 to 1.52 (corresponds to the normative value) during 2019-2021, which indicates that the company is able to cover its current liabilities in a short period of time. Analyzing the absolute liquidity ratio, we observe an insignificant amount of monetary funds and their equivalents in 2019-2020, however, in 2021, they make up 57% of current liabilities, which indicates the positive dynamics of the company's activity. The estimated values of

the critical liquidity ratio show that the solvency of Lviv Forestry State Enterprise increases.

The financial stability ratio for the period under study decreased (from 1.97 to 1.70), which indicates an increase in the share of own funds in the financing of the enterprise. The financial independence ratio of Lviv Forestry State Enterprise increased in 2021 compared to 2019, which proves the increase in the company's independence from external creditors.

The debt ratio decreased from 0.49 UAH/UAH to 0.41 UAH/UAH, which indicates a decrease in the company's debt. The current assets to equity ratio correspond to the normative value, i.e. the company's own capital is used to finance current activities.

Table 5

The indicators of profitability of sold products, activity and sales:  
Lviv Forestry State Enterprise case study

Indicator	2019	2020	2021
Profitability of sold products, %	30	36	65
Net profitability of activity, %	7,7	0,4	1,3
Profitability of sales, %	5,9	0,3	0,8
Profitability of equity, %	23	1	3
Profitability of assets, %	12	1	2
Profitability of the enterprise, %	11	1	2

The analysis of return on assets, equity and sales of Lviv Forestry State Enterprise for 2019-2021 (table 5) allows defining the effectiveness of the investment of funds in the enterprise and their rational use. The profitability ratios in 2019 confirm the highest level of efficiency in the production, economic and financial activities of the enterprise. The profitability of sold products doubled over the analyzed period, as the scope of providing recreational services was expanded by improving the social infrastructure, arranging the recreation areas and increasing the number of vacationers.

The basis of the proposed mechanism for implementing the enterprise development strategy is a thorough analysis of all types of activities, including financial, production and commercial, investment, marketing, sales, etc.

The proposed algorithm for building the enterprise development strategy (fig. 2) and the mechanism for its implementation (fig. 3) have been tested on the example of Lviv Forestry State Enterprise.

The strategic enterprise management is a set of activities of an enterprise aimed at achieving key development goals and tasks, establishing relationships between an enterprise and the external environment in order to increase operational efficiency and achieve high performance indicators. To this end, it is necessary to adhere to a number of management principles: goal orientation, consistency, uniqueness, flexibility, continuity,

integrity and adequacy of systems. The results of the SWOT analysis of the state and development trends of the object of the study are shown in Table 6.

Table 6

SWOT analysis state and development trends of the Lviv Forestry State Enterprise

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>✓ Good geographical location, state property for forests</li> <li>✓ Increase of the forest fund area, availability of all forests categories, diversity of forest stands species composition</li> <li>✓ Highly skilled employees</li> <li>✓ Available competitive advantages, significant market experience, knowledge of consumer needs</li> <li>✓ Existing resource potential for efficient recreational resources use</li> </ul>	<ul style="list-style-type: none"> <li>✓ Decreasing of forest stands environmental sustainability caused by climate change</li> <li>✓ Deterioration of the forests sanitary condition, drying out, damage by diseases and pests</li> <li>✓ Insufficient financing of forestry measures, low availability to environment-friendly technologies, outdated equipment</li> <li>✓ No marketing department at the forestry enterprise</li> <li>✓ Significant recreational pressure on forests</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>✓ Involvement of additional resources, investments to finance forestry activities</li> <li>✓ Implementation of effective mechanisms for timber sales, the possibility of increasing the consumer's number, access to international markets</li> <li>✓ Implementation of the advanced technologies, experience exchange with foreign partners</li> <li>✓ High level development of the service sector and related industries</li> <li>✓ A well-coordinated system of social support for employees</li> <li>✓ Involvement of different groups of stakeholders in management decision-making, expansion of cooperation</li> <li>✓ Relevance, accuracy and objectivity of information about forests</li> </ul>	<ul style="list-style-type: none"> <li>✓ Economic and political instability in the country</li> <li>✓ Low competitiveness of forestry enterprises and purchasing capacity of the population</li> <li>✓ Negative demographic trends (population decline, high migration abroad)</li> <li>✓ Outdated information about forests</li> <li>✓ Natural disasters and unpredictable cataclysms (storms, windstorms, floods)</li> <li>✓ Low level of citizens environmental culture and awareness, people' negligent attitude to the forest</li> <li>✓ Violation of legislation on the rules of timber harvesting</li> </ul>

Amid the instability of the economic and political situation in the country, the growth of risks in the course of reforming the forestry industry requires taking into account the following three parameters (*Kish, L.M. (2019); Miziuk, B.M. (2006)*):

- strategic environment, which is determined by the conditions of the enterprise's operation, taking into account external factors;
- strategic advantages, which are characterized by lower costs, improved quality of goods and services and increased production efficiency;

- strategic competencies, which are a set of available tangible and intangible resources, opportunities and abilities for the development and implementation of the company's strategy.

According to the SWOT analysis, a TOWS-matrix of alternative strategies for the development of the forestry enterprise was built (table 7).

Table 7

TOWS-matrix development strategies of the Lviv Forestry State Enterprise

	Opportunities	Threats
Strengths	Multi-purpose forest use	Sustainable forest management
Weaknesses	Expansion of the enterprise's activities	Basic strategy

Let's consider each of the proposed strategies in detail. The strategy of multi-purpose forest use is aimed at ensuring the rational use of all types of forest resources. According to the classification suggested by the academician Y.Y. Tunytsia, the four components of forest resources are distinguished: D – timber forest products, M – plant-based non-timber forest products, F – animal-based forest products, R – recreational and other benefits of the forest.

The resource potential of Lviv Forestry State Enterprise allows effective use of three of the considered components, namely the DMR. The implementation of the strategy of multi-purpose forest use involves: rejection of final felling and transition to selection and gradual cutting; formation of mixed uneven-aged forest stands and reduction of the share of even-aged monocultures; harvesting of non-timber forest products (NTFPs) at the industrial level and their further sale through retail outlets that are on the enterprise's balance sheet (for example, Lisovychok store); creation of favorable conditions for the development of tourism and recreational activities, improvement of social infrastructure, arrangement of recreation areas (construction of cabins, gazebos, barbeque places).

According to the definition of the Food and Agriculture Organization (FAO), all forest products are divided into ecosystem, non-timber and timber forest products, which form the integrated forest productivity (FAO (2022)) (fig. 4).

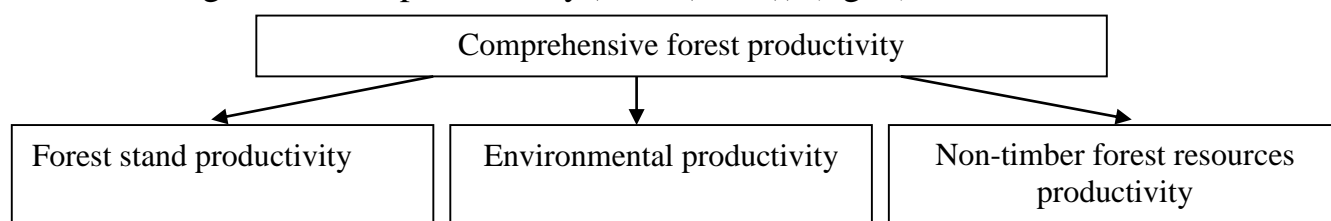


Figure 4. Forest productivity classification

In total, more than 20 groups of goods produced from forest products are distinguished in Ukraine (Ryabchuk, V.P. (1996); FAO (2022)). The most useful of them

are medicinal, food and fodder plants, plants for technical use, wild berries and fruits (blueberries, blackberries, raspberries, mushrooms, rose hip, hawthorn, rowanberries and viburnum), medicinal raw materials, pine resin and birch sap. They are used for manufacture of medical and veterinary drugs, food products, drinks, cosmetics and perfumes, tannins and paints. The forests of Lviv region are rich in various types of NTFPs, a significant part of them can be used without harm to the functioning and development of forest ecosystems. In our opinion, today the procurement of NTFPs at Lviv Forestry State Enterprise remains underestimated from a financial point of view. It includes the beekeeping, tapping of coniferous and deciduous trees, harvesting and processing of leaves, needles, bark, wild fruits, nuts, berries, mushrooms, medicinal plants and technical raw materials.

Non-timber forest products are divided into four main groups (*FAO (2017)*):

✓ potential: the entire biological yield of mushrooms and wild berries. Their number depends on the natural and climatic conditions, cruising characteristics of plantations and periodicity of fruiting. Potential products should be determined centrally according to a single method for each region in terms of enterprises;

✓ exploitable: products of wild fruits and berries that can be gathered, i.e. they are edible;

✓ involved in economic use: a part of exploitable products that can be procured by organized and unorganized gatherers;

✓ actually used: products that are practically used by organized and unorganized gatherers.

There are limiting and stimulating factors that affect the volumes of procurement and sale of NTFPs. The limiting factors include a general access to resources, lack of clear procurement rules at the international, national and local levels, understated fees for the special use of NTFPs, tax evasion due to withholding of objective information about the volumes of procurement and sale, shadow trading and unpredictability of harvests.

The stimulating factors include an objective economic assessment of NTFPs, which depends on the extent of use of this resource by the local population, the availability of clear mechanisms for regulating the fees, certification, access to organic and environmental markets, processing of NTFPs at the local level in order to create added value.

It is also reasonable for forestry enterprises to take into account the peculiarities of NTFPs harvesting (*Ryabchuk V.P. (1996)*):

- The yield of mushrooms and wild berries varies considerably from year to year. In high-yielding years, it is possible to gather mushrooms on the same land 5 times more than in low-yielding years. The fluctuations in berry yield are less noticeable, but they also significantly affect the resources by year;

- The resources of mushrooms and wild berries are unevenly concentrated in the territory. The share of areas where these resources are concentrated in different forest zones, regions and enterprises is not the same, as it depends on the age, density, species composition of plantations, terrain, soils, water regime, etc.;

- The logging and other economic activities have a significant impact on the yield and distribution of wild plants;

- The land where mushrooms and wild berries can be gathered or the so-called raw material zones are located at different distances from enterprises and settlements, and therefore the attendance of the land by the gatherers is not the same. The forest areas of enterprises located in the suburban area within a radius of 20-30 km from the city are so intensively attended by individual gatherers that forestry enterprises located in the suburban area are not able to harvest the NTFPs;

- The mushrooms and wild berries are classified as perishable food products, and therefore, after harvesting, they must be sold or primary processed.

The forestry enterprises are often not interested in increasing the volume of harvesting due to the lack of the necessary organization in the use or implementation of the NTFPs, low level of procurement prices for them, etc. Besides, an increase in the scale of urban planning and the construction of industrial and agricultural facilities also negatively affect the yield of NTFPs. However, as international experience shows, a comprehensive zero use of forest and its non-timber products makes it possible to obtain an average of 2.8 times more profit than from the sale of stem wood alone (*FAO (2022)*). The prime cost of NTFPs is much lower compared to timber harvesting. According to the FAO, about 80% of the population in developing countries use non-timber products intensively for food and medicine purposes. Such goods as honey, nuts, mushrooms, berries and medicinal plants occupy a significant share in international trade. NTFPs harvesting provides large industrial enterprises with raw materials.

The introduction of NTFPs into economic circulation is characterized by a sufficiently high economic efficiency and allows satisfying the various needs of society and ensuring the rational use of forest reserve land. Lviv Forestry State Enterprise has a significant resource potential for harvesting the plant-based non-timber forest products at the industrial level and selling finished goods through retail outlets.

The strategy of forest management based on sustainable development takes into account environmental, economic and social factors in the management process. The development and implementation of effective forestry activities is aimed at adapting to changing environmental conditions and mitigating the negative effects of climate change (*Yarova, I.Y. et al. (2018); Tarasewicz, N.A., Jonsson, A.M. (2021)*). Attracting a wider public to the organization and carrying out of forestry activities, in particular forestry campaigns and environmental education for youth helps improving the environmental culture and raising awareness of citizens.

The creation of additional structural subdivisions on the basis of Lviv Forestry State Enterprise, in particular, Bibrka and Zhovkva forestry departments, requires the management to reconsider approaches to the development of the enterprise and build a comprehensive strategy, taking into account the specifics and features of the operation of forestry enterprises, which were previously separate structural units. In particular, an increase in the area of forest reserve and availability of all four categories of forests (forests intended for nature protection purposes, scientific, historical and cultural purposes, recreational, protection and production forests) (*Matveev, M., Shvediuk, I., (2022)*) in the structure of the enterprise allow expanding the areas of activities.

The strategy for expanding the types of activities at the enterprise provides for the effective use of available reserves which were created as a result of the reorganization and expansion of Lviv Forestry State Enterprise. It is advisable to revise a personnel policy of the enterprise with the aim of attracting highly qualified employees to new types of work, in particular, opening of a workshop for processing of low-grade wood, which today is in great demand among the local population, manufacture of new types of products (for example, sawn blanks for Euro-pallets), expansion of markets for wood products and increase in the number of consumers. It is worth paying special attention to the development of marketing activities at the enterprise, expanding the sales markets for manufactured products, actively searching for foreign partners, concluding long-term cooperation agreements, developing a loyal customer base and promoting the manufactured products. Noteworthy is the innovative activity of Lviv Forestry State Enterprise through the purchase and development of the most modern equipment and transition to the use of environmentally friendly technologies in the forest exploitation.

The basic strategy for the enterprise's development is characterized by the current situation at Lviv Forestry State Enterprise. Amid the forestry reform in Ukraine, state-owned forestry enterprises have undergone changes due to reorganization and optimization. The creation of Forests of Ukraine, an integrated state-owned specialized forestry enterprise, is aimed at focusing on planning, coordination and quality control of work based on the experience of the Baltic countries and Poland. The enterprise will be able to attract investments more effectively and introduce new technologies in business process. The State Forest Resources Agency of Ukraine will coordinate and implement the policy in the field of forestry and hunting. It is advisable to entrust the private teams with the function of supervision (forest planting). A particular attention will be paid to the process of reproduction of forest resources, in particular to the processes of reforestation and afforestation. It is important to increase funding of measures for the expanded reproduction of forests to the European level of \$24/ha, while in Ukraine it is only \$0.3/ha.

In our opinion, the optimal strategy for the development of Lviv Forestry State Enterprise is the strategy of multi-purpose forest use, which takes into account the

strengths and capabilities of forestry enterprises. The forests of object under study are located near the regional center. They are subjected to a significant recreational load and require the employees of the enterprise to provide appropriate conditions for organized recreation. It is necessary to take into account the needs of vacationers (health improvement, leisure activities for children in the summer) and the ability of forest ecosystems to recover. In particular, it is necessary to develop nature trails, create information booklets with a description of popular places for recreation, equip routes for walking and cycling, improve social infrastructure, etc. This will allow Lviv Forestry State Enterprise to receive additional sources of financial income and in the future to use the company's funds for the development of other areas of activity.

Improving the environmental culture and awareness of citizens, strengthening control over compliance with the rules of behavior in the forest, in particular, safety during a fire danger season, awareness of vacationers, etc., will help improve the quality of recreational services. The Green Country, the initiative of the President of Ukraine, can be taken as an example of the involvement of the local population and interested parties in the implementation of environmental education activities. 7.5 million trees have been planted in Lviv region since the beginning of the year (*Zhikhareva, V.V., Savelieva, T.M. (2017)*). In 2022, the Forest of Victory spring tree-planting campaign and the Forest of Unity autumn campaign were held, in which employees of state forestry enterprises, administration and students of the Ukrainian National Forestry University, local authorities, youth and activists of public environmental organizations took an active part.

The practical recommendations for the implementation of the optimal strategy for multi-purpose forest use in order to improve the management of Lviv Forestry State Enterprise (*Zhikhareva, V.V., Savelieva, T.M. (2017)*; *Miziuk, B.M. (2006)*; *Cherchyk, L.M. (2017)*):

- ✓ to develop an effective system of indicators for evaluating the effectiveness of strategic management of a forestry enterprise;
- ✓ to involve the public in solving regional environmental problems and discussing management decisions in the field of forestry;
- ✓ to establish cooperation between different groups of interested parties (employees of the enterprise, scientists, representatives of government agencies and non-governmental environmental organizations, residents of local communities, etc.);
- ✓ to ensure forestry management (measures to promote natural regeneration, forest farming, forest tending, felling, forest creation and restoration, wood harvesting in the process of final felling) based on the principles of the concept of close to nature forestry;
- ✓ to promote the development of tourism and recreation;
- ✓ to expand harvesting of non-timber forest products and ensure their rational use at the industrial level;
- ✓ to improve the environmental culture and awareness of citizens;



✓ to create an effective system of accumulating funds for targeted financing of forestry activities and expansion of the enterprise's activities.

**Conclusions.** The subject of the research is the theoretical and methodological foundations for the development and implementation of the strategy for development of Lviv Forestry State Enterprise. The strategic management is a set of specific management decision-making processes for the formation of goals and determination of objectives of a forestry enterprise, the choice of strategies for its activities and the use of resources that ensure the implementation of these strategies.

The state strategy of forest management in Ukraine is analyzed and the main directions of development and their impact on the national economy are studied. The requirements for the development of flexible and adaptive development strategies are summarized, the following key parameters are identified: strategic environment (implementation of modern technologies; attraction of investors; exchange of experience with foreign partners), strategic advantages (expansion of sales markets, the European market entry, sale of certified wood, improvement of social infrastructure, development of recreation) and strategic competencies (qualification of employees; experience in the field of forestry; significant stock of wood of different types).

An algorithm for creating a strategy for the development of a forestry enterprise is suggested and effective tools are described, namely SWOT analysis and TOWS matrix. This will help to better identify the strengths and weaknesses of an enterprise, as well as opportunities and threats for it.

The content of the mechanism for implementing the enterprise development strategy is defined and a sequence of organizational stages is proposed. To implement the mechanism, it is advisable to identify promising areas and formulate a vision and mission. The vision statement describes what a company desires to achieve and where it wants to be in the future. The mission statement describes the company's reason for existence, which determines the impact it wants to have on the market. The main areas for implementing the enterprise development strategy: strengthening the existing and creating new competitive advantages; expansion of cooperation, search for foreign partners; development of a long-term action plan; availability of financial opportunities for the implementation of the planned measures.

The practical recommendations for improving the management of the enterprise's activities have been substantiated, in particular, it is advisable to further develop recreational activities, open a low-grade wood processing shop, harvest non-timber forest products at an industrial level, search for new sources of financial income, and involve all interested parties in the discussion and management decision-making.

The proposed alternative development scenarios are complementary and can be implemented in the long term after eliminating weaknesses, reducing the impact and mitigating the negative consequences of global environmental threats. Therefore, in the

management decision-making, the management of Lviv Forestry State Enterprise should consider alternative development strategies, perform the comparative assessment of them and choose the most appropriate one.

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## 2.5. STATE AND PROSPECTS OF THE DEVELOPMENT OF DOMESTIC BUSINESS AND MARKETING COMMUNICATIONS IN THE INTERNET ENVIRONMENT

The rapid pace of NTP in all spheres of the national economy, the demands of time and the problems of society make it necessary to use new ways of doing business in order to make a profit and meet the needs of consumers.

The main link in the process of exchanging goods, information, establishing connections and implementing business processes today is the World Wide Web - the Internet. Practically all subjects of entrepreneurial activity focus on the implementation and development of Internet connections in order to establish effective work. Quite a lot of enterprises advertise, provide consulting, disseminate information about the enterprise and products, and offer invitations to cooperate only through the Internet.

As a result, the functioning of any business is impossible without the use of the Internet environment. The emergence of e-business, e-commerce, e-marketing and other components of the Internet environment testifies to the positive trends in the development of the national economy and the current directions of its implementation.

Now, after entering the new millennium and the era of Internet development, it is almost impossible to separate business itself from information technology.

The Internet is considered to be the most attractive business environment at the moment, as it is characterized by a fairly low entry threshold for new market participants, but offers a wide range of work areas. An important advantage is that you can carry out your activities from anywhere in the world, provided that all work processes are clearly developed. It is most appropriate to use the Internet as a business resource for entrepreneurs.

Modern Internet business can work in the following areas (Biznes):

- trade, i.e. sale of goods;
- offer of services;
- business on traffic (sites).

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The development of the Internet raises the situation with the organization of production to a qualitatively different level. In particular, the development of e-commerce, for example, makes it possible to get rid of the sales infrastructure almost completely. That is, it is not about facilitating or simplifying the work of a sales manager by providing him with this or that information faster, in a large volume, etc., but about eliminating such a position as a sales manager. The buyer himself can get all the necessary information on the company's website and immediately pay for the goods. Thus, not only the organizational structure of the company is changing, but also the entire direction of its economic activity (Nuzhna, 2020).

For example, in the United States, the mode of the business environment through the network is the main mode of operation, which allows employees to save time on the way to work or home, rent an office, etc. Two directions of using the Internet are becoming the most attractive for entrepreneurs - Internet for business and business to Internet.

The Internet for business is common and traditional and provides a reliable and cheap exchange of information. As a rule, it is suitable for companies in which the basis of work is communications. Conducting a successful product policy on the Internet depends on the characteristics that form the attractiveness of the product and the demand for it. The emergence and development of the Internet, the improvement of information technologies, systems, and their constant interaction lead to the emergence of a new direction of business - electronic business, which is implemented through the introduction of information and communication technologies into all business processes.

The combination of information resources and analytical information about the resources of Internet use in the business environment allows:

- to ensure decision-making and selection of preferences in the economic policy of business;
- ensure operational management of market resources;
- to contribute to the increase of turnover;
- to reduce non-productive expenses for registration and support of trade agreements and business operations;
- ensure arbitration of business operations;
- ensure connection to international information and business systems (3).

As a rule, business in the Internet environment is carried out in the following directions - table 1.

Table 1

## Business directions in the Internet environment (Biznes)

Direction	Characteristics
Online stores	The same classic store, only almost all of its activities are conducted in the online environment. The website of the online store should contain a product catalog and give the visitor the opportunity to place an order for the product he liked
Landings	Like online stores, landings are created for the purpose of selling certain products through the site. Only, unlike the first, landing pages consist of only one page and are best suited for selling a specific product or a new product. In no case should they be considered as a replacement for an online store, but as an addition - a good option
Sales in social networks	The essence of this approach is to create a public page or community, work on increasing the number of participants and offer products to this audience.
Advertisement sites	Such platforms are actively used for a wide variety of purposes, including the sale of goods and the offer of services. Advertising sites can be used both as the main source of sales generation and as an additional one, especially at the stage of business development
Web development	the demand for such services is confirmed by a large number of web studios, which are not only in large metropolises, but also in small provincial towns. Moreover, in addition to companies, there are also many independent freelance developers who may not even have their own website, but they get their clients through recommendations or on specialized exchanges
Lead generation	we are talking about marketing tactics aimed at collecting contact information of potential customers and transferring them to the customer. The methods of lead generation on the Internet involve the collection of leads using such tools as thematic sites, landing pages, contextual advertising, e-mail marketing, pages and targeted advertising in social networks
Freelance	This is a general name used to define various types of remote work by independent professionals using the Internet
Contextual advertising	A method of monetizing web projects that is great for sites with high traffic. It is worth noting that a commercial website with 10,000 visitors per day or more can bring its owner the same income as a small offline business. At the same time, the costs of its support and development will be significantly lower
CPA	Abbreviation of the term Cost Per Action is translated from English as "payment for action" and involves payment to the webmaster by the advertiser after the user brought to the advertiser's site performs a certain action
Traffic arbitrage	is the attraction or acquisition of thematic traffic and its conversion in various ways

In order to understand the researched category, it is necessary to give its interpretation. The concepts of e-business and e-commerce are quite often equated. There are quite a few definitions of e-business. However, in our opinion, it is appropriate to consider what was proposed by IBM specialists, since they are the source that generates the use of Internet resources in business: "electronic business is the transformation of basic business processes with the help of Internet technologies" (Ashmanov, 2008).

The most important component of e-business is e-commerce, which includes the following elements (table 2).

Table 2

Components of electronic commerce

Constituent element		Characteristic
Electronic Data Interchange	EDI	exchange of information with the use of digital means of communication standardized business documents (orders and invoices) between buyers and sellers
Electronic Funds Transfer	EFS	electronic exchange or transfer of money from one account to another. In e-commerce, EFS is associated with conducting electronic monetary transactions
Electronic trade	e-trade	is the conduct of trade operations and transactions on the Internet, with the help of which the company buys (sells) goods, as well as their payment
Electronic money	e-cash	are monetary obligations of the issuer to the trustee in electronic form. Electronic money is simultaneously a means of payment and an obligation of the issuer
Electronic marketing	e-marketing	complex of marketing activities related to market analysis and promotion of goods on the Internet. Usually, electronic marketing is associated with the placement of marketing information in the network, as well as the management of the posted content
Electronic banking	e-banking	technology of remote banking services, in which access to the client's accounts and operations is carried out using the Internet

\* Note: summarized by the author

E-commerce is a means of doing business on a global scale. It allows the company to interact with suppliers and respond more quickly to requests and expectations of customers. The advantage is that, regardless of the location of the supplier, the company can cooperate with him in the normal working mode.

The main prospects for the development of the Internet in Ukraine have not yet been determined. The efficiency of the functioning of enterprises is related to many factors, an important one of which is the development of the global network. Unfortunately, the level of development of the domestic Internet market is quite low. It

is worth noting that the process of development of the Internet environment will definitely move forward, since Ukraine has taken the direction of digitalization of business.

When assessing the level of digitization of the domestic business environment, attention is paid to the main criteria that it must meet. Thus, the international organization OECD (Organization for Economic Co-operation and Development) and the scientist Thomas Mesenburg identified three main components of digitalization of the business environment (The Concept):

- supporting infrastructure (hardware and software, telecommunications, networks, etc.);

- electronic business or e-business business (conducting business activities and any other business processes through computer networks);

- electronic commerce or e-commerce (distribution of goods via the Internet).

Accordingly, the development of the Internet environment is only a matter of time.

According to the definition of UNIDO, business on the Internet has four main stages of use: marketing, production, sales and payments, and the degree of use of information and communication technologies and systems serves as the measure according to which business (commerce, trade) can be considered electronic. Taking this as a basis, we will build a model that will reflect the degree of subordination and interaction of these concepts and categories and formulate a definition that is more adequate to the realities of today (Sammer, 1999).

The use of the Internet environment in work has led to the emergence of new business models that have certain specific features, and traditional models are also widely used.

Here is a list of the main business models that cover any type of commercial activity on the Internet:

1. Brokerage.
2. Advertising (Advertising).
3. Infomediary.
4. Merchant.
5. Manufacturing (Manufacturer (Direct)).
6. Affiliate.
7. Communities (Community).
8. Subscriptions.
9. Consumption (Utility).

The use of these models is possible both individually and comprehensively, several at the same time, and within the framework of the current overall Internet business strategy. Accordingly, to implement electronic business, it is necessary to define a model of its development.

Today, the following main forms of e-business can be identified:



- electronic commerce;
- electronic banking (Internet banking);
- electronic brokerage services (Internet trading);
- electronic auctions;
- Email;
- electronic moles;
- electronic insurance services.

The characteristics of each individual form are given in the appendix in Table 3.

Table 3

### Characteristics of electronic business forms

Type of electronic business	Characteristics
Electronic commerce	Electronic commerce can take place between business entities during the production and sale of goods (business-business), between a business entity and a consumer, during the sale and distribution of goods (business-consumer), between two consumers (consumer-consumer).
Electronic banking (Internet banking)	operations of certain banking services carried out through computer networks or using the Internet
Electronic brokerage services (Internet trading)	providing clients with financial institutions the possibility of effective transactions with their funds and securities on global currency and stock markets via the Internet - this type of service enables the client with the help of an investment intermediary (bank or brokerage company) to carry out buying and selling on financial markets via the Internet and form your own investment portfolio
Internet auctions	conducted on the Internet with the help of special software (database) installed on the website of the auction organizer
Electronic malls	A new promising form of Internet trade is the model of an electronic mall (an electronic shopping center, a Web site that contains a significant number of electronic stores and catalogs, united by a common location, which jointly perform additional functions
Electronic insurance services	The objects of purchase and sale on the insurance market are quite specific goods - insurance services
The electronic (trading) platform	portal on which users have the opportunity to carry out the entire range of trade and procurement activities: search for goods in catalogs, conduct online negotiations, conclude agreements, make payments, etc.
The electronic catalog of goods and services	electronic platform that is a list of goods and services for sale or purchase.
E-learning	new subjects can be mastered not in educational institutions, but on Internet sites

The most widespread and developed type of business in the Internet environment is e-commerce.

Despite the accelerated development of the economy and society, the implementation of electronic commerce has negative consequences:

- Internet trade can completely displace sales intermediaries from the market, as consumers can buy products directly from the manufacturer;
- Competition on the market is moving to a global level;
- The issue of copyright protection is acute, since it is practically impossible to prove copyright when transmitting information via the World Wide Web;
- Legal uncertainty, as Internet trade is practically not regulated and controlled at the regulatory and legal level;
- The consumer's unclear attitude towards the seller - due to the lack of personal contact, it is impossible to predict the potential demand for products or services;
- The problem of maintaining the price - there are no obstacles to quickly compare prices for similar products on the Internet, and the probability of buying the product you need increases, but at a lower price on the market;
- Increasing the impact of cyber attacks and reducing the level of information security - when providing personal data, a person practically provides all the necessary information for access to outsiders. Accordingly, it becomes possible to track a person and control his activities.

Accordingly, due to such negative consequences, individual enterprises, if they conduct business in the Internet environment, strengthen the system of economic, financial, informational, force, interface and other types of security.

However, the positive consequences of business in the Internet environment are much more than negative:

- This is the main condition for the survival of the enterprise in conditions of fierce competition;
- Savings on office rent, reducing the number of personnel, reducing communication costs;
- Acceleration of financial calculations;
- Acceleration of document circulation;
- Barriers to trade between large and small firms are disappearing;
- Access to the world market;
- The opening of electronic stores allows entering new markets, occupying new niches and segments.

We can see that even this incomplete list of business advantages in the Internet environment allows companies to enter completely new and promising markets for raw materials, resources, capital, and product sales.

Despite such good consequences, it is worth analyzing the foreign experience of conducting business in the Internet environment and highlighting those points that should be used in domestic practice.

It is not surprising that the leading country in the field of conducting business through the Internet environment is the USA. Silicon Valley developers have long been using the Internet for scientific, technical and entrepreneurial activities.

Hundreds of websites, software, and apps have been developed for the needs of U.S. farms, such as:

- Agricultural Web Services (AWS) – a division of Dominion Enterprises – launched a mobile website for agricultural equipment dealers in 2010;

- In Iowa, nine central communities have joined together to sell grain to local consumers over the Internet. The Dynamic Pricing Platform (DPP) connects farmers to local buyers, who in turn connect to futures exchanges, via the Internet and a web browser. In this way, the DPP monitors the markets and reflects the local money rates on a feedback basis;

- The Farmer's Market Online® website is an online alternative to the traditional outdoor market. Its purpose is to provide an opportunity for small businesses and households to sell products manufactured, produced or grown on their farm to buyers around the world for a low fee. With the structure of a regular market, Farmer's Market Online® boasts more than 200 vendors from across the United States, Canada and some other countries selling agricultural products, meat and fish, crafts, gifts, specialty foods, beverages and more to consumers in to the whole world Buyers on the online market can purchase goods directly from suppliers, without intermediaries, commissions and long-term contracts (Shvydenko, 2013).

Europe, being involved in the World Wide Web a little later, is already showing intensive growth trends today. According to the Center for the Research of World Markets in 2006, the largest percentage of active representative offices of online service sites is in Taiwan (65%), followed by Germany (59%), followed by Great Britain (30%) and France (27%) (Aleksunyn, 2006).

From this point of view, countries with a transition economy, such as Ukraine, the CIS countries and Eastern Europe, have the opportunity to use the experience of successes and failures of the pioneers in order not to repeat the mistakes made. However, in order to reproduce a complete picture of the development of e-business, it is necessary to understand the laws of its development, to correlate the Internet marketing system with the traditional system, and to identify those issues that should be paid attention to when making a decision to use E-commerce and marketing. Business in the Internet environment is represented by completely different groups of goods, and the preferences of consumers abroad are somewhat different from domestic ones.

So, if in the countries of Southeast Asia, the development of e-commerce has already reached the active growth of sales of fresh packaged products from the supermarket, then in the markets of Eastern Europe, including in Ukraine, these are products for self-care. In second place are goods for children, and in third place - goods for the home. Rounding out the four most popular FMCG products in Ukraine and Eastern Europe are animal feed. Separately, it is worth highlighting the products that hold the record for online sales in different regions of the world. For example, in South Korea, 80% of diapers are sold online, in China - 35% of skin care products, 20% of cosmetics in Great Britain, 16% of animal feed in Sweden and 14% of health products (Figure 1) (6 Success ).

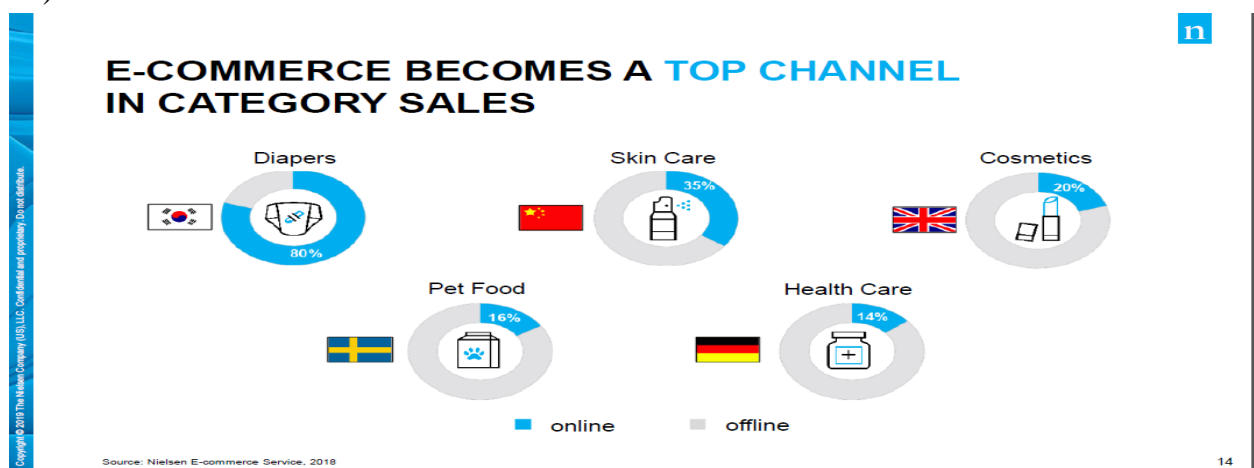


Figure 1. Popular Internet environments abroad

It is worth noting that world business in the Internet environment is conventionally divided into stages of development.

Representatives of the Center for Retail Research (CRR) distinguish three stages of the development of the Internet market and business strategy:

1. A mature market, which includes the USA, Great Britain, Germany (market share - from 9.5%; more than 55% of the population are online buyers, the use of smartphones is growing rapidly (from 15% of online purchases per year, i.e. more than 12 of online purchases per customer).

2. Medium-developed market, which includes the markets of France, the Netherlands, Sweden (market share - from 6.5 to 9.5%; 45% of the population makes purchases online, mobile devices are used to make purchases via the Internet much less often, a wide range of suppliers, more than ten online purchases per year per customer).

3. The immature market is the market of countries such as Italy, Spain, and Poland (market share below 6.5%, uneven development of online commerce (regionally or demographically), less than ten purchases per year per online user) (Centre for).

According to Eurostat, the online trade segment in the European Union accounts for more than 15% of all retail sales in the B2C (business to consumer) segment. The center of Internet trade in Europe is Great Britain. The volume of online sales in the B2C

sphere here is three times higher than in the second largest market on the continent - Germany. The leading platform here is Amazon (54% of all sales) (Fedorychak).

It should be noted that today in the world about 7.1% of the population orders goods and services via the Internet. The number of online buyers is increasing every year, which indicates the prospects for the development of this market. Over the past 15 years, the foundations for the establishment, development and operation of e-business enterprises have been created in European countries. According to the results of the Report on the state of the information economy in 2015 by UNCTAD (United Nations Conference on Trade and Development), the top ten leading countries in terms of the level of e-business development include 6 European countries (first place - Luxembourg; second - Norway; third - Finland; p 10th - Sweden; 7th - Germany; 9th - Great Britain). According to this rating, Ukraine is in 58th place out of 130 countries (Kulyk, 2017).

It is worth noting that the global development of Internet business will give a quick boost to domestic Internet business markets, but it is worth using foreign education correctly, taking into account the peculiarities of the national economy, political and economic situation in the country.

According to the analysis, approximately 71% of Ukrainians use the Internet, and it is worth noting that half of them bought something on the Internet. According to the rating, shopping takes second place, after games, music and entertainment (Figure 2).

Fundamental factors show whether the population in the country has money and can spend it. Here, Ukraine still has to "work" on the population's ability to make purchases via the Internet. Thus, 94% of the adult population of the country must have a bank account (in reality, only 63%), the number of Internet users - at least 80% (in reality, 71%), among them smartphone users - at least 67% (in reality, 51%) (Nielsen).

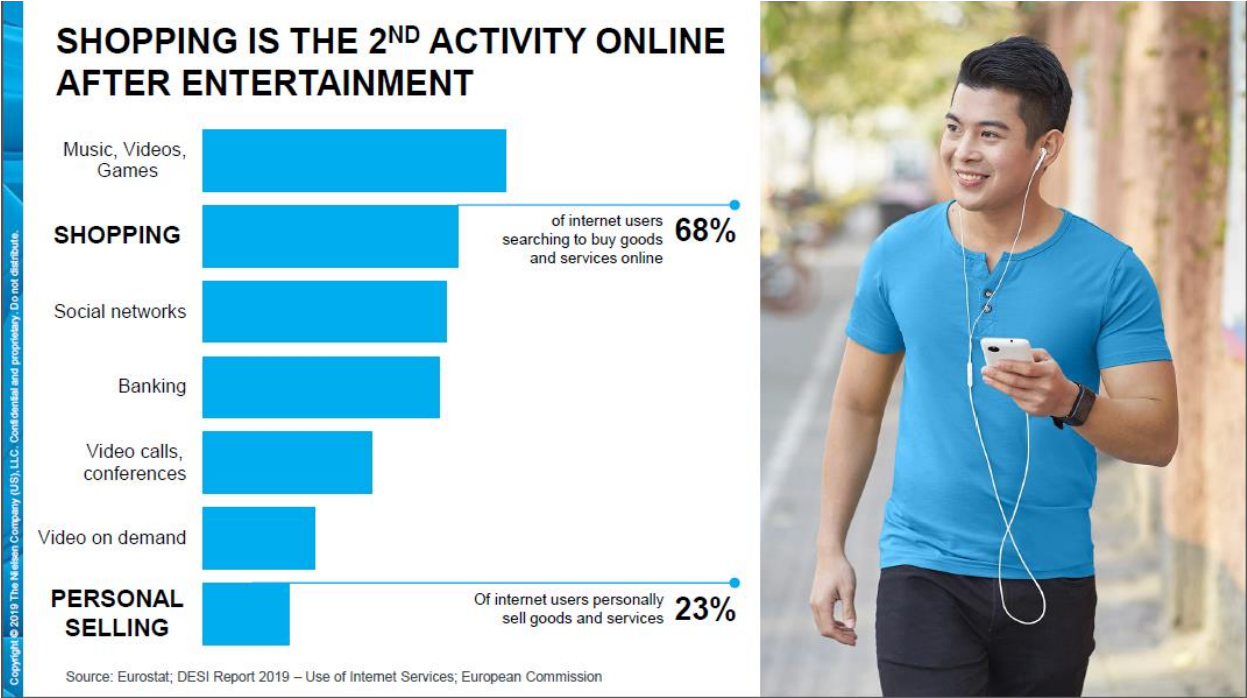


Figure 2. The main directions of business in the Internet environment (Nielsen).

Among all online activities, shopping is in second place after games, music and video, with a share of 68%. The top ten also includes personal sales of goods and services by Ukrainians. For this purpose, 23% go to the Internet. Nielsen experts identified four key factors that influence the size and speed of e-commerce market growth in a particular country.

The global e-commerce market is one of the most dynamic and steadily growing markets. According to the eMarketer report, in 2017 the volume of global retail Internet trade will reach 10.1% of total retail trade, in 2021 this share will increase to 16.1%; the growth rate of e-commerce volumes will outpace the growth rate of retail trade in general (Worldwide).

Moreover, it is worth noting that the e-commerce market in our country is considered the most developed and promising.

Macro indicators tell how many potential consumers there are in this market. So, the density of 135 people per square kilometer is the most favorable for the development of e-commerce. In our country, this indicator is about 77 persons/sq.m. km The reliability of postal communication also leaves much to be desired, and only our position in Doing business meets the criteria - to be higher than 77th position (Ukraine is in 71st place) (Nielsen) (Figure 3).

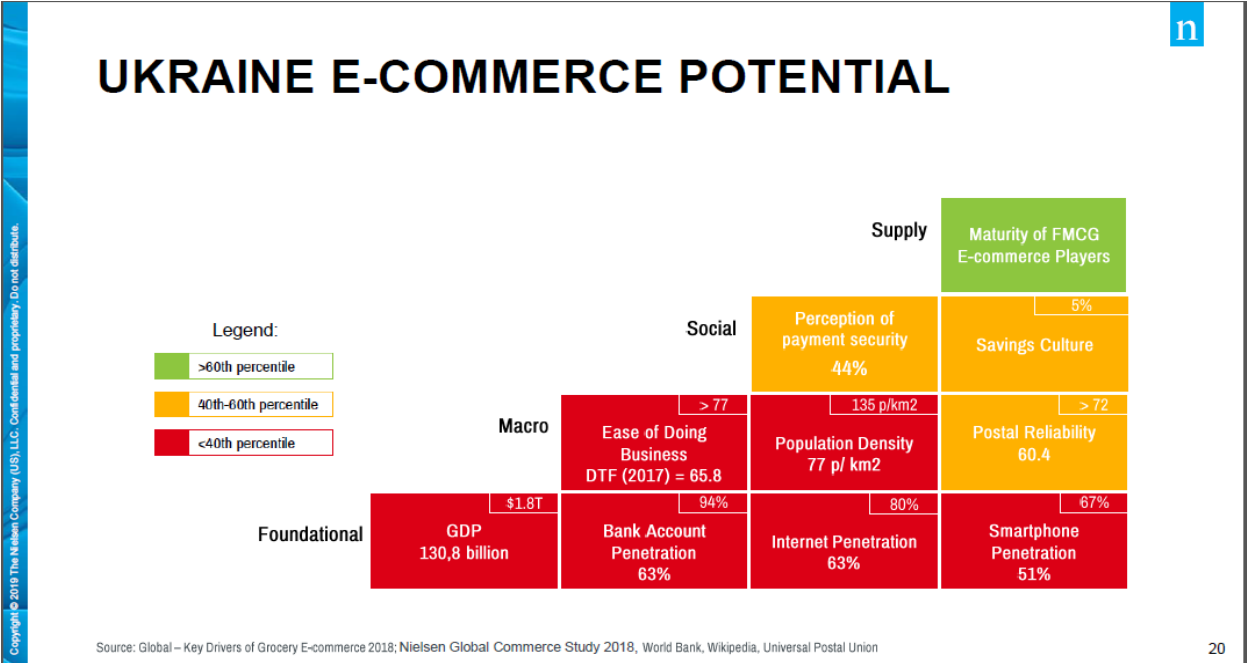


Figure 3. Potential of Ukraine in the field of Internet business (Nielsen)

Despite the low level of solvency of certain categories of citizens, the purchase and sale of goods via the Internet is constantly growing. In fact, this segment of the market is currently developing most dynamically.

The development of the domestic Internet business in the geographical aspect is predictable. Residents of the capital and large cities carry out most operations in the field of Internet business.

Ukrainian buyers of Internet stores mostly buy goods of secondary demand: computer and household appliances, means of communication, cosmetics, books, CDs, goods for children and home.

Food products and expensive items (cars, jewelry, etc.) are the least common among online buyers, because when buying food products in online stores, the consumer does not have the opportunity to check the expiration date and quality, and in the case of clothes, in most cases, it is necessary measure (Worldwide).

The reasons for buying goods via the Internet are the same for the entire population.

We can see that the price factor is the most important when choosing a purchase method, almost at the same level as the price - it is the improvement of one's own financial situation. That is, financial aspects prevail over aesthetic or safety aspects.

Internet business began to develop especially rapidly with the beginning of the pandemic. When online stores became the only safe way to purchase everything you need. For example, online orders in cafes and restaurants have increased significantly (Figure 4). The main areas of small business development in Ukraine are the delivery of food from cafes and restaurants, as well as the delivery of lunches to offices.

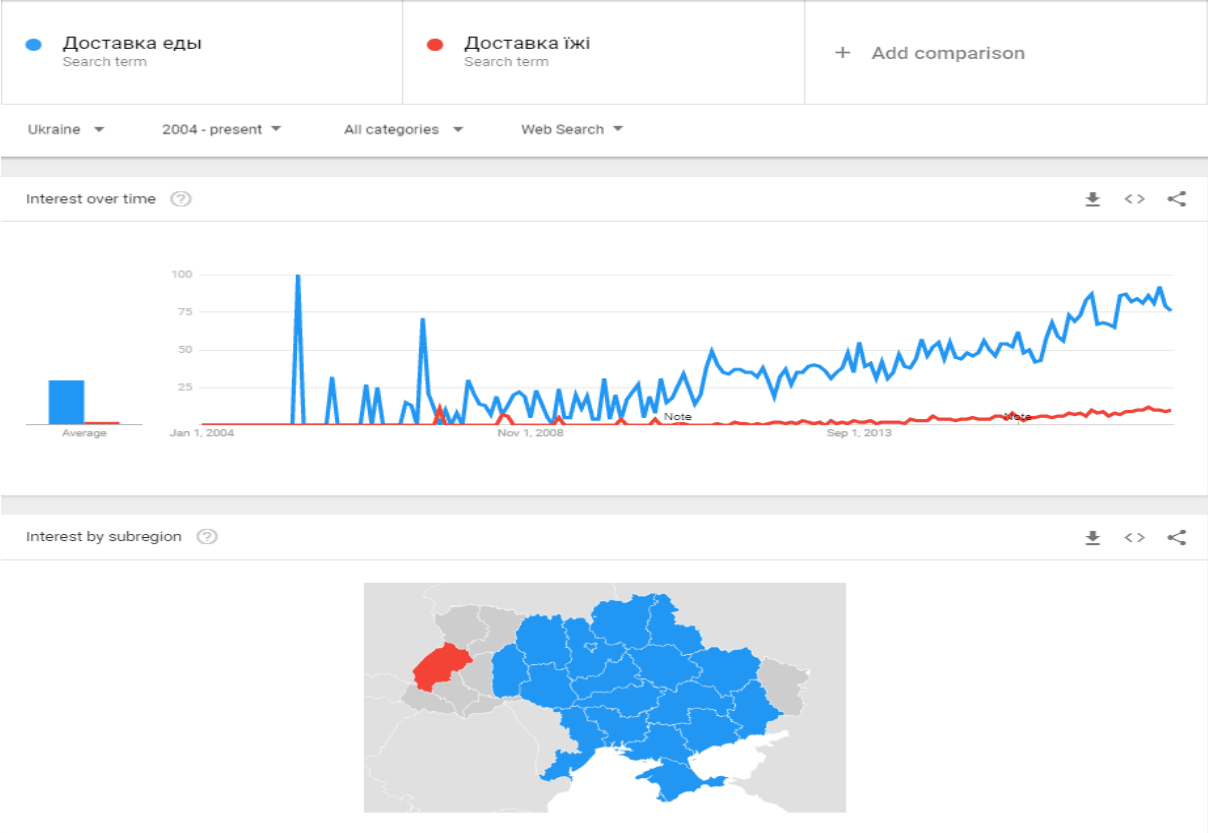


Figure 4. Dynamics of food orders via the Internet

Online education is gaining no less momentum of growth. Practically all universities switched, if not to distance learning, then to mixed learning. Communication between teachers and students, conducting classes, checking tasks, etc. takes place in local networks. Certified courses from various universities, mentors of practitioners are gaining more and more popularity, which allows you to gain new knowledge without leaving your home. This is especially relevant for residents of remote rural regions or people with disabilities (Figure 5).

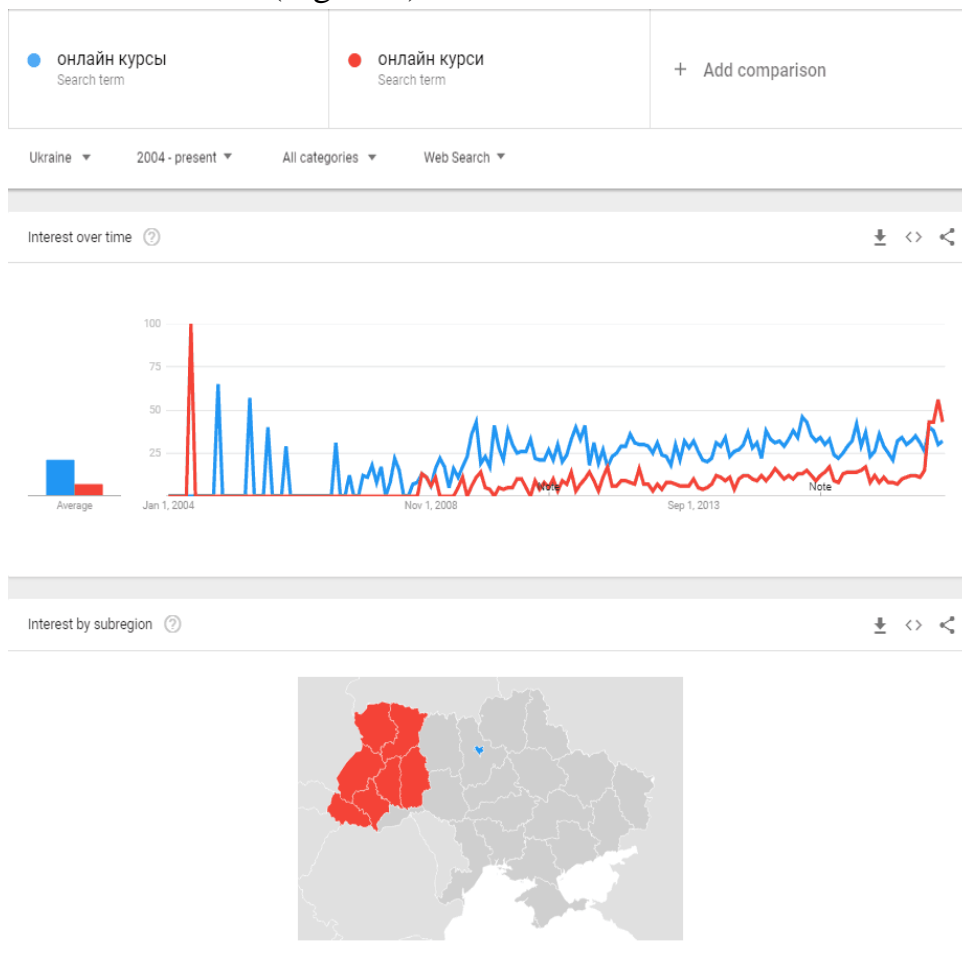


Figure 5. Development of online education (Aktualnyi)

According to analysts, Ukraine is in a state of active growth of the e-com market: it increases by 20-30% annually.

One of the areas that is particularly popular in Ukraine is employment abroad. There are more willing people in this niche, and the terms of payment are often more interesting. But opening such a business may already require knowledge of English, as well as some legal nuances related to international agreements (Aktualnyi).

In addition to the examples we have given, there are quite a few types of online businesses that have begun to develop rapidly in recent years (online tickets, car ordering, flower delivery, etc).



However, information and communication technologies remain the main condition for business development on the Internet. If, for example, 4G or 5G won't surprise anyone abroad, the quality of coverage remains a problem in Ukraine.

71% of Ukrainians (22.96 million) regularly use the Internet. This is stated in the study of Research Holding Factum Group Ukraine - Appendix I.

According to the results of the study, 21 million people have Internet access at home (65%). According to the dynamics of Internet penetration, in the 3rd quarter of 2019, 71% use the Internet once a month or more often, which is 7 percentage points higher. more than in the 1st quarter of this year (64%) - Appendix J.

In cities with a population of more than 100,000, the number of Internet users increased by 3 percentage points. (74%) than in 2018 (71%). They make up 42% of all Internet users in Ukraine.

The growth of Internet use can also be seen in villages, so in 2019 the indicator increased by 5 percentage points. (58%), in 2018 the indicator was 53% (Maizhe).

That is, we can conclude that Ukraine has absolutely all the prerequisites for the dynamic development of business through the Internet. Of course, Ukraine is still quite far from world markets, but there is someone to be compared to.

If we talk about the number of users who buy in online stores, in relation to the total number of people who have access to the Internet, for Europe this statistic looks like - Appendix K. 81.5% of all online sales in Europe are accounted for by only three countries - Great Britain , Germany and France. And from year to year, according to this indicator, they show stable growth.

According to the forecasts of the German statistical online portal Statista, by 2021 the global e-commerce market will amount to \$4.9 trillion per year. According to the analysis of Digital Commerce 360, the volume of online sales in the world in 2016-2019 grew by an average of 20% per year. At the same time, offline retail sales increased by 3.5% for the year. If this trend continues, the volume of the global e-commerce market will exceed the volume of traditional retail by 2036.

At the same time, there are reasons to believe that the coronavirus pandemic will serve as an additional impetus to the development of online trade. After all, in the current situation, more and more people around the world are forced to buy on the Internet what they used to go to the store for. And, having become accustomed to making purchases in one click, they are unlikely to spend more time on it in the future (Biznes po-novomu).

Therefore, according to experts' forecasts, business in the Internet environment will develop quite dynamically, new services and Internet stores will appear, which will bring an increase in the well-being of the population, and for other categories of citizens - satisfaction of demand.

Most analysts believe that the conditions for the development of domestic business in the Internet environment are not favorable enough. The following reasons are distinguished:

- insufficiently developed network infrastructure, which makes access to the Internet problematic and of poor quality, and, accordingly, to its resources;
- lack of a sufficient level of financial literacy to make electronic payments at the national level;
- low general level of culture and solvency of the population, which leads to the spread of fraud, cyber attacks, etc.;
- regulatory and legislative unsettlement of individual business processes in the Internet environment.

Today, the market of Internet payments is expanding at an amazing speed, because by turning to the information network, you can get a whole range of services.

The number of Ukrainians with permanent access to the Internet is increasing every day. According to experts' estimates, today it is about 2 million people. And it is logical that with the growth of the subscriber base, e-commerce is also developing. And increasingly, decisions are being made to accept online payments for goods and services. But the rapid development of cashless payments and the development of the information society in our country requires the solution of a number of social, organizational, legal and other problems related to the development of electronic business in Ukraine.

If you look at the Rating of "Electronic Readiness of the World's Countries", then according to these statistical data, Ukraine took 69th place in the rating of countries most ready to implement electronic government as of 2020, which is 13 positions higher than in the previous rating of 2018. This is evidenced by the United Nations (UN) data for 2020, published on the organization's official website. Denmark, South Korea, Estonia, Finland and Australia lead the rating.

Perhaps the use of e-business in Ukraine has not received large-scale development, as in countries such as Denmark, the USA, Sweden, Switzerland, and still our state has prospects for the development of this field of activity, because it can take into account the experience of other countries that have gone through the same path of formation and development of electronic commerce.

So, the factors that in a certain way prevent the full development of e-commerce in Ukraine include:

The problem of security and mistrust of the user, everyone neglects it, and the concept of "Internet hacker" is gaining popularity in e-business. Fraudsters gain trust quite quickly and steal your money, thereby providing a negative impression of the service. In the US, about 1% of plastic card payments turn out to be fraudulent. Half of these fraudulent payments are made online (with less than 10% of online payments). Ukrainian online stores will deliver goods with payment at the time of receipt of the purchase or

post-payment. The main reason is distrust, on the one hand, in the honesty of buyers and, on the other hand, in the reliability of payment systems. Therefore, it is necessary to amend the Law of Ukraine "On the Protection of Consumer Rights" regarding the general requirements for the procedure for buying and selling goods and services via the Internet and to take care of the security of the site and additional software. Also, the solution to this problem should be the significant improvement of Internet payment systems, the spread of plastic cards, especially in the banking sector, and the creation of networks of agent banks.

The problem of insufficient economic potential. Two conditions are necessary for the development of electronic commerce in goods and services. The presence of a potential buying audience. Availability of bank funds among the population.

In order to buy on the Internet, you need to have funds. Given the fact that more than half of Ukrainians are below the poverty line, it is difficult to count on a really wide audience. Internet technologies are most effective when they are used by at least 10% of the population. In Ukraine, according to various estimates, 7 to 9% of the population actively use the capabilities of the global Internet information network; low level of use of information technologies at enterprises, organizations and state authorities, which does not contribute to awareness of the place and role of the Internet in the modern economy; a significant difference in the level of informatization of large cities and regions of the country, which reduces potential network users.

We can also single out the problems of the development of e-business in Ukraine in general and the Internet sector of financial services in particular, there are gaps in the legislative base. In Ukraine, there are no legislative acts that would clearly regulate the sphere of Internet services.

Legal support of electronic commerce. The transition to the "virtual space" led to the electronic signature, at the same time raising the issue of the evaluation of contracts (contracts) at a distance.

All agreements are concluded using contracts, in our case, electronic ones. Contracts occupy a central place in the regulation of relations between legal entities and individuals in various spheres of activity (purchase and sale, transportation, etc.). With the transfer of agreements to the "virtual world", their civil law functions do not change, but at the same time a number of problems arise regarding the conclusion, amendment and termination of agreements, the form of the agreement. The problem is the lack of development of reliable digital signatures, certificates and encryption. There are problems of confidentiality and integrity of data, compliance with intellectual property rights. The standards and legislative framework are insufficiently developed, the legal framework for the development of the Internet, information resources and intellectual property is insufficient, which does not contribute to the development of the Internet services market.

- legal protection of information computer systems against interference in their work for the purpose of failure of functioning, theft;
  - protection of consumer rights in retail electronic trade;
  - providing legal status to electronic documents;
- protection of basic human rights (confidentiality of information; protection against the spread of a network of false facts);
- copyright protection on the Internet;
  - establishment of the procedure for taxation of electronic business;
  - regulation of foreign economic activity using the Internet.

Therefore, the legal regulation of electronic business is not reduced only to the legalization of an electronic signature or to solving taxation issues.

The high cost of owning an electronic store. Today, large companies can create a full-fledged store connected to the accounting system of a real company, because the complex of services for its "deployment" is estimated from 2 to 50 thousand dollars. USA. During the pandemic, the number of users and online stores also increased significantly. In order to solve these problems, it is necessary to intensify investment activities, to promote the growth of the inflow of foreign direct investments into the e-commerce sector; activation of interactions between executive authorities, as well as creation of favorable conditions for small and medium-sized businesses, simplification of the procedure for obtaining documents of a permissive nature, etc.

The problem of the low level of development of infrastructure for the delivery of goods across Ukraine.

Ukraine's transport infrastructure needs significant capital investments for its re-equipment and expansion. The state of roads and railways in most cases is in a state of emergency, which does not stimulate the development of the economy of Ukraine, and even more so in an industry that depends on the speed and quality of delivery, such as e-commerce. Business development requires constant expansion of the geography of the service, however, the low level of modernization of the transport infrastructure of Ukraine significantly complicates the possibility of delivering goods to remote areas. Either delivery systems are expensive or unreliable.

It is necessary to develop the infrastructure by increasing the network of highways, railways, air connections, improving the quality and safety of the national transport network. This will help online stores to improve and increase the quality and speed of delivery of goods and services. It is necessary to improve the tariff policy in the spheres of providing publicly available telecommunication services, universal postal services, and create a state courier service. The cost of delivery services in Ukraine should correspond to the level of its cost price.

Humanity has already reached the information age, in which the economy and business become electronic and are carried out on the Internet.

One of the main problems of business in the Internet environment is high technology.

Simplicity is highly valued nowadays, a fairly common mistake when you come up with a site, but its implementation requires new technologies and instructions for the user to find something. In order to avoid super-technology, you need to provide information succinctly, and first of all decide on the main functions of the online store.

The problem with brick-and-mortar retail is that if a product sells well, it doesn't mean it will sell well online. Before you open an online store, you need to answer the following questions: can the inserted price influence the purchase of the product in the online store, instead of in a regular retail network? Is delivery profitable for the buyer? Answering all these questions will avoid unnecessary costs.

The problem of mistrust of professionals in the field of electronic commerce. If you're new, instead of going down this project planning route and ending up struggling to promote your store, you should consider purchasing a full service package from an e-commerce agency. The professional help of specialists with a wealth of knowledge will not be superfluous.

The problems of doing business in the online environment can be an unstable arrival of customers or their absence at all. It is necessary to regularly direct traffic, i.e. the amount of information transmitted over a computer network over a certain period of time, to target pages

The problem of lack of motivation, sources of bright ideas. It is necessary to continuously engage in self-education and immerse yourself in the desired environment. Because everything changes with lightning speed. Attend thematic seminars, trainings.

Ignorance of the needs of the market, it is necessary to analyze the practical experience already gained, to analyze competitors and their methods of promotion. Conduct a survey of the target audience, wishes and suggestions. Ask for targeted criticism from the customer about your product or the work of managers.

Therefore, the development of e-business in Ukraine depends on the state and policy in this field of activity, on attracting investments in this sector, improving the level of transport infrastructure, investing in technical re-equipment and establishing a regulatory and legal framework. Solving issues of legal regulation of the sphere of Internet services should become the basis for the regulation of risks, such as fraud, tax evasion, violation of intellectual property rights.

The formation of a long-term development plan is impossible without a comprehensive solution to those problems that hinder the effective functioning of the Internet environment and its participants.

Ways to solve business problems in the Internet environment:

1) since the Internet network, with its effective use, is able to create conditions for the legalization of financial resources, it is worth optimizing the tax and budget sphere at

the state level, thereby reducing the tax burden or introducing tax benefits for Internet stores and other areas of the Internet network, which, in turn, will become a decent incentive for the development of Internet commerce;

2) The Internet is a place for disseminating information about grant programs and investment projects. Activation of innovative activity is possible with the involvement of not only domestic, but also foreign investors in the sector of the Internet environment; activation of cooperation between authorities and representatives of Internet business in the direction of activation of the investment climate;

3) the presence and efficiency of the growth of small and medium-sized businesses should be considered the basis of effective development of the national economy. It is the Internet environment that allows such a category of entrepreneurs to effectively develop on the same level as large enterprises. In this case, there is a need to simplify the procedure for obtaining documents of a permissive nature; application of preferential rates for the lease of state and communal property for small business entities, regardless of the type of economic activity;

4) it is clear that making amendments to regulatory documents is not within our competence, however, given the shortcomings and problems of Internet business development, officials should pay attention to the fact that consumers of the Internet environment are not protected from low-quality products and services, create conditions and responsibilities when buying and selling in the Internet environment system;

5) ensuring the appropriate level of protection of the rights of consumers, i.e. Internet buyers, by developing an action plan for state market supervision and protection of consumer rights based on the best international experience.

The development of the field of online trade requires the introduction of the latest technical developments, but this requires significant costs for the owners of online stores and online auctions. It is necessary to create a program to support the technological equipment of subjects of the Internet trade market, which will include measures to provide long-term soft loans for technological re-equipment. Thus, online stores will have the opportunity to improve their own business, and for the industry as a whole, this will help increase the competitiveness of this sector on the world stage.

The variety of problems that are today the realization of the enormous possibilities of the World Wide Web and the variety of directions in which development and progress continue are considered. The focus was on various business models for the World Wide Web, including advertising, subscriptions, other media and their interaction with paradigms such as software-as-a-service, data ownership, and many aspects of socialization. Over the previous years, the business models discussed above have been transferred or applied to the World Wide Web one by one. Today, there is a general use of different combinations of business models on the Internet. For example, blogs can combine community and brokerage models, as such a combination allows interested

communities to exchange their opinions and carry out transactions of buying or selling goods or providing services. The SaaS paradigm allows for a combination of community and subscription models, social software can be qualified as a fusion of operations, advertising and community models. Through the various mechanisms and development models discussed above, social networks are transforming into large-scale networks of social significance, and our traditional economies are becoming economies of relationships. As analysts, mass media, and bloggers point out, scientific studies of the interaction of the social and technical dimensions of the World Wide Web are only beginning today. While the importance of traditional media is declining, the number of blogs in the world is doubling every six months; The World Wide Web has become a place where users effectively control content, business structures are looking for new ways to influence and try to use this phenomenon in their business interests. Obviously, there are also legal issues that need to be explored, in particular, content management and control, information privacy, privacy and copyright issues, but there are much more opportunities for effective development. It is clear that in addition to the positive aspects, there is also the reverse side of the coin - negative aspects, such as unintentional or unauthorized interventions. In this context, it is worth mentioning the report made by the New Scientist magazine that the Pentagon's National Security Agency, which specializes in eavesdropping and code-breaking, is investing heavily in research into the mass sharing of information that people submit about themselves on social networks. Various illegal activities such as spam, phishing etc. are spreading in the Net, so users have to protect themselves from it.

The age structure of Ukrainian Internet users makes it possible to consider the Internet as a channel for the formation of consumer demand with the greatest speed and potential for growth in the coming years. The main factors of this are, on the one hand, the spread of 3G Internet and the total "mobilization" of consumers, on the other, the belonging of the largest segment of Internet users to generations X and Z, and the economic crisis. The advantages of Internet merchants compared to traditional retail due to lower prices, a wider assortment and faster finding of the right product will only increase, and the most promising business organization according to the models of electronic marketplace and niche electronic store / electronic showcase of the manufacturer seems to be the most promising. The change of users in the most active age groups, associated with natural aging, leads to a lowering of barriers for the penetration of foreign companies into the Ukrainian e-commerce market. The new generation lives in a new rhythm, and the convenience of the service, the ability to quickly find the desired product or service, and the realization of a need at the time of its occurrence come first. People want to receive a consolidated offer, personalized to their preferences, and if those preferences have already been expressed, then based on them. All this improves the position of foreign players, who now mainly offer payment services, terms and delivery

terms that are more convenient for customers. The total coverage of Ukrainian consumers by the mobile Internet, together with the increasing importance of the possibility of implementing various phases of the purchase agreement at different, convenient moments of time and in convenient circumstances, create grounds for the total implementation of the omnichannel strategy in the practice of electronic merchants of Ukraine and its transformation into a condition for maintaining a stable market position. The use of omnichannel, along with the involvement of intelligent data processing technologies, will make the implementation of remarketing / retargeting technologies more successful. In general, it can be argued that, regardless of the chosen business model, success in the e-commerce market will depend on the introduction of innovations in all areas of activity, primarily in the direction of personalization and implementation of fulfillment. Only innovations, the study of promising options of which should become the subject of further research, will give domestic companies the opportunity to successfully compete with foreign Internet giants in the future.

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## **2.6. PROSPECTS FOR THE DEVELOPMENT OF STAFFING IN THE PUBLIC MANAGEMENT OF THE MEDICAL SPHERE IN UKRAINE**

The relevance of the research is related to the necessity and complexity of solving problematic issues regarding the provision of Public Management reform in the health care sphere.

Actuality of theme. Ukrainian society is at a difficult stage of forming a new system of social relations. This is a rather long process with certain elements of uncertainty. At the same time, even in conditions of macroeconomic instability, favorable conditions are created in the economy for the development of a democratic system in all sections and at all levels of social relations. Taking into account the modern challenges associated with the implementation of a comprehensive medical reform in the country and the need to solve complex issues of the development of the industry in the conditions of a global pandemic, solving the problems of increasing the efficiency of staffing in the medical field is of primary importance.

The problems of the health care sector in Ukraine, in particular its staffing, are considered by many scientists. Such scientists as Afonin A., Vesnyn V., Dyatlov V., Kolot A., Karamyshev D., Maslov A., Polyakov V., Petyukh V. paid their attention to the issues of developing effective personnel assessment and certification systems. In view of this, there is a need to substantiate the prospects for the development of Human Resources in the Public Regulation the health care sector (Vesnyn V., Vasyuk N. O., 2015; Karamyshev D.V., Rohova O. H., 2010; Derzhavne upravlinnya, 2013).

The purpose of this publication is to substantiate the theoretical and methodological principles and develop some practical recommendations for the improvement of staffing mechanisms in the Public Regulation of the medical sphere.

The tasks of this publication are to investigate the theoretical and methodological aspects of personnel support, to analyze the trends of personnel support in the Public Regulation of the medical sphere, to substantiate the prospects for the development of mechanisms of personnel support in the Public Regulation of the medical sphere.

The subject of the study is the methodology and organization of the system for evaluating the effectiveness of personnel support in the Public Regulation of the medical sphere.

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The object of the study is the process of development and use of methodological tools for personnel provision in the Public Regulation of the medical sphere.

Research methods. The methods of comparison, analysis and synthesis are used in the study of theoretical aspects of personnel support and definition of key concepts; in the analysis of the processes of organizing staffing at the level of a health care institution, methods of diagnosing the state and problems associated with effective staffing in the medical field, methods of system analysis, induction and deduction, and abstraction were used.

Practical significance of the obtained results. The implementation of the proposals will contribute to the increase of Human Resource management in Public Management, i.e. labor productivity, analysis, control and rational use of labor in personnel provision of Public Regulation of the medical sphere.

### **Theoretical basics of staffing in the public regulation of the medical sphere**

In the conditions of global risks and threats, the social importance of the medical field is growing critically, in particular, in solving problematic issues of personnel support. The analysis of the latest publications allows to determine the key directions of the development of personnel policy and personnel support in the public regulation of the medical field. Thus, the scientific works of T. Kurylo are devoted to the problematic issues of the development of intellectual and personnel management in health care management; features of management in this area were studied by B. Kryshchuk and I. Andreeva; Yu. Voronenko, N. Koba and others studied the problematic issues of the public personnel policy on the training of health care managers.

It is also important to determine the essence of the mechanism of staffing in the medical field. According to the leading scientists who studied the issue of the development of the human resources mechanism in the public regulation of the medical sphere, in particular O. Krasnova and T. Pluzhnikov, the mechanism of public regulation of the health care sphere should be understood as a set of goals, principles, methods of administrative, economic, legal and of a social and motivational nature, which are carried out by the state with the help of a perfect set of tools and are aimed at ensuring the effective and dynamic development of the health care sector (Krasnova O., Pluzhnikov T).

The main elements of the mechanism of public regulation of the health care sector are as follow: subject; object; purpose; goals and principles; as well as tools for implementing the mechanism. The subjects of public regulation of health care are state and local self-government bodies, legislative, executive, judicial bodies, public and political associations. When regulating the medical field, the public government determines the purpose, tasks, directions, principles of public policy, establishes the amount of budget funding and creates a system of other regulators. The main body that

ensures the implementation of goals and objectives in the health care sector is the Ministry of Health of Ukraine, which is entrusted with the formation and implementation of public policy. The public government and the Ministry of Health develop tools for the effective operation of the health sector, carry out planning and forecasting, set state standards, develop public procurement programs to provide the industry with the necessary resources and monitor activities in the field of health care.

The main tasks of health care regulation are as follow: identifying needs for medical services; planning the organization of the work of medical institutions; collecting the necessary information and mobilizing resources; ensuring access to quality medical services; disease prevention; diagnosis and treatment.

In modern conditions, the main goals of the mechanism of public regulation of the health care sector are as follow: providing citizens with high-quality medical services; provision of free assistance guaranteed by the state; provision of financial resources; provision of the latest technologies; improvement of the system of organization and management of health care; professional development of personnel; preventive activities; provision of an improved legal system; creation of competition in the medical market; adaptation of the existing sphere of health care to changing conditions (Aver'yanyov V.B., 2003).

Public authorities when implementing public regulation of the health care system must adhere to the following basic principles: legality; transparency; consistency; optimality; predictability; priority; efficiency; social responsibility. The main methods of public regulation of health care are administrative, economic, legal and social-motivational.

Such scientists as V. Averyanov (2003), K. Levchenko (2005), Oluyko V.M. (2005), D. Bohdan (2019), I. YE. Bulakh, L. P. Voytenko, YU. P. Antonenko (2018). The main attention in scientific works was paid to the problematic issues of staffing in certain spheres of state regulation, in particular, the peculiarities of personnel policy in the field of health care were studied by O. Volosovets (2019), Yu. Voronenko (2013), A. Khaletska (2015), Ya. Radish (2020) and other scientists.

In the context of the study of the above-mentioned problems, it is appropriate to consider the main scientific concepts (Table 1).

The concept of personnel is full-time qualified employees with certain professional training and who have special knowledge, work skills or work experience in the chosen field of activity (Zavinovs'ka H.T., 2003).

Personnel is the entire personnel of the organization of permanent and temporary employees, both skilled and unskilled labor. In other words, the main components of the concept of "personnel" - permanence and qualification of employees are not mandatory for the staff. For the organization, preference should be given to the term "personnel" as a more generalized, universal term. The term "personnel" in foreign and domestic sources

is often identified only with a part of employees - specialists or workers with high qualifications and experience working at this enterprise (Zavinovs'ka H.T., 2003).

Table 1

Basic scientific concepts on the topic of research

Concepts	Author or source
1. "Personnel policy is one of the most important directions of state administration, oriented to the need of public administration in personnel, which consists in strategic activities of goal setting, ideological and software formation, development and use of personnel resources as a determining factor of the effectiveness of the system of public authorities."	Terminological dictionary-handbook of the health care manager
2. "Personnel policy is a comprehensive system of human resources management, a system of people management on the scale of the state, region, industry or individual organization, the leading direction of the state's activity, which includes the development of organizational principles of work."	Public personnel policy: theoretical and methodological support: monograph
3. "Personnel support is an activity to restore labor resources, the main element of human resources management, a necessary factor for achieving the goals of social development."	Encyclopedic dictionary of public administration
4. "Personnel is the entire composition of institutions. Personnel are not only full-time qualified employees, but also personnel corresponding to their workplace."	Shtokin G.
5. "Personnel processes - objectively determined, socially significant changes, development of the state of personnel relations and connections, quantitative and qualitative parameters of the personnel corps, the result of the action of objective and subjective factors, and both in the middle of the organization and beyond it."	Oluyko V.

The term "labor resources" was introduced into science in the XX-s of the XXI-th centuries by S. Strumylin, using it as a planning and economic indicator for measuring the workforce. The modern understanding of labor resources is interpreted as human resources, which is much broader and includes such concepts as labor potential, state of health, level of education, abilities and culture, professional knowledge for work in the field of socially useful activities.

Personnel management is a specific function of management activity, the main object of which is people who belong to certain social groups, as well as labor teams. The concept of personnel management is a system of theoretical and methodological views on understanding and defining the essence, content, goals, tasks, criteria, principles and methods of personnel management and the development of mechanisms for their implementation in the conditions of a specific organization (Entsyklopedychnyy, 2010).

Personnel evaluation is considered as an element of management and as a personnel certification system that is used in the organization in one form or another. At the same time, it is a necessary means of studying the qualitative composition of the personnel potential of the organization, its strengths and weaknesses, as well as the basis for improving the individual work abilities of the employee and improving his qualifications.

Since the results of the evaluation determine the position of the employee and the prospect of his transfer, they are an important motivational factor for improving labor activity and attitude to work.

Personnel support at the level of the organization, as a system, usually includes two structural blocks.

In the process of performing Human Resource functions at the level of the organization at all stages of this process it is necessary to evaluate its effectiveness. The assessment of Human Resources involves the comparison of certain characteristics of a person: professional and qualification level; business qualities; work results with relevant parameters, requirements, standards.

Personnel evaluation in the Human Resources system must necessarily include a psychological component and be aimed at developing recommendations for managing both the personnel as a whole and individual employees.

An important task of evaluation is to provide feedback: the employee must know how the results of his activity are evaluated, and the desire of quality performance of his work by management. The evaluation should be considered openly and the employee's achievements should be discussed and ways of improving his performance should be chosen. This allows to adjust both the behavior of employees and their working conditions.

The results of the assessment are based on a number of management decisions on the following issues as follow: recruitment and placement of personnel, clarification of the contribution of each employee to the organization's activities; promotion of employees both vertically and horizontally; improvement of the structure, style, methods of personnel management; strengthening the relationship between the administration and the trade union, managers and subordinates. Each of these problems is related to different aspects of business valuation. Thus, when hiring for a job, they require, first of all, an assessment of the applicant's personal qualities, and at certification - an assessment of work results. Regular and systematic assessment of personnel provides guidance with information for making informed decisions on salary increases, promotions, qualifications, etc.

In summary, we note that the main components of the personnel system are analysis, planning and forecasting, while the tasks of this subsystem are the calculation of the need for personnel of the necessary professions, specialties and qualifications.

### **Main trends in the development of human resources in the public regulation of the medical sphere**

The public personnel policy should be understood as a government strategy, a political course of work with personnel at the national level, which reflects the will of the people, a government strategy for the formation, development and rational use of

personnel, all labor resources of the country. According to its content, the public personnel policy is a system of officially recognized goals, tasks, priorities and principles of the country in the organization and regulation of personnel processes and relations, in particular: improvement of the personnel system of the industry taking into account modern socio-economic conditions and real needs; introduction in the prescribed manner of concluding an employment contract on the terms of the contract with the managers of health care institutions; reorganization of the system of planning and distribution of human resources in the ratio “doctor-medical worker of the middle level” due to the increase in the number of middle-level workers; reforming higher medical and pharmaceutical education; training of specialists in new specialties: medical psychologist, clinical pharmacist, health care economist, health informatics specialist, medical equipment operation specialist, health care manager; expansion of training of family doctors, etc.; development of new public standards of higher medical and pharmaceutical education, educational and qualification characteristics of specialists, educational and professional programs and means of unified assessment of the level of knowledge of medical and pharmaceutical workers; improvement of the nurse training system, development and implementation of the nurse development program, expanding the functions of nurses in accordance with world experience, which will reduce the need for doctors in the country.

The basis is a patient-centric model with the following principles: ensuring access to medical care; coordination and integration of medical care; respect for the needs and expectations of patients; providing patients with information about the diagnosis and treatment process; emotional support; involving the family in the process of providing medical care (Upravlinnya personalom, 2002).

The health care system under the conditions of reforms focuses on clearly defining the roles and responsibilities between the government, local self-government bodies, and heads of health care institutions.

Among the urgent tasks facing the national health care system are resource provision of the health care system with professional personnel: availability of personnel, their qualifications and placement; working conditions, wages, social security; material, technical and technological support of the labor process; appropriate level of medical care, etc.

Personnel policy at the national level is designed to ensure the effective functioning of the medical industry. Thus, according to international experts, in order to achieve national and global health care goals, it is necessary to create a contingent of qualified, purposeful and respected medical workers.

## **Prospects for the development of personnel in public regulation of the medical sphere**

Based on the analysis of the staffing mechanism in the public regulation of the medical sphere, the following areas of improvement of the specified mechanism are proposed in this publication:

1. Optimization of the personnel and resource component of personnel support in the medical field.

2. Improvement of the regulatory and legal framework for personnel support in the medical field.

3. Improvement of the motivational component of staff support in the medical field.

Direction 1. We will determine the prospects for development and the main goals of personnel support in the medical field with regard to the optimization of the personnel and resource component:

a more rational distribution of tasks and responsibilities among medical personnel as a promising strategy for improving access and increasing cost efficiency within the health care system (for example, expanding access to medical care through training and connecting middle-level medical workers and non-professional health care workers to perform certain procedures that are otherwise performed only by employees with longer (and sometimes more specialized) training;

providing the organizational structure with the personnel of health care institutions (medical and administrative), professionally trained to perform tasks in the complex conditions of global challenges and threats;

rational management of the professional potential of personnel;

development of an organizational structure adequate to goals and objectives;

improvement of resource provisioning mechanisms for the provision of medical services (depends on the intensity of the flow of patients in medical institutions and various conditions: the level of morbidity, the medical activity of the population, the economic situation in the regions);

creation of a mechanism for planning and optimal use of resources in the process of providing medical services, taking into account indicators of patient flows;

determining the volume of necessary financial resources depending on the intensity of patient flows and the cost of resource provision, in particular the state of implementation of government programs for the development of the medical sector;

improvement of innovative technological development.

Direction 2. We will determine the prospects for development and the main goals of human resources in relation to the improvement of the regulatory and legal framework of human resources in the medical field.



The regulatory and legal base of personnel support in the medical field is designed to ensure the integrity of legislation on the implementation of tasks and functions of public regulation in the system of public management and administration. In Ukraine, during the years of independence, in accordance with the Constitution of Ukraine, the institute of Public Management was created as an important tool for the formation and implementation of local policy, the management of a certain territorial community, ensuring the rights and freedoms of a person and a citizen, taking into account domestic and foreign experience, an appropriate system of national legislation was formed in this area.

The implementation of this direction should begin with the systematization and harmonization of the current legal framework, which regulates the issue of personnel support in the medical field in Ukraine (issues of training, distribution, employment of medical personnel, personnel management, increasing the motivational component, etc.). This direction of improvement of personnel policy in the field of health care provides:

- formation of uniform approaches to establishing standards for various sections of medical, social, psychological and other types of assistance with the aim of rational use of human resources in the medical field;

- improvement of regulatory legal acts regarding the nomenclature of specialties and positions of health care workers, qualification requirements for positions and characteristics of specialties, etc.;

- improvement of the accounting and reporting documentation of personnel support in the field of health care, the monitoring system and criteria for assessing the quality of the work of medical workers, the development of effective mechanisms for increasing motivation, etc.

- strengthening of control mechanisms for compliance with legislative norms.

As practice shows, modern legislation regarding staffing in the medical field does not fully satisfy the growing needs of ensuring the realization of the constitutional rights and freedoms of a person and a citizen, the effective performance of the tasks and functions of a democratic, social, legal state, does not correspond to the level of maturity of civil society and its defined prospects development.

Negative facts and trends in the medical sector are largely caused by the fact that the legislation did not ensure the stability, status, conditions of material support and social protection of workers in the medical sector do not correspond to the level of responsibility assigned to them. Further development of human resources in the medical field should be carried out on the basis of constitutionality and legality of regulation; highly professional, democratic and transparent decision-making procedures; compliance with the requirements of legislation, ethical norms and rules of conduct.

Direction 3. We will determine the prospects for development and the main goals of personnel support in order to improve the motivational component of personnel support:

implement a system of salary increases for medical workers in the field of health care depending on the level of qualification of medical workers, volumes, quality, complexity, efficiency and conditions of the work performed, as well as continuity of work experience;

to improve quality indicators, questionnaire procedures of consumers of medical services to determine the degree of satisfaction with the level of qualification of medical workers;

to develop the system of providing official housing, especially in rural areas;

improve working conditions: equipping the workplace in accordance with the equipment report card; regular improvement of the professional level of medical workers due to remote forms of education, tele-lectures, tele-consultations;

ensure labor safety.

The success of socio-economic transformations in Ukraine depends primarily on the effective work of public administration bodies at all levels. Equipping them with highly qualified personnel capable of ensuring economic and social development is a priority task.

In order to solve this problem, it is necessary to implement a unified state personnel policy, to scientifically substantiate the staffing of specialists, to improve the system of professional development of employees of health care institutions. The basis of human resources should be the principles of democratic selection, career development based on business qualities, continuous training, encouragement of career development, systematic renewal of personnel and control over their activities

## **Conclusions**

The analysis of scientific publications made it possible to determine the key directions of the development of personnel policy and personnel provision in public regulation and clarify the essence of the mechanism of personnel provision of the medical sphere as a set of goals, principles, methods of an administrative, economic, legal and social-motivational nature, which are carried out by the government with the help of a perfect set of tools and aimed at ensuring the effective and dynamic development of the health care sector with the main elements of the specified mechanism in the system of subject-object relations.

On the basis of the analysis of personnel support in the medical field, it was concluded that for the development of effective personnel support, a strategy of personnel support should be developed and implemented, which is based on the real needs of the medical field, with an emphasis on the powers of local self-government regarding the

management of health care institutions, their organization material and technical and financial support, improvement of regulatory and legal support.

The areas of improvement of the human resources in the public regulation of the medical sphere at the local level have been determined, in particular, the areas of improvement of the mentioned mechanism have been proposed in a systemic vision: optimization of the personnel and resource component of the personnel provision of the medical sphere, improvement of the regulatory and legal framework of the personnel provision and the motivational component of the personnel provision of the medical sphere.

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## 2.7. DIGITAL MARKETING STRATEGIES IN HOSPITALITY

Recently, studies devoted to the development of marketing strategies have gained relevance. The review of domestic and foreign scientific works related to the theoretical aspects of marketing strategies shows a deep systematic analysis of all areas of theoretical, methodological and applied research, which include: the conceptual apparatus of strategic management; conceptual principles of digitalization of marketing; impact of layout strategies on the hotel business; theoretical and methodological principles of development of marketing strategies; theoretical aspects of the essence of the concept "digital marketing" from the point of view of digitization; development of marketing strategies of the subject of economic activity taking into account the specifics of its functioning; use of Internet and digital technologies.

Each of the scientists contributed to the formulation of the concept of marketing strategies and other related concepts in various areas of the economy. However, the dynamism and popularization of the development of enterprise management with a priority focus on the marketing component in Ukraine and the world are aimed at solving certain issues that require research, thorough analysis and the development of practical recommendations and that will help domestic enterprises to compete not only among themselves, but also to make a decent competition to foreign enterprises in modern conditions.

The global pandemic of COVID-19, and to date, the war, have made significant adjustments to the approaches to the development of marketing strategies of enterprises in most spheres and types of economic activity and have radically affected their priority areas of development. In particular, the importance of marketing strategies for a specific enterprise has increased due to the high level of economic uncertainty and real situations in which subjects of all forms of ownership and organizational and legal forms of management operate today.

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This determines the relevance and regularity of the study of the essence of marketing strategies, and the complex nature and versatility of practical use require the improvement of approaches to the development of marketing strategies, which will make it possible not only to understand its role in the development of the enterprise, but also to evaluate the effectiveness, influence, direction and efficiency of this activity in as a whole.

It is worth noting that the opinions of the above-mentioned scientists and other well-known theoreticians and practitioners in the field of development of marketing strategies, in particular in modern business conditions, are not sufficiently systematized. The principles and methods of developing marketing strategies of enterprises, which have been widely used for a long time and developed by scientists, have proven their practical significance and economic efficiency and can be partially used. But for this, first of all, it is necessary to study in detail the theoretical foundations of the development of marketing strategies, to systematize them, to determine the possibility of their adaptation and application in modern conditions.

The fundamental basis of the development of marketing strategies is the concept of marketing communications. On the basis of the above, it is possible to conclude about the importance of the perception and implementation of marketing as a management process, which occurs due to the purposeful influence of the subject of management (marketing as a system of institutions) on the object of management (relationships with buyers, and, as a result, consumer demand) .

It is advisable to carry out a thorough analysis of the publications of domestic and foreign scientists, as well as specialized marketing associations of various countries of the world regarding the terminological basis of the concept of "marketing strategy". First of all, it should be noted that most scientists identify the researched concept with the concepts of "marketing management", "marketing management", "marketing management". In our opinion, such an approach in the interpretation of the concept is not appropriate, since it has a deeper scientific meaning. In addition to the fact that this is a systematic and purposeful activity of the enterprise, which includes planning, organizational, motivational, control and coordination actions (that is, the main functions of management), which should be aimed at meeting the actual needs of consumers through the implementation of research on demand and requirements, management of marketing activity involves the use of modern methods of sales promotion, adaptation to dynamic changes in the marketing environment and, as a result, obtaining profit and ensuring the stability of competitive positions on the market.

The American Marketing Association considers the interpretation of the studied concept in accordance with the possibilities of adaptation to internal and external changes and defines it as a constant and repetitive process of establishing marketing goals for the organization (taking into account internal resources and market opportunities), planning

and implementing activities to achieve these goals and measuring progress on the path of their achievement.

The etymology of the concept of marketing strategy with selected approaches to interpretation is presented in Table 1.

Table 1

Etymology of the term "marketing strategy"

<i>No</i>	<i>Author/source of interpretation of the concept</i>	<i>Content of the concept</i>
<i>Approach to interpretation of the concept</i>		
<i>Internet marketing</i>		
1.	Batinić, I. (2015). [1]	internet activity, which includes the analysis, planning, implementation and control of measures aimed at the formation and intensification of demand for goods or services and increasing profits.
2.	Nadanyiova, M., Majerova, J., & Gajanova, L. (2020). [2]	planning, organization, control, and implementation of marketing programs, policies, strategies, and tactics designed to create and satisfy demand with online marketing communication.
3.	Parvez, S. J., Moyeenudin, H. M., Arun, S., Anandan, R., & Janahan, S. K. (2018). [3]	analysis, planning, implementation and control of activities designed to establish, strengthen and maintain mutually beneficial effects
4.	Yu, C. E. (2020). [4]	a part of company's strategy, including advertising, sales promotion, personal sales and public relations, is gradually changing and expanding.
<i>Hotel distribution approach</i>		
5.	Huang Yin, C., Goh, E., & Law, R. (2019). [5]	building a longterm sustainable relationship with the hotel industry which requires to be innovative and capable of enhancing their value to hotels.
6.	Theocharidis, A. I., Karavasilis, G., Vrana, V., Kehris, E., & Antoniadis, K. (2019). [6]	affecting customers' intention to perform social media marketing activities in the hotel industry
<i>Competitor approach</i>		
7.	Ye, F., Xia, Q., Zhang, M., Zhan, Y., & Li, Y. (2022). [7]	harvesting online reviews to identify the competitor set in a service business.
<i>Digital approach</i>		
8.	Khmiadashvili, L. (2019). [8]	the promotion of products or brands through online. In recent days the demand of digital marketing in hotels has become increasingly high with Social Media Marketing (SMM) which works with social networking sites and Search Engine Optimization (SEO) making the website to appear in search results with advertisement on Google and online magazines by search engine marketing (SEM), video marketing through you tube and websites are types of digital marketing.
9.	Kapoor, R., & Kapoor, K. (2021). [9]	activities that include building the organizational structure of a business entity, building a marketing information system from traditional to digital marketing

10	Kaur, G. (2017). [10]	as the basis of the effective activity of enterprises, with the allocation of functions of inter-organizational interaction
11	De Pelsmacker, P., Van Tilburg, S., & Holthof, C. (2018). [11]	awareness by all participants of the economic expediency of comprehensive assistance to each other in the implementation of plans, digital marketing strategies, online reviews and hotel performance.
12.	Leite, R. A., & Azevedo, A. (2017). [12]	activities within the enterprise, aimed at the market environment, which is based on the application of information technologies, establishing constant communication with the consumer
13.	Mahendru, A. (2015). [13]	increasing the adaptability of marketing tools in accordance with the needs of the market, and will also contribute to the achievement of the goals of the enterprise's marketing activities through digital marketing.
14.	Mahmutović, K. (2021). [14]	development and validation of the scale for measuring digital marketing orientation
15.	Wibisono, I. P. (2019). [15]	iterative process of establishing marketing goals for an organization taking into account internal resources and market opportunities
16.	Alghizzawi, M. (2019). [16]	planning and implementing activities to achieve goals in consumer behavior, and measuring progress toward achieving them

*Source: generated by the authors.*

Despite the large number of scientific works devoted to various issues related to the development of the company's marketing strategy, to date there is no single scientifically based interpretation of the studied concept. Each of the scientists uses a separate approach to defining the concept, which, in turn, allows us to assert a wide range of properties, principles, and concepts of strategy development in most areas and types of economic activity. In our opinion, for the actualization and adaptability of the researched concept to the modern conditions of hotel operation in the real business environment (including in the tourism business), it is advisable to apply all separate approaches, in particular, functional-complex, socially-oriented, systemic, marketing-oriented, information technology and process.

Thus, with the evolution of market relations, marketing concepts developed, acquired new features, thanks to which enterprises that applied them had new opportunities to retain consumers and reduce the negative impact of environmental factors on performance.

Therefore, digital interaction marketing acquires additional distinguishing features, such as:

- formation of digital interaction of hotel enterprises, as the basis of effective activity of enterprises, with the allocation of functions of inter-organizational interaction;
- harmonization of the missions of hotel industry enterprises, which involves awareness by all participants of the economic expediency of comprehensive assistance to each other in the implementation of plans;



- unification of service quality standards for partners included in the hotel network, which makes it possible to increase the value of the service, and therefore consumer loyalty;

- feedback with consumers and partners, which takes place on the basis of client and partner databases and contributes to coordination and optimization of relations between all participants in the service provision process;

- social responsibility, which is implemented thanks to the implementation of the principles of social and ethical marketing, which leads to an increase in the hotel's popularity, on the one hand, and a decrease in the number of dissatisfied consumers, on the other;

- the development of partnership relations with the aim of determining strategic areas of activity that are capable of ensuring the flexibility of hotel enterprises in the long term, which is achieved, firstly, by finding the maximum number of points of differentiation in the choice of the hotel concept, and secondly, on the basis of studying the market situation .

Understanding the essence of inter-organizational interaction and the goals that must be achieved allows us to consider the following stages of the marketing management process: analysis of market opportunities and threats (conducting marketing research, analysis of the marketing environment); selection of the target market (determination of the volume of demand; segmentation of the consumer audience; positioning of the product on the market); development of a marketing complex (creation of a product/service; monitoring and determination of an adaptive price; means and ways of implementing a product/service with further promotion on the market); planning, implementation and control of marketing activities.

It is worth noting that hotel chains are characterized by certain peculiarities in the formation and implementation of the activity management system in general and the management of marketing activities in particular. Among the features, it is advisable to single out:

- 1) systematic updating and carrying out restructuring changes of necessary business processes of hotel enterprises;

- 2) simultaneous introduction and application of the necessary changes in the activities of all hotels of the network;

- 3) complexity of product (service) implementation to the end user;

- 4) unified standardization of processes of service and support of communications with consumers;

- 5) motivation of the hotel staff for quality performance of functional duties due to the creation of specialized programs/courses, conducting training events and exchange of experience, etc.;

6) the integrity of the vision and the achievement of common, unified goals by the hotels included in the network;

7) communications and communication support at all levels of hotel management;

8) awareness of consumers and hotel staff about changes in activities, introduction of a new product (service), proposed promotional offers, etc.

To present the author's vision of interpretation of the concept of digital marketing strategy of hotel enterprises, it is appropriate to consider its object, subject and main tasks. Thus, the object is the process of managing the marketing activities of network enterprises, which includes the analysis of market opportunities and threats (conducting marketing research, analysis of the marketing environment); selection of the target market (determination of the volume of demand; segmentation of the consumer audience; positioning of the product on the market); development of a marketing complex (creation of a product/service; monitoring and determination of an adaptive price; means and ways of implementing a product/service with further promotion on the market); planning, implementation and control of marketing activities. The subject of development of a digital marketing strategy of enterprises is the hotel owner.

The main tasks of developing a digital marketing strategy can be conditionally divided into three blocks, in particular, monitoring and forecasting of the activities of hotel enterprises; strategic and tactical planning; improvement and development. Each of the three blocks of tasks includes key aspects that the hotel should take into account when managing marketing activities

It should be noted that the process of developing a digital marketing strategy is long-term and cyclical and requires its coordination within the strategic management of the enterprise.

Thus, this cyclical process should begin with the definition of the components of the marketing environment.

Moreover, special attention should be paid to the development of digital technologies. Today, the use of digital communication tools helps in the implementation of marketing activities already at the stage of market research. Considering digital communication tools as a means of interaction between hotel enterprises and consumers, it should be noted that most scientists identify this concept with the concept of Internet marketing. However, we believe that in the conditions of the informational globalized economy, the company will succeed if the development and provision of services is the result of mutually beneficial cooperation with consumers and stakeholders, and is carried out on the basis of client and partner databases within the framework of corporate service quality systems.

Currently, the accumulation and processing of databases has a decisive contribution to increasing competitiveness, since digital transformation involves the transition to new technological models, where digital marketing is a key part of strategies for growth and

customer loyalty. Internet and digital marketing have become important factors in campaigns that attract and retain Internet users. A study by Matos N., Lizcano D., García J. proves the importance of digital marketing as the main way to attract and retain consumers [18].

Kotler and Armstrong described digital marketing as a form of direct marketing that connects consumers with sellers electronically through interactive technologies such as e-mails, websites, online forums and newsgroups, interactive television, mobile communications, etc. [19]

Below is the classic definition of the American Marketing Association: "Marketing is a function of an organization that includes a set of processes for creating, promoting, and providing consumer value based on customer relationship management, as a result of which the organization assumes risks and receives help." It does not mention trends in the personalization of relationships with consumers, because in formulating this definition, the level of technology could not provide the personalization of work with consumers [20].

Based on the above definitions, we can come to a general conclusion about the need to use digital communication tools when developing a marketing strategy. The main goal is to study the needs of users of mobile applications, social networks and website visitors to profitable consumers.

The adaptation of e-commerce websites to electronic devices to increase the number of visits has led to the emergence of new trends: the use of applications on mobile devices [21]. In addition, social commerce and especially the collaborative economy will play an important role in the aforementioned changes. Thus, the same model as shared consumption or social commerce has existed for years: the sharing economy, although it has some differences that characterize it as its own economic model. Before its appearance, and especially before the birth of the Internet and Web 2.0, the exchange of products was limited to the immediate geographical area of the consumer. However, without the advent of web technologies, there would be no collaborative economy as we know it. So, this is the result of the transformation of the digital environment created on the Internet in the last fifteen years [22].

In connection with the complete transition to mobile gadgets, fast and frequent changes in algorithms of search engines, it is necessary to use new digital communication tools. The high level of competition and the fight for the attention of users in all directions forces businesses to look for ways to attract customers not only with the help of SEO and contextual advertising, but also with the help of many other tools. In addition to high competition, another reason for this is the desire not to depend on one distribution channel.

By 2023, about 30% of all online activities will be performed without the help of hands, and 50% of searches will be performed using voice commands. Brands are looking

for ways to develop apps like Siri, Google Assistant and Bixby. However, as these predictions come true, marketers will inevitably begin to optimize content for voice search, which is very different from traditional content. Voice queries are formulated more freely than printed ones, and their average length is about twice as long: from 1-3 words in a printed search, it grows to 3-5 words in a voice search. "Restructuring" of content for voice search may become one of the main trends in the near future. Not all users use the voice functions yet. Surveys have shown that 62% of marketers are not developing this area, in large part because they do not realize the full benefits of this trend. But this is only a temporary phenomenon. Marketing tools are integrated with voice services: there are many applications for voice shopping, ordering food and getting information [23].

The results of research by N. V. Popova and A. V. Kataeva proved that when choosing goods or services via the Internet, consumers pay attention to the design of websites (42.15%), convenient navigation (35.87%), speed of access to site (34.69%) and functionality (33.51%). The above-mentioned characteristics increase consumers' sense of professionalism, convenience, satisfaction, which contributes to increasing the level of trust in the website. From the point of view of trust marketing, it is important to use design, convenient navigation, functionality, and speed of operation to attract consumers to visit websites, create a sense of trust, encourage Internet users to take certain actions, and create a positive emotional connection [24].

According to Latha G., Karthikeyan B., Sitharthasankar V., due to the use of digital technologies, consumers have easy access to various products and services. The advantages of online communications significantly exceed the disadvantages, which, when eliminated or minimized, help companies gain a competitive advantage over their competitors [25].

Along with this, the role of social networks is growing. In terms of audience coverage, this communication marketing tool takes a leading position on the Internet. Pages in social networks, created on the technological and ideological foundations of the Internet, allow users to quickly update information and exchange their content. From a marketing perspective, social media is a marketplace where both sellers and buyers coexist with many entities and interact with each other in many ways. SMM refers to the practice of using social media technology to easily communicate with consumers, offering lower costs, building personal relationships and sharing offers. In particular, consumer reviews in social networks influence the purchase decision [26].

With the help of communication agencies, hotels segment consumers, send targeted advertising, and remind about themselves. The vast majority of such information, of course, receives feedback from the consumer, but the increase in the amount of information often causes irritation. Hence the actual banner blindness, ad blocking. According to statistics, every fifth user does so. When choosing communication channels,

consumers focus on information about tariffs and distribution, they prefer to search for offers through online and mobile channels. According to studies, the use of online and mobile channels increases the productivity and effectiveness of marketing activities. Improving the processes of forming a communication system on the Internet will lead to improved consumer satisfaction. [27].

The transformation of approaches to the management of marketing activities in connection with the emergence of new communication tools requires a change in the paradigm of the marketing complex. The availability of online tools offers more options, allowing you to make changes almost instantly, adapting to the mood and needs of consumers. With the help of virtual tools, it is much easier to choose platforms for advertising, spend the budget more efficiently and get the desired result faster.

Soegoto E., Simbolon T. define that digital advertising is always how content is presented, with the aim of exploiting opportunities to provide value to consumers, as opposed to encouraging purchase. Modified advertising is no longer sales-oriented or coercive. Businesses use paid channel media to promote offers in order to speed up the delivery of content to meet consumer needs. In this case, digital advertising acts as a means of brand promotion [28].

The hotel business, as an integral part of international tourism, needs adaptation to the needs of tourists. According to Datta B., Sajnani M., Thomas J., online travel agencies provide a point of contact over the Internet for potential customers to search for and ultimately book travel products. If offline travel agencies decide to have an online presence, management should try to identify needs and create value for potential customers. Internet pages face tough competition on the digital market [29].

According to the research of Priambodo B., Ani N., Jumaryad Y., the ability to use geolocation and analyze the preferences of mobile application users can promote relevant products so that potential customers automatically know the current location and information about the product. In addition to effectively reaching potential customers, mobile advertising should be easy to use, saving battery and Internet bandwidth. Server installation should be easy and affordable for small businesses [30].

It is very difficult to imagine modern business without digital tools, because it is the same knowledge system that helps business development. Marketing communications are not limited to visiting a website or downloading a mobile application. Constant work with the visitor, understanding his needs, response to requests, online dialogue and concentration of attention affect the effectiveness of marketing management. And in conditions of crisis and instability of the external environment, only strong brands survive, which have a clear program of promoting their products to the market.

The interconnectedness of all the mentioned elements is obvious. Moreover, the transformation and development of most of them is impossible without the simultaneous change of others. Thus, the growth of the enterprise's competitiveness contributes both to

an increase in the volume of income and to the conquest of the planned market share. At the same time, individual marketing goals cannot be realized simultaneously, such as maximizing profitability and minimizing risks. Therefore, the starting point for building a digital interaction marketing system is the consistency of goals and their subordination to the achievement of the main goal. The condition for the realization of the set goals is the organization of activities based on the relevant principles of digital interaction of hotel enterprises:

✓ The principle of commercial effectiveness of digital interaction marketing derives from the objective reality of the functioning of enterprises in the conditions of a market economy. Achieving any of the above goals is impossible without an appropriate financial basis. Therefore, the focus on the long-term and successful operation of the hotel should be based on increasing its own capabilities and taking into account the solvent needs of consumers, which ensures the systematic receipt of profit by the company and allows the implementation of the program of enhanced capital reproduction.

✓ The principle of a systemic approach to the organization of digital interaction marketing consists in understanding the subject of the hotel market at the micro level, as an integral part of the meso-system and the macro-system (environment), which requires the purposeful action of the subject in changing conditions of activity. At the heart of all decisions made at the enterprise should be interaction on a long-term basis with the goal and in the process of creating a competitive final product for target market segments. A systematic approach helps to expand the company's field of vision, which is manifested in its application of modern tools of marketing activity, as well as in the timely development of fundamentally new promising products, which, as a rule, gives a high commercial result.

✓ The principle of an integrated approach to the application of digital interaction marketing elements requires the interconnection and mutual agreement of all its tools, each of which, taken separately, is unable to ensure the achievement of the effect that can be obtained as a result of using the marketing complex as a whole.

✓ The principle of timeliness of an adequate reaction requires from the leadership mobility in decision-making, activity and offensiveness when developing a strategy and implementing marketing tactics of digital interaction, entrepreneurship and a creative approach to the search for and implementation of new marketing opportunities.

✓ The principle of purposeful formation of the necessary demand provides for the development of measures aimed at ensuring the priority attitude of consumers to the company's products and services thanks to the purposeful dissemination among real and potential consumers of information about the positive changes that are taking place, with the aim of adequately increasing the level of subjective quality.

✓ The principle of socio-ethical orientation of digital interaction marketing is not only ethical behavior in relation to society, which in practice means building activities

on the basis of sustainable development. At the same time, society and its members are partners, and the formation of effective partnership relations is aimed at creating favorable conditions in the future. Established relationships with partners open opportunities to obtain more sustainable long-term benefits.

Thus, the successful implementation of the concept of digital marketing of hotel enterprises requires an orientation towards digitization on the basis of benchmarking [31]:

1. The principle of compliance of digital tools with the company's chosen strategy. At the same time, the main goal of the strategy should be to attract the client to the enterprise (on the basis of strategic benchmarking).

2. The principle of an integrated approach to considering the specifics of service provision, which obliges entrepreneurs to take into account the structure of products and services, the specifics of their elements (based on benchmarking of characteristics, as well as the general).

3. The principle of differentiating the quality of products and services into technical, technological and social (ethical) components, which makes it necessary to focus attention on each of these components (on the basis of process and operational benchmarking).

4. The principle of achieving correspondence between the objective and subjective quality of products and services, which will ensure that adequate efforts are made to form the named types of quality perception (associative benchmarking).

5. The principle of an individualized approach to the production of products and services, based on the application of which the enterprise should choose an appropriate type of personalization of services (client benchmarking).

6. The principle of prioritizing those innovations that were recognized as more important with the help of N. Kano's methodology (client benchmarking).

Adherence to these principles will make it possible to develop a flexible program as a set of goals and objectives (as well as methods and means of achieving them) aimed at increasing the level of competitiveness of products and services, bringing their quality into line with the needs of target segments.

The considered basic principles of digital marketing of hotel enterprises are the basis for developing a strategy. In accordance with these principles, we will formulate the tasks facing the participants of the system: consumers and stakeholders.

The main task of digital interaction marketing is to influence the level, timing and nature of demand in such a way that it helps it achieve its goals. For hotel enterprises, the generalized main task takes the form of a differentiated series of specific tasks:

□ Formation of a system of monitoring the markets of potential partners in order to create an information base for the development of a sound marketing policy. The implementation of this task will make it possible to analyze and identify strategic areas

of activity and trends in their changes, as well as to analyze the market situation and identify new opportunities and threats in a timely manner.

□ The development of the assortment policy, including planning, involves the implementation and control of the product policy, in particular, the determination of such a structure of the assortment of products and services that would not only satisfy the existing needs of consumers, but also meet future needs.

□ Ensuring the continuity of the formation of an effective system of marketing tools, which would ensure a stable position of all members of the partner network in the traditional and new market segments in the long term. Coordination of the actions of partners should be carried out not only by the time-of-service provision, but also by the level of service quality, which encourages hotels to develop and adhere to service standards.

□ Development of measures aimed at the distribution of own and hired resources between different market segments in order to ensure the maximum profitability of the use of these resources

□ Integration of hotel marketing into hotel network marketing. In addition to strengthening partnership relations, an unconditional beneficial effect can be obtained from the coordination of efforts.

Thus, the factors that stimulate the implementation of the digital interaction marketing concept are becoming more and more influential in the hotel market of Ukraine. On the one hand, competition is intensifying and the external environment is changing, as a result of which the problem of attracting and retaining consumers is worsening. On the other hand, the role of hotel market entities united by a common goal is growing, interacting on a long-term basis with the goal and in the process of creating a competitive final product for target market segments, with the aim of achieving a system of mutually agreed economic interests through coordination and distribution of resources.

In such conditions, even the coordinated work of the entire team of one individual hotel will not ensure success in the market. That is, the entire complex of marketing activity management elements is of particular importance for the successful implementation of the digital marketing system

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## **Chapter 3**

# **MANAGEMENT OF ORGANIZATIONS**

### **3.1. RISK MANAGEMENT IN THE PERSONNEL CONTROL SYSTEM OF THE ENTERPRISE**

Competitive advantages of enterprises can be formed primarily through the effective use of labor and the intellectual potential of their employees in terms of economic processes globalization and accelerated development of science, technology, and technologies. Human being has a managing and central role in the system of public production and economic relations.

For this reason, the issue of carrying out an effective personnel management process is of particular attention. The above-mentioned issue would comprehensively solve problems related to the use of the employees' potential to ensure the effectiveness of enterprise activity and its protection against risks and threats in the field of personnel management.

The personnel management system is a guarantee and essential condition for increasing the efficiency of industrial enterprises. The staff is a source of activity in achieving the goals of the enterprise.

The schematic diagram of the formation of the "personnel" category in the process of human progress has been presented in Figure 1 ([Dovhan, Mohonko & Dudukalo 2015]), which characterizes the logical transition to increasing the importance of personnel in modern production, more careful consideration of the interests of the employee as an individual.

Therefore, we believe that personnel management is a process of planning, organizing, motivating, and stimulating the effective activity of personnel, monitoring their development, and increasing the professional qualification level for purposeful influence on the implementation of production and economic activities to achieve the strategic goals and efficiency of the enterprise.

Based on the theoretical justification of the approaches to determine the enterprises' personnel, the main objective of the personnel has been formed, which consists in ensuring the development and competitiveness of the enterprise as a whole.

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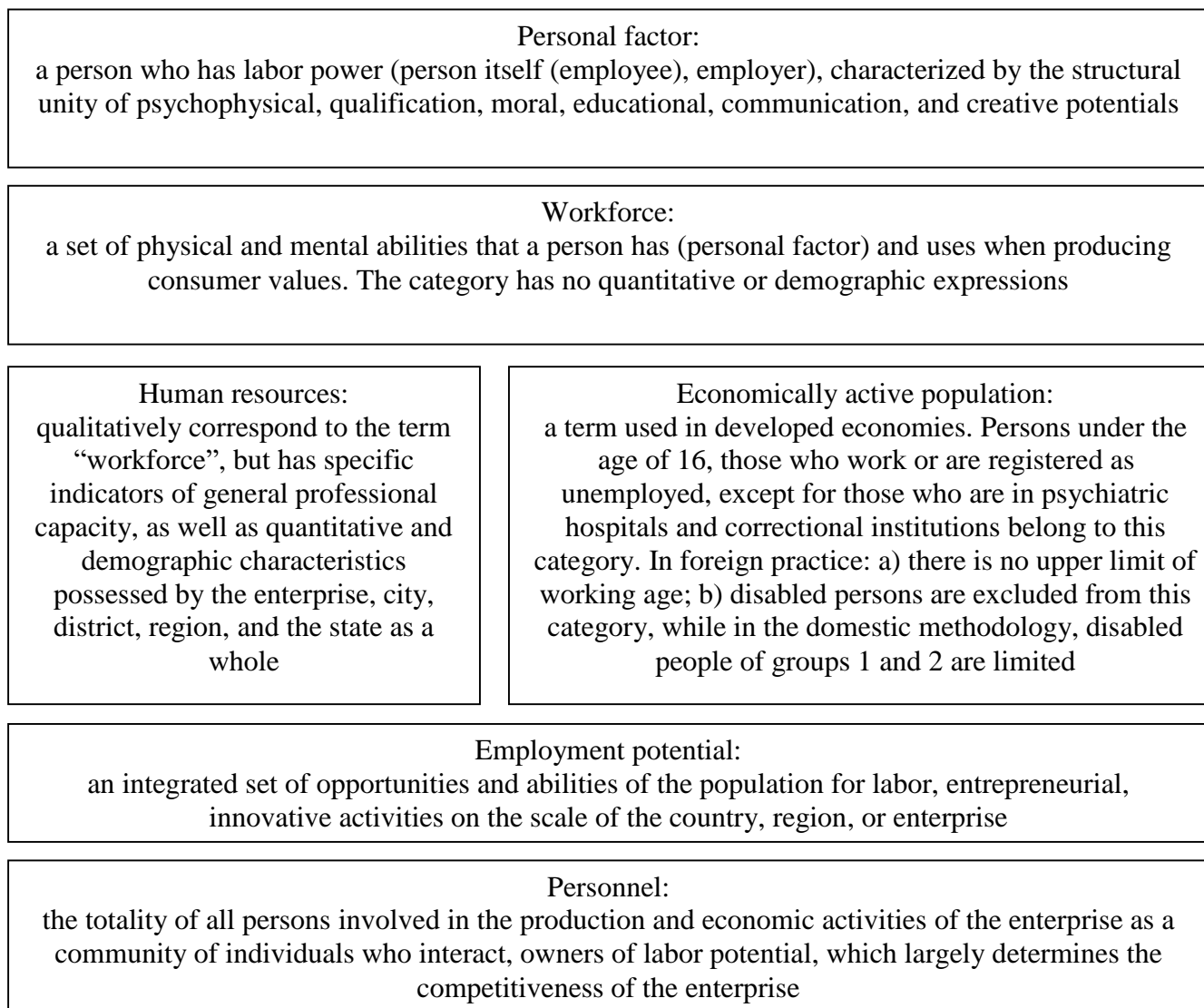


Fig. 1. Constituent concepts of the notion of “personnel”  
Source: (Dovhan, Mohonko & Dudukalo 2015)

The formation of the company’s personnel is the identification of professional, innovative, intellectual, social, and psychological competencies of the management, which can increase the efficiency of the company’s management.

The effectiveness of personnel management has been defined as an activity aimed at the rational use of employees to achieve personal goals in particular and the objectives of the enterprise in general. The latter are traditionally associated with ensuring the efficiency of the enterprise, which means obtaining the maximum profit.

Though, more and more often, efficiency is considered not only in economic terms - as economy, quality, productivity, innovation, and profit, but also in a broader context, and has been associated with such concepts of a personal and psychological level, such as employees satisfaction with their work, participation in the enterprise teamwork, high level of self-esteem of the team, motivation of personnel to work effectively.

The main directions of effective personnel management of the enterprise could be the calculation of personnel needs, recruitment, selection of personnel, personnel development, creation and maintenance of a favorable social and psychological climate, motivation, and stimulation of personnel.

The training of professional managers is necessary for the effective functioning, development, and competitiveness of enterprise. Based on the research, approaches to the effective use of the enterprise personnel have been identified, which, in turn, are implemented through various forms (Fig. 2).

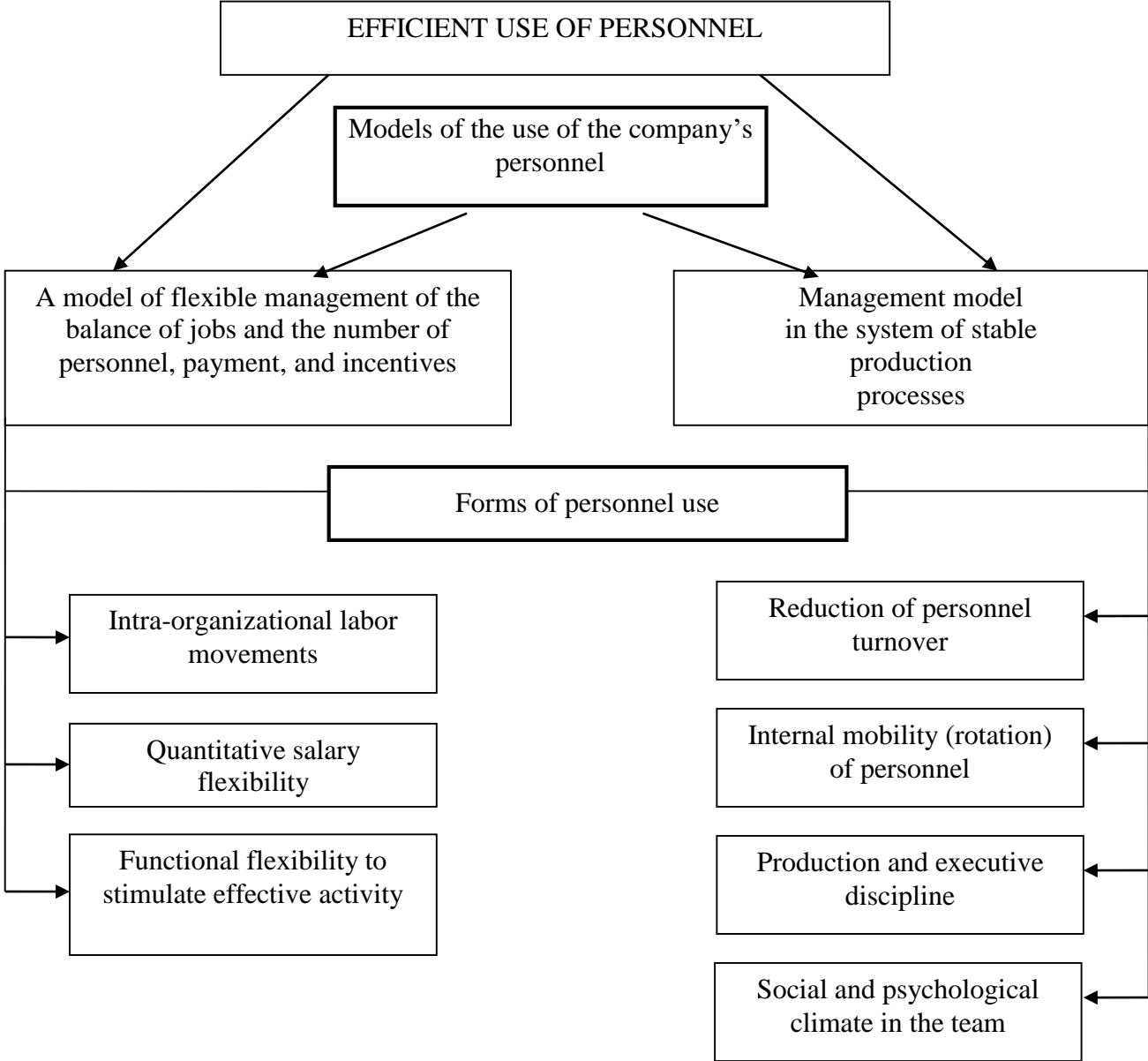


Fig. 2. Models and forms of the use of the company's personnel  
 Note. Made based on (Kharun 2008)

Thus, personnel management, as a multifaceted and exceptionally complex process, should be effective, systematic and complete based on the comprehensive

solution of personnel problems, the introduction of new and improvement of existing forms, and methods of work. Personnel is the most valuable and significant strategic resource of the enterprise, and its formation and use are factors of competitive advantages.

Monitoring of the external and internal environment in general and the study of risks associated with the implementation of this process, in particular, is an important direction of the personnel management process, which directly affects its effectiveness. Uncertainty is a risk in the company's personnel management system, while it is associated with personnel activities and can cause certain losses (Kryvorotko 2007, Mashyna 2003, Danyiuk & Petiukh 2004). Taking this information into account, the question of identifying risks in the process of personnel management, as well as finding ways to reduce identified risks, arises. Potentially possible risks associated with personnel activities have been listed here (Table 1).

Table 1

Potentially possible risks in the process of personnel management of the enterprise

№	Type of risk
1	2
1	Job risk (the risk of incompatibility of the employee's position with the objectives set before him)
2	Qualification risk (the risk of incompatibility of the employee with the position he holds)
3	Risk of malfeasance
4	The risk of employee unreliability (related to short-sightedness, indifference, hypocrisy, vindictiveness, mercantilism, low stress resistance, etc.)
5	Risk of personnel turnover
6	Risk of career advancement lack
7	Risk of the ineffectiveness of the labor motivation system
8	Risk of the subjectivity of personnel evaluation methods
9	Risk of inefficient distribution of responsibility between employees
10	Risk of imbalance of gender, age, and educational groups of personnel
11	Risk of deterioration of the social and psychological climate in the team
12	Risk of incorrect use of production equipment
13	Risk of increased labor intensity
14	Risk of a negative impact of the work monotony on the activities of employees
15	Risks of the irrationality of work and rest regimes
16	Risks of disproportions in the number of employees of certain departments
17	Risk of non-acceptance of innovations by employees
18	Risk of an employee's illness with a temporary loss of working capacity

Note. Made by the author

One of the main risk factors is the salary range at the company. It means that risks in the personnel management process mainly arise from uncompetitive, unfair (in the opinion of the employee), and inadequate (to the effort expended) wages. In this regard, the company can take the following measures to minimize the level of risk in the process of achieving a high level of personnel management efficiency caused by an unsatisfactory level of wages:



- revision of salary ranges based on market situation study;
- revision of the wage system to increase its fairness;
- development of the system for evaluating the performance of employees for the improvement of the labor remuneration system;
- presentation to employees of a clear relationship between remuneration and performance of assigned tasks;
- formation of a benefits system following individual needs and desires;
- involvement of employees in the development and implementation of the work evaluation system and the organization of the performance-based payment system.

To overcome the risks of a decrease in labor productivity enterprises should form a system for evaluating and determining the effectiveness of employees' activities, which provides for certain measures (Fig. 3).

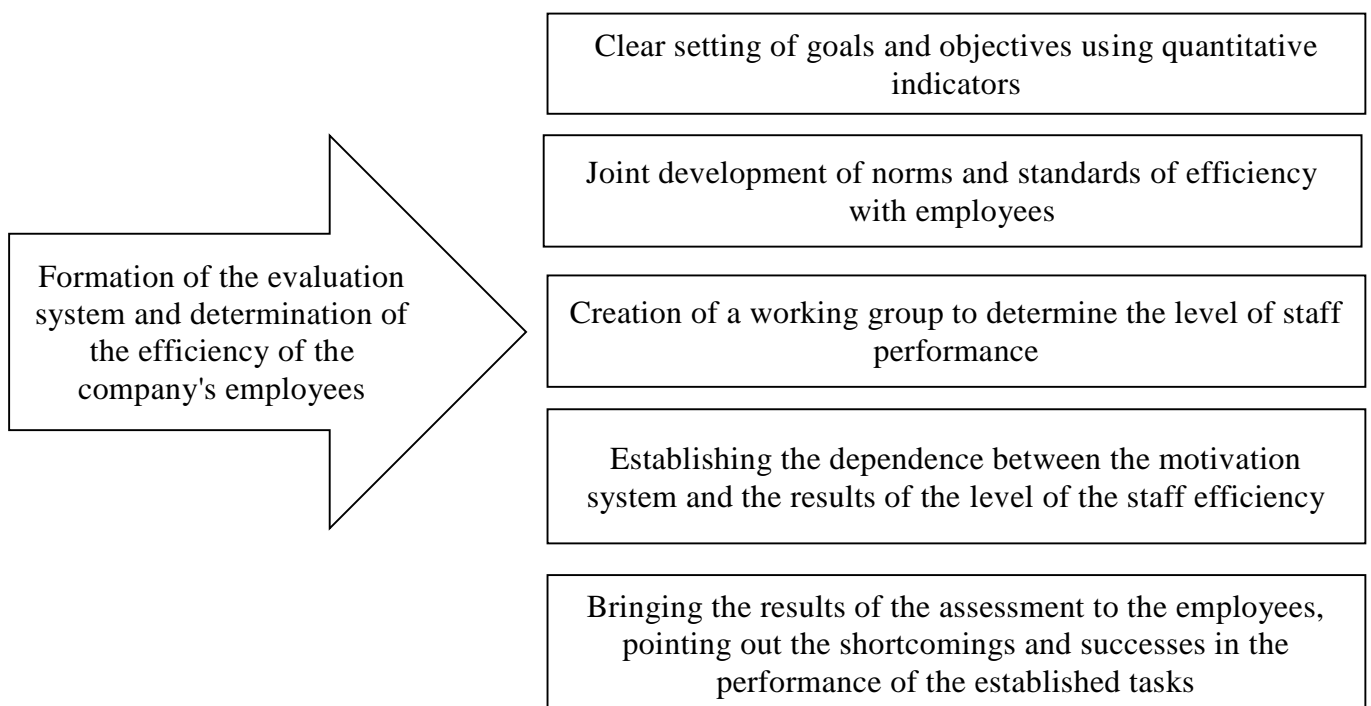


Fig. 3. Measures to overcome the risks of a decrease in labor productivity at the enterprise

Note. Made by the author

We believe that a significant number of risks arise due to the mismatch of knowledge and skills of employees with the requirements of the position or the requirements of a specific workplace. Therefore, it is necessary to use the training of personnel, which will make it possible to avoid such risks as:

- risks of incompetence and lack of confidence in achieving the results expected from the employee;
- risks of inappropriate skills and unsatisfactory knowledge of the employee;

- risks of dysfunctional conflicts.

From our standpoint, inappropriate expectations of employees' career growth in a certain way lead to the risk of personnel turnover. Therefore, the enterprise needs to use measures to retain the key employees of the enterprise (Fig. 4).

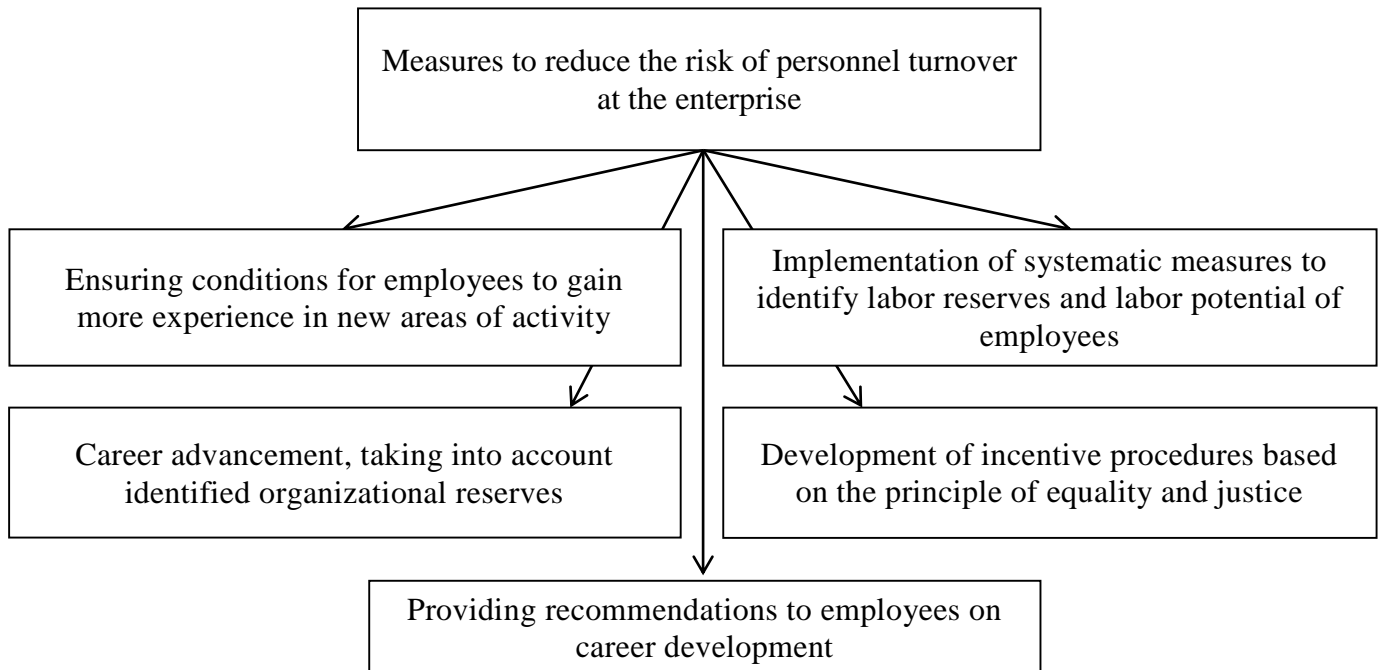


Fig. 4. Measures to reduce the risk of personnel turnover at the enterprise

Note. Built by the author

Thus, to overcome several risks in the process of effective personnel management, we consider it expedient to increase the commitment (loyalty) of employees to the enterprise [9]. It is advisable to apply the following measures that increase the level of commitment:

- involvement of employees in the formation of the mission, development of goals, measures, and tasks;
- communication of the organizational mission, goals, measures of stimulation, and evaluation of personnel activity to all employees of the enterprise;
- providing employees with the opportunity to express their opinion and suggestions regarding the improvement of management elements at the enterprise;
- making changes to the organization and personnel activities only after corporate-wide discussions or consultations with the employees affected by the changes.

To reduce the risks of compatibility of activities, and the risk of dysfunctional conflicts, it is necessary to apply conflict prevention measures, namely:

- selection of managers and leaders with well-developed leadership qualities;

– training managers in methods of handling complaints and solving conflict situations;

– implementation of improved procedures for handling complaints.

Thus, we found that there are many measures and methods of reducing the level of risks of personnel activity, but we believe that in each situation, taking into account internal and external factors, the most effective measures should be chosen. For this purpose, measures to avoid and reduce the level of risks of personnel activities will be grouped and presented in the table. 2.

Table 2

Measures to avoid and reduce the level of risks in the process of effective personnel management of the enterprise

Groups of measures to avoid and reduce risks	Organizational level	Team Level	Individual level
Risk avoidance or prevention	<ul style="list-style-type: none"> <li>– refusal to hire inexperienced staff;</li> <li>– rejection of time-consuming projects with a high probability of risks of personnel activity;</li> <li>– selection of leaders among managers.</li> </ul>	<ul style="list-style-type: none"> <li>– reforming a unit or team, its reorganization to avoid risks;</li> <li>– physical and psychological protection of units.</li> </ul>	<ul style="list-style-type: none"> <li>– the use of consultants in the absence of an employee with the appropriate skills and knowledge;</li> <li>– dismissal of irresponsible employees.</li> </ul>
Risk limitation	<ul style="list-style-type: none"> <li>– establishment of general organizational limits and norms;</li> <li>– development of the organizational structure of enterprise management;</li> <li>– development of the system of control and evaluation of personnel performance.</li> </ul>	<ul style="list-style-type: none"> <li>– clear allocation of resources between units;</li> <li>– regulation of individual business processes managed by a certain unit.</li> </ul>	formation of individual norms, standards and rules, taking into account the social and psychological characteristics of the employee.
Risk distribution	<ul style="list-style-type: none"> <li>– diversification of labor resources;</li> <li>– diversification of cooperation with recruiting agencies.</li> </ul>	– creation of joint projects between different units.	– joining formal and informal groups to complete tasks.
Risk transfer	Workers insurance.	Intra-team insurance of personnel activities.	Individual insurance.
Acceptance of risk	<ul style="list-style-type: none"> <li>– staff work planning;</li> <li>– formation of personnel reserves and other reserve funds;</li> <li>– investment in personnel;</li> <li>– personnel selection;</li> <li>– staff training and development;</li> <li>– formation of a corporate-wide risk management strategy of personnel, policy and tactics.</li> </ul>	<ul style="list-style-type: none"> <li>– financial and resource, information support of activity;</li> <li>– formation of teams;</li> <li>– stimulation of teamwork;</li> <li>– development of provisions for the activities of the unit.</li> </ul>	<ul style="list-style-type: none"> <li>– formation of individual career cards;</li> <li>– formation of compensations, benefits and allowances for making decisions with a high level of risk;</li> <li>– formation of job instructions.</li> </ul>

Note. Source (Romanenko 2011)

To prevent risks in the process of personnel management, it is necessary to form systems for diagnosing, monitoring and forecasting risk creation, which will increase the efficiency of the personnel management of the enterprise, will make it possible to develop adequate risk avoidance measures and increase the probability of achieving the established goals of the enterprise. Meanwhile, we suggest involving the most qualified and experienced employees of the enterprise who will be able to perform this task efficiently and effectively in the development of such a system.

Measures to limit risk in the process of personnel management combine a set of approaches aimed at establishing limit norms, standards of personnel activity for those employees, their types of activities, spheres of operation, which tend to exceed the level of the permissible level of risk. We believe that within the scope of using these measures, it is expedient to identify the social and psychological characteristics of employees and create individual restrictions on their activities. In addition to the development of norms and standards, it is necessary to form a mechanism for changing the established limits, which should include effective feedback, since the dynamism of the employee's environment forces frequent changes in rules, standards and norms.

As the scientists note, it is advisable to set such restrictions not only from above (the maximum amount of resource use, the maximum level of allowance for implementing a decision or achieving goals, etc.), but also from below [Moroz, Karachyna & Halimon 2008]. Fixing the lower limits will force employees to make risky decisions and encourage creative activity. Therefore, we offer to single out the following issues among the common standards in personnel activities:

- maximum risk level when taking economic risks;
- restrictions on the purchase of goods and resources from suppliers;
- regulations for speeches and presentations of their proposals;
- standards for submitting reports;
- restrictions on the terms of order processing, etc.

Risk distribution in the process of personnel management should consist in expanding the range of persons responsible for the occurrence of personnel activity risks and redistribution of losses in the event of negative consequences arising from the action of these types of risks. We believe that to reduce risks in the process of personnel management at the enterprise, it is advisable to use diversification in terms of recruitment through personnel agencies, concerning organizations that provide training, retraining and advanced training of personnel, diversification in remuneration of employees and socio-psychological stimulation of their activities, etc.

In practical activities, they actively use the distribution of risks in the process of personnel management by creating joint projects between different units, stimulating mutual assistance and mutual benefit of units, uniting teams to fulfill goals and tasks. We consider this measure to be effective, as it will make it possible to reduce the risks of low

competence and dysfunctional conflicts at the enterprise. At the individual level, risk distribution should involve the active involvement of employees in management decision-making processes, discussion of strategies and goals, etc. It is also necessary to stimulate the employee's loyalty to the enterprise, thereby reducing a number of risks of personnel activity (labor productivity, violation of labor discipline, etc.) through the formation of informal organizations (interest groups), ensuring their activities, etc.

The transfer of risks in the process of personnel management, in our opinion, will be most effective when implemented with the active participation of banks and state social assistance funds. For example, banks, together with the enterprise, should create conditions favorable to employees for providing loans, placing deposits, that is, solving the material and household problems of employees. Such tripartite cooperation (enterprise-personnel-bank) enables each of the participating parties to realize their interests and goals, including reducing the risk of the enterprise's personnel.

We believe that within the framework of risk acceptance, it is important to develop corporate-wide strategies, policies, tactics and a budget for managing all aspects of the company's personnel [Bilorus 2008]. Within the framework of the strategy adoption, it is important to create reserve funds that would cover unforeseen losses due to the negative impact of the risks of personnel activities. Thus, at the team level, units should be provided with appropriate financial, informational, energy, and material resources, which will make it possible to form adequate reactions to the risk of personnel activities.

At the individual level, it is necessary to develop individual career maps, determine the amount of compensations, allowances and bonuses for making risk management decisions, enter the scope of responsibility in job descriptions.

The importance of the control process to ensure the optimal level of risks in the process of personnel management is presented in Fig. 5.

The complexity of controlling objects that affect the occurrence and level of risk will ensure the optimal level of personnel activities risk, thereby influencing the enterprise's personnel management process, and the effectiveness of its activities.

Consequently, we will present the main directions for improving the efficiency of personnel management (Fig. 6).

We believe that increasing the efficiency of personnel management is possible with the awareness of a strategic approach to the organization of the personnel management process. The organization of the personnel management process should be carried out based on the strategic tasks of the enterprise, and not be only a management function that responds to certain problems. The advantages of this approach for a business entity, in our opinion, consist of the rational use of personnel resources, the consistent development and implementation of management solutions in terms of ensuring effective personnel management, which are oriented towards sustainable development in the conditions of intense competition on the market. Meanwhile, the enterprise personnel should not be

considered as expenses that need to be reduced, but as a strategic resource that needs to be effectively managed and create conditions for its development.

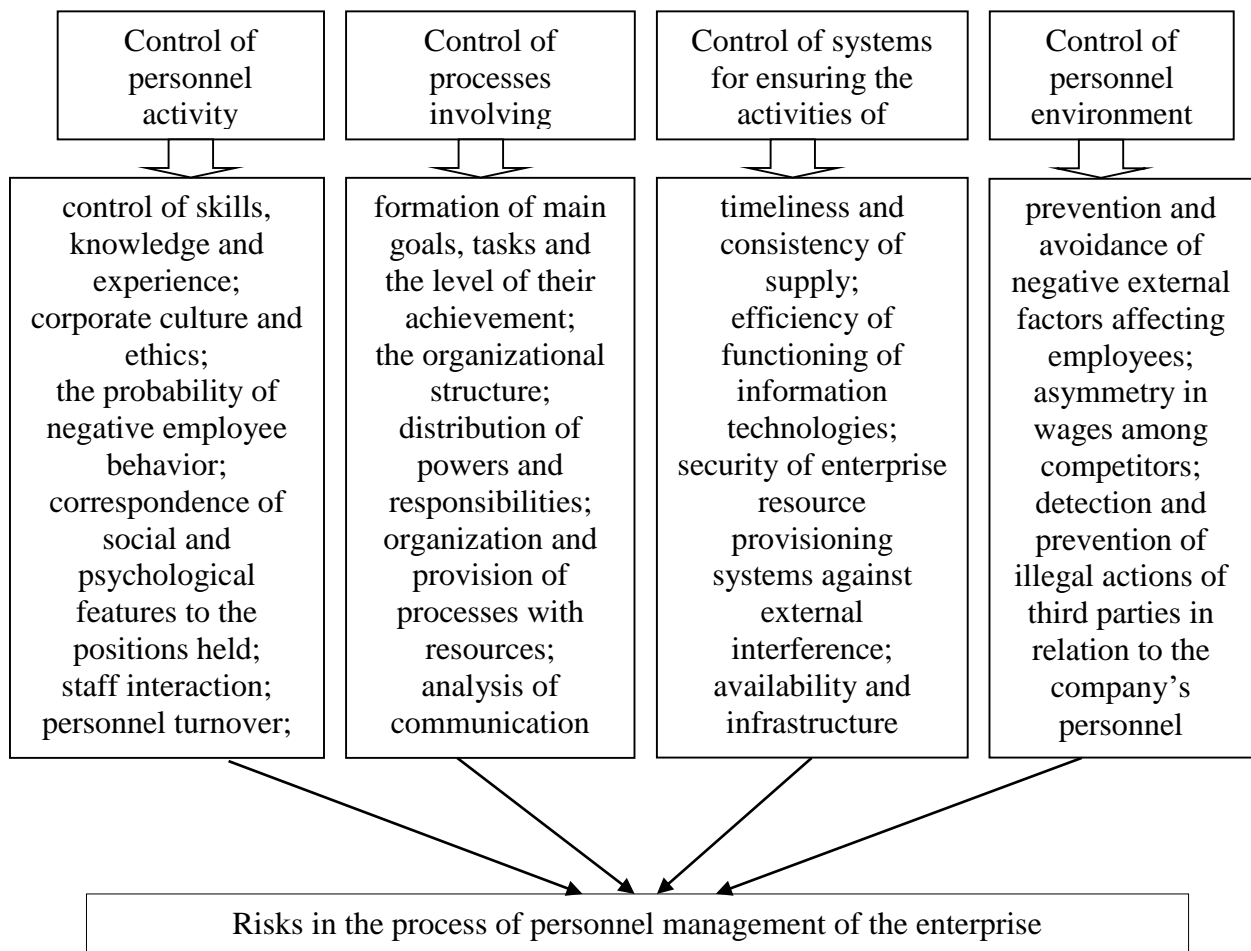


Fig. 5. Ways to reduce risks in the process of managing the company's personnel on the basis of control

Note. Source (Romanenko 2011)

The application of a strategic approach to the personnel management process will make it possible to obtain a synergistic effect, in case if the following conditions are met [Petrova 2005]:

- participation of employees in discussing the company's problems and making management decisions;
- delegation of authority to subordinates;
- assessment of the strategic potential of the enterprise;
- assessment of external and internal threats to the implementation of an effective personnel management process;
- functioning of the extensive communications system.

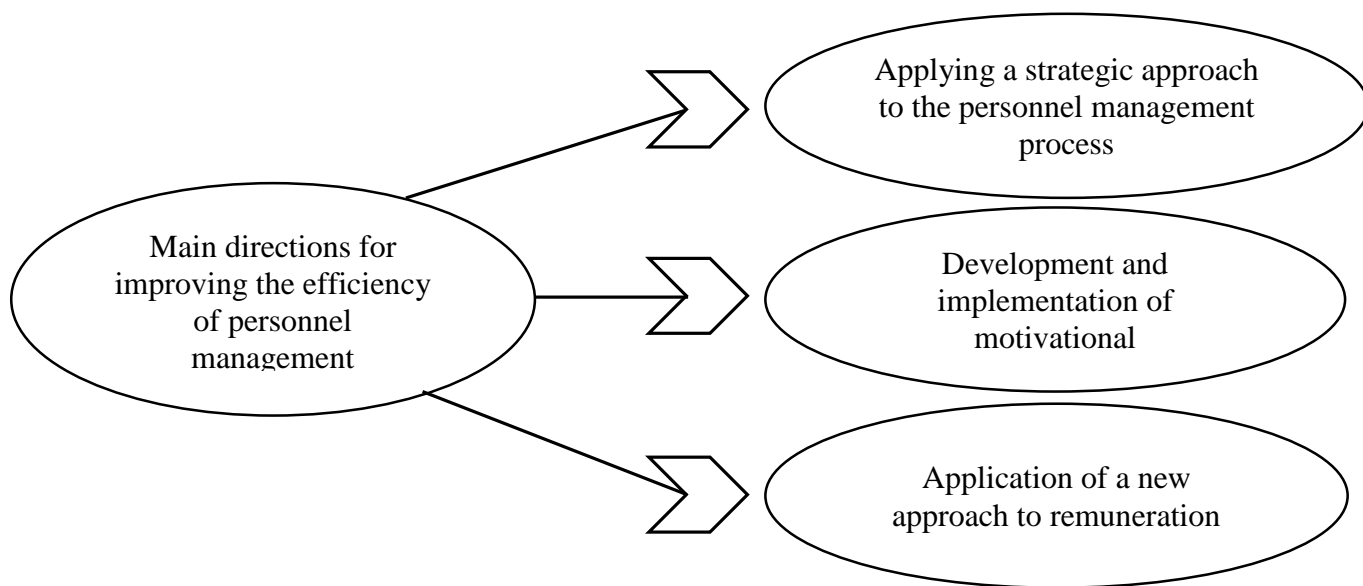


Fig. 6. The main directions for improving the efficiency of the company's personnel management

Note. Made by the author

The use of a strategic approach allows us to conclude that it is associated with the development and implementation of a motivational mechanism.

The implementation of the motivational mechanism based on the developed strategy should ensure a balance between the dynamics of qualitative economic indicators (labor productivity, the size of the wage fund, etc.) on the one hand, and the degree of employee satisfaction with the factors that form the motivational environment at the enterprise, on the other one.

The process of motivational measures' implementation is presented in Fig. 7.

Accordingly, the implementation of motivational measures is a complex process in which personnel service employees and heads of departments at the enterprise take a direct part. To implement a motivational mechanism, these employees carry out strategic personnel management by developing personnel measures in accordance with the selected strategy option, for the implementation of which the following tasks are solved: analysis of the motivational environment have been carried out, monitoring of external and internal threats, implementation of an effective personnel management process, which allows to develop and implement motivational and stimulating elements.

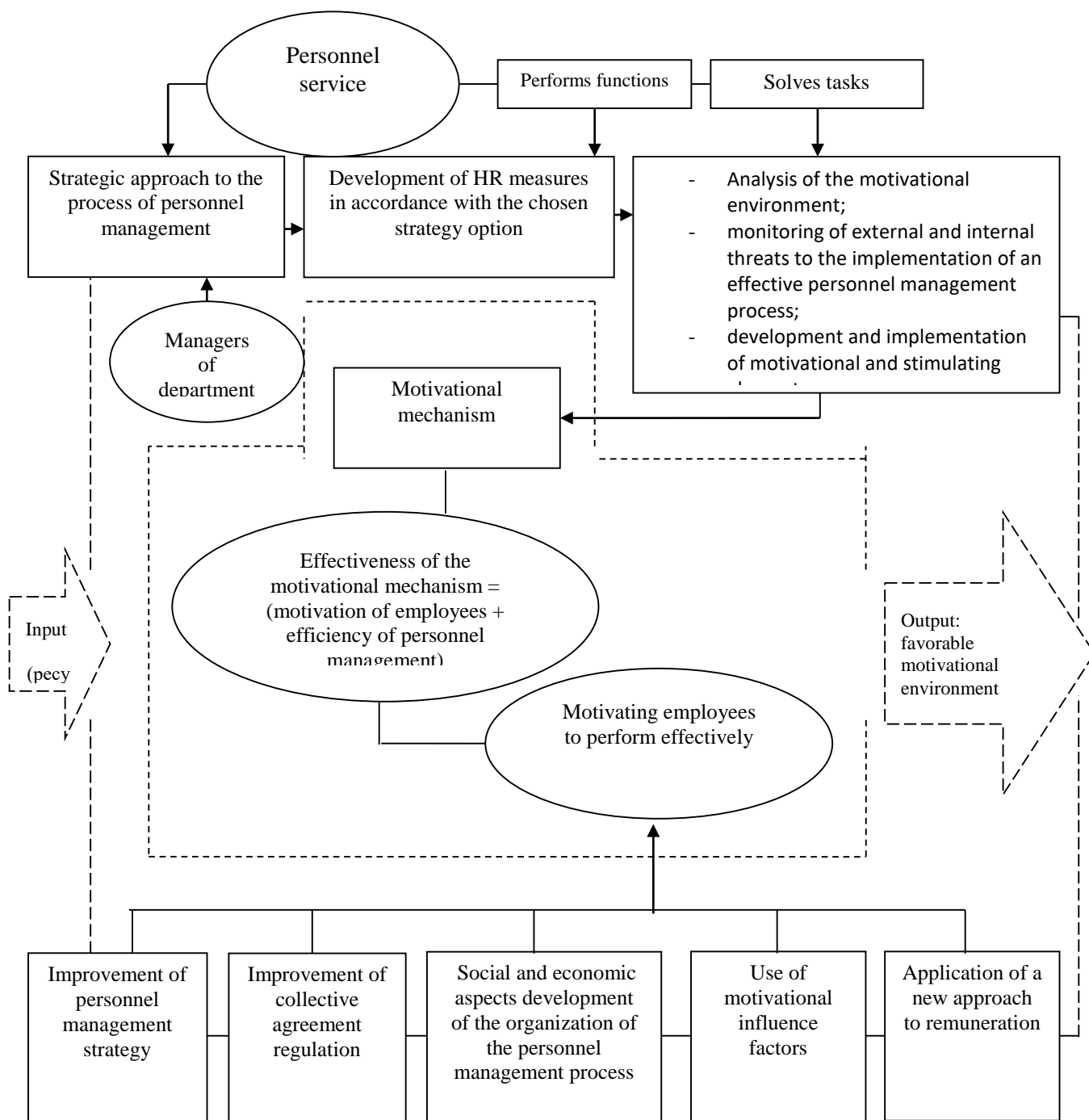


Fig. 7. Process of motivational measures implementation at the enterprise

Note. Made by the author

We will present a list of possible motivational and stimulating elements that can be used at the enterprise, as well as recommendations on possible ways to increase the effectiveness of material stimulation of personnel (Table 3-4).



Table 3

## List of possible motivational and stimulating elements at the enterprise

Motivation form	Stimulating elements description
Material monetary	
Salary	Remuneration of the employee, including the basic (temporary, part-time, official) and additional (bonuses, allowances, additional payments for working conditions, part-time work, for night work, for team management, payment and compensation for vacation, etc.) wages.
Bonuses	One-time payments from the profit of the enterprise (reward, bonus, additional remuneration), as well as bonuses for punctuality and being on time, for merit, for years of service, etc.
Profit sharing	A part of the profit has been established, from which the incentive fund has been formed. It is distributed to personnel categories that can really influence the profit of the enterprise (management personnel).
Additional payment plans	Gifts, subsidies for business expenses, coverage of personal expenses indirectly related to work.
Material nonmonetary	
Organization of catering	Allocation of funds for: - organization of catering at the enterprise; - payment of food subsidies.
Scholarship programs	Allocation of funds for education.
Training programs	Covering the costs of organizing training (retraining, advanced training).
Programs of medical care	Organization of medical care for the company's employees (contracting with medical institutions).
Housing construction programs	Allocation of funds for own construction.
Programs related to upbringing and education of children	Organization of preschool and school education and training of the children of the company's employees.
Social benefits	The formation of a social package, the right of the employee to independently choose the form of the benefit.
Life insurance	Life insurance of personnel and their family members at the expense of the company.
Temporary disability payment programs	At the expense of the company's funds.
Medical Insurance	Both the employees and their family members.
Nonmaterial	
Free time stimulation	Regulation of employment time by: providing an employee for active work with additional weekends, vacations, flexible work schedule, the opportunity to independently choose vacation time; reduction of the duration of the working day due to high labor productivity.
Labor or organizational incentives	Regulates the employee's behavior based on the measurement of his/her satisfaction with work and provides for the presence of creative elements in his/her work, the possibility of participation in management, promotion within the same position, creative business trips.
Stimulation, social recognition	Presentation of certificates, badges, placement of photos on the board of honor, etc.

Note. Made by the author

Table 4

Recommendations on possible ways to improve the effectiveness of material incentives for personnel at the enterprise

Objectives	Recommendations or solutions
Savings of the company's wage fund	Payment of a larger bonus in contrast to an increase in the official salary
	Distribution among employees of part of the savings in the wage fund, obtained due to increased labor productivity
Improvement of work efficiency and competitiveness of services	Individualization of the salary
	Distribution of collective earnings taking into account labor participation rates
	Allowances for qualifications and knowledge
	Bonuses for a high culture of customer service
	Profit distribution due to the participation of personnel in management
Increasing labor discipline and dedication of employees	Additional payments for absence of tardiness, absenteeism, careful performance of duties
	Increased information exchange between different levels of management
	Recognition of employee achievements
Reduction of misunderstandings between employees of different management levels	Transfer of all employees to base salaries
	Reduction of salary allowances for management employees
Stimulating the implementation of innovations	Creation of award funds for innovation
Stimulation of innovative activity	Transfer of the annual bonus to a deposit with payment after a certain number of years

Note. Made by the author

An important place in the process of the motivational mechanism implementation belongs to the improvement of collective agreement regulation. Thus, supplementing the content of the Collective Agreement with the necessary provisions on motivating employees to increase labor productivity should be accompanying measures for improving the collective agreement regulation at the enterprise. In particular, as practice shows, it is expedient to include separate provisions in the collective agreement of the enterprise regarding the procedure for the formation and distribution of the wage fund, incentives for saving resources and penalties for their overspending, incentives for the rational use of equipment, improving quality and reducing labor intensity, preserving material values and making rational offers (Kolot 2003). We believe that supplementing the content of the Collective Agreement with these provisions and their implementation is a measure to increase the motivation of employees to increase labor productivity, which in turn will testify to the effectiveness of personnel management at the enterprise.

In our opinion, increasing the efficiency of personnel management is also possible under the condition of the development of social and economic aspects of the organization of the personnel management process. Meanwhile, the main task is to align the goals and interests of managers of different management levels with the goals, interests and needs of the staff. To increase the efficiency of personnel management, the following social and economic aspects of the organization of the personnel management process should become important: stability of the official position is the main incentive in work; formation of employees' sense of attachment to the company; decentralization in the personnel management process, transformation of the personnel service into a consulting and methodological structure; development of new forms of mutual relations, which will resolve contradictions that arise when investing in personnel development; development of motivational principles of management and the formation of teams focused on creativity and self-organization; formation of social partnership principles.

The use of motivational influence factors should become important in the process of implementing the motivational mechanism (Fig. 8) (Holfa 2004; Doronina 2009).

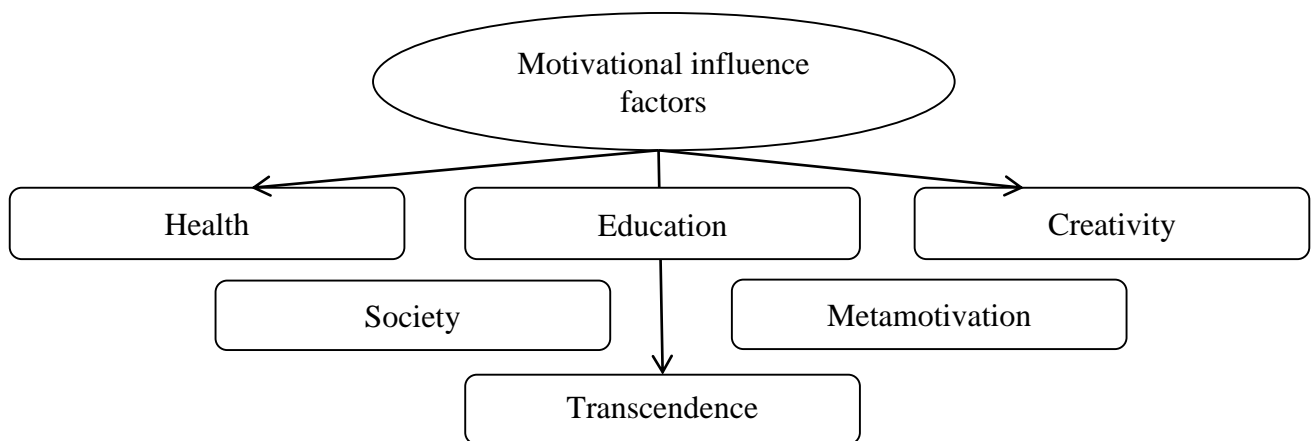


Fig. 8. Motivational influence factors

Note. Made by the author

Effective use of motivational influence factors in a positive way on the result due to:

1) an increase in the level of health will lead to an improvement in the physiological state of the personnel, which will allow them to perform their functional duties more effectively. For this purpose, it is advisable for the enterprise:

- to introduce the position of a psychologist who would monitor the psychological problems of the staff and provide appropriate professional assistance;
- to equip a special recreation room;
- to monitor the social and psychological climate in the team;

- to improve working conditions;
- to increase the standards for issuing work clothes;

2) taking into account the fact that the motivational factor “education” implies the simultaneous need to increase one’s cultural and educational level and the need to have work experience, the following can be recommended as basic measures to increase the effect of this factor:

- development and implementation of personnel professional training programs;

- introduction of social and economic benefits for seniority;

3) the motivation factor “creativity” involves the need for constant changes and the desire to be open to new ideas. Hence, the following basic measures to increase the effect of this factor can be taken:

- material encouragement of proposals for the implementation of innovative ideas aimed at improving the production and economic activity of the enterprise and the growth of economic results;

- conducting professional reviews and certifications with subsequent changes in the salary system;

4) improving relations in the team due to increasing the effect of the “society” factor will allow more productive use of communications and reduce the costs of additional control. The motivating factor “society” implies the need to have a high salary, material rewards, a set of benefits and allowances; the need to communicate with many people, to have close relationships with colleagues; the need to form and maintain long-term stable relationships with a small number of colleagues; desire for competition and influence; the need for social security; balanced staff structure by age; reconciliation of personal life values with the attitudes of colleagues. Meanwhile, the following measures can be offered:

- development and implementation of organizational forms of cooperation and social contacts within the enterprise, which allows increasing confidence;

- monitoring of interpersonal communication problems and appropriate responses to eliminate them.

5) the “metamotivation” factor, in case of increased action, contributes to a more complete realization of managerial abilities and talents, which allows you to obtain additional income due to managerial decisions aimed at reducing costs and more efficient use of all production resources. The motivational factor “metamotivation” provides for the need for self-improvement and personal development [Holfa 2004];

6) the “transcendence” factor implies the need for internal reward from work [Holfa 2004]. Because of this, the enterprise should periodically conduct professional and psychological testing to determine the professional and psychological profile of

the staff and in accordance with it, assign functional duties and assignments. Special attention should be paid to measures that would increase the level of intellectualization of work. It is essential to remember that an element of any motivational mechanism is always the improvement of the remuneration system. Salary as a form of income for employees has significant motivational potential. Therefore, one of the main functions of salary is motivational one.

As it has been mentioned earlier, in Ukraine the salary structure is determined as follows: the share of the basic salary (tariff) in the general wage fund is on average 65-70%, additional salary should be 30-25%, incentive and compensation payments - 5 % (Holfa 2006).

If the employee achieves new, higher work results, we propose to revise and increase his/her tariff in the amount of the bonus for individual achievements, i.e. by 10%. In our opinion, this will encourage employees to maintain the achieved results in the future. According to the concept of a flexible tariff, the tariff should carry the main incentive load. The structure with the following proportions has been taken as the optimal salary structure: tariff - 85%, periodic bonus for individual achievements - 10% and bonus for the results of the enterprise as a whole - 5%

In the course of the transition to a market economy, the objective necessity of labor regulation increases. It is one of the important links of the economic mechanism that determines the efficiency of enterprises. The income of employers from the main activities of enterprises and the wages of employees directly depend on the volume of produced and sold products, on their price and cost price, therefore both of them are interested in increasing the number of goods supplied to the market, expanding their range, increasing their attractiveness for consumers both in terms of quality and price. This can be achieved only by using and improving the labor rationing mechanism aimed at increasing its efficiency, i.e. by increasing labor results in relation to the costs of their achievement.

The labor rationing system of the company's personnel should be developed on the basis of certain principles:

- 1) the principle of efficiency, which consists in the need to establish labor standards, in which production results are achieved with the minimum total costs of labor, material, energy and information resources;
- 2) the principle of systematicity, which means that labor standards must correspond to the final results of production and take into account the dependencies between resource costs at all stages of the production process;
- 3) the principle of complexity, which expresses the need to account for the interrelationship of technical, economic, psychological, social and legal factors;
- 4) the principle of objectivity, which presupposes the creation of equal opportunities for all employees of the enterprise to fulfill the norms;

5) the principle of specificity, which consists in the fact that labor standards must correspond to the parameters of the manufactured products;

6) the principle of dynamism, which comes from the principle of concreteness and expresses the objective necessity of changing labor standards with a significant, for this accuracy of calculations, change of production conditions;

7) the principle of a positive attitude of employees to the enterprise, which means the need to create such a labor regulation system that ensures a general positive attitude of employees to the functions performed, the social environment and the enterprise as a whole;

8) the principle of legitimacy, which expresses the need for strict compliance with laws and other legal acts during labor regulation.

Accordingly, the characteristics of the socio-economic results of the application of a strategic approach to the enterprise personnel management process are presented in Table 5.

Table 5

Characterization of the socio-economic results of the application of a strategic approach to the process of enterprise personnel management

The direction of the implementation of the strategy	Social result	Indicators of social efficiency	Economic result
Personnel development	Increasing the meaningfulness of work	Increasing the share of employees who have related professions	Growth of labor productivity
	Ensuring consistency of goals of employees and administration in career management	Decrease in staff turnover	
Motivation of staff behavior	Ensuring the link between work performance and remuneration	Increasing the share of employees who are satisfied with the reward system	Growth of labor productivity
	Provision of opportunities for personal development of employees	Increasing the share of employees who are satisfied with the nature of work	
	Formation of a sense of belonging to the team	Increasing the share of employees who are satisfied with the conditions for self-expression	
Social development	Increasing the share of satisfied personnel needs	Increasing the share of employees who are satisfied with the social and psychological climate	Growth of labor productivity
	Formation of a favorable social and psychological climate		
	Providing a feedback mechanism between staff and management		
	Improvement of domestic living conditions		

Note. Made by the author

Thus, the successful implementation of the personnel management strategy will make it possible to obtain an economic effect in the form of an increase in labor productivity and a decrease in personnel turnover. At the same time, the social effect will be manifested by increasing employee satisfaction with material remuneration, working conditions, self-expression conditions, and the social-psychological climate in the team.

Therefore, increasing the efficiency of the company's personnel management based on the application of a strategic approach to the personnel management process, the development and implementation of a motivational mechanism and the use of a flexible tariff system will make it possible to improve the personnel management process at the company. It means that with the rational organization of activities to ensure the successful implementation of each of the offered directions, the effectiveness of the personnel management process in particular and the effectiveness of the enterprise in general will increase.

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### **3.2. THE CONCEPT OF COMPETITIVENESS AND DYNAMIC GROWTH OF ENTREPRENEURSHIP IN THE SECTOR OF SMALL AND MEDIUM-SIZED BUSINESSES**

Positive trends in the economy of the Republic of Poland have acquired a stable character, but in the face of global threats and macroeconomic instability, they need the fullest use of the economic potential accumulated in previous years. One of the main ways to stabilize the economy is the use and development of integrated approaches to solving the problems of entrepreneurship development in the sector of small and medium-sized businesses in a strategic aspect. The main goal of state policy is the development of a management strategy in accordance with the identified priorities for economic sustainable development and its democratization. An integral part of democratization is the process of its socialization, that is, the involvement of as many owners as possible in the economic life of society. Therefore, the optimal development of priority areas of socio-economic development in the sector of small and medium-sized businesses is of particular importance. To do this, at the national level, it is necessary to take into account a number of different factors that affect the strategy for managing the development of entrepreneurship in the sector of small and medium-sized businesses.

As world experience shows, most of the developed countries of the world have achieved high economic performance due to the practical application of strategic business management in the sector of small and medium-sized businesses. His contribution to the creation of the theoretical foundations of entrepreneurship during the XVII-XX centuries. made Cantillon R., Ricardo D., Smith A., Say J.-B., Hayek F., Schumpeter J. and others.

A large number of works and studies are devoted to small and medium-sized businesses in modern economic theory; it remains in the focus of attention of researchers due to its economic and territorial-spatial maneuverability, flexibility of decision-making. In countries that succeed in the creation and implementation of innovations, production and export of science-intensive products in the sector of small and medium-sized businesses, there are three fundamental types of innovative strategies for the development of the national economy:

- “transfer” strategy: it consists in using foreign scientific and technical potential and introducing technologies developed abroad into their own production (post-war Japan);

- “borrowing” strategy: it consists in mastering the production of products previously produced in developed countries (the experience of South Korea, China and other countries of Southeast Asia);

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- "growth" strategy: designed to use the national scientific and technical potential, attract foreign scientists and specialists in order to accelerate the development and implementation of new high-tech products and attract innovative capital (USA, England, Germany; Blodgett, J. G., Bakir, A., & Rose, G. M., 2008).

In its pure form, none of the above strategies can hardly be used. We believe that the first two approaches are less acceptable for Poland, since the implementation of these strategies requires the purchase of licenses. At the same time, the strategies of borrowing and transfer carry threats associated with the entry into the country through technology transfer of obsolete technologies. These types of strategies are acceptable only for those areas of activity where there are no scientific achievements, but there is a highly qualified production potential, which will allow the creation of joint ventures (large and small or medium) with a gradual increase in exports of high-tech products.

Reorientation to new socio-economic priorities necessitates coordinated regulation of progress in innovations and technologies at all levels of management, shifting the focus of innovation management to the production level. The management system is becoming more and more multi-level: at the state and regional levels, the corresponding priorities for innovation are determined, at the micro level, the management of technological development ensures a gradual renewal of the product range and production apparatus, organization and management of production, which helps to ensure profit growth and social achievement. or ecological effect (Blodgett, J. G., Bakir, A., & Rose, G. M., 2008).

Exploring the influence of the state on innovation processes in the sector of small and medium-sized businesses in different countries, four types of state innovation policy are distinguished: a technological push, market orientation, social orientation, and changes in the economic structure of the economic mechanism (Soares, A. M., Farhangmehr, M., & Shoham, A., 2007 (Fig. 1). The policy of "technological push" involves the determination by the state of the priorities of scientific and technological development on the basis of improving the ways of stimulating the innovation sphere. The state innovation policy of Poland had the features of a technology push policy.

The policy of "social orientation" implies social regulation of the consequences of a technological breakthrough - decision-making processes take place with the involvement of the general public; decisions are made in the conditions of reaching a socio-political consensus. This version of innovation policy is never the main one, but some of its elements are reflected in the development of different countries. Yes, in the 1960s and 1970s, significant attention was paid to the socio-economic consequences of the introduction of new technologies in the United States; in Sweden, the excessive social orientation of economic and social policy led to a certain lag in the development of the leading countries of the world. Consequently, this type of innovation policy should be combined with its other types in a ratio that did not interfere with the full-fledged economic development of the state and contributed to the improvement of its well-being.

A policy aimed at changing the economic structure of the economic mechanism is characterized by a great influence of advanced technologies on solving socio-economic problems, changing the sectoral structure, etc. The formation of a new mechanism for managing the development of science and technology should be carried out taking into account the general patterns of innovation processes in the Republic of Poland. For example, after the stage of a protracted crisis of the economy, a turn to recovery follows, therefore, when developing an innovation policy, it is advisable to focus on creating conditions for the implementation of an abrupt transition from the old to the new technological basis of entrepreneurship (Soares, A. M., Farhangmehr, M., & Shoham, A., 2007). It is with the crisis stage that the emergence of basic innovations is associated, which for some time coexisted with the old technological order, which requires a differentiated innovation policy.

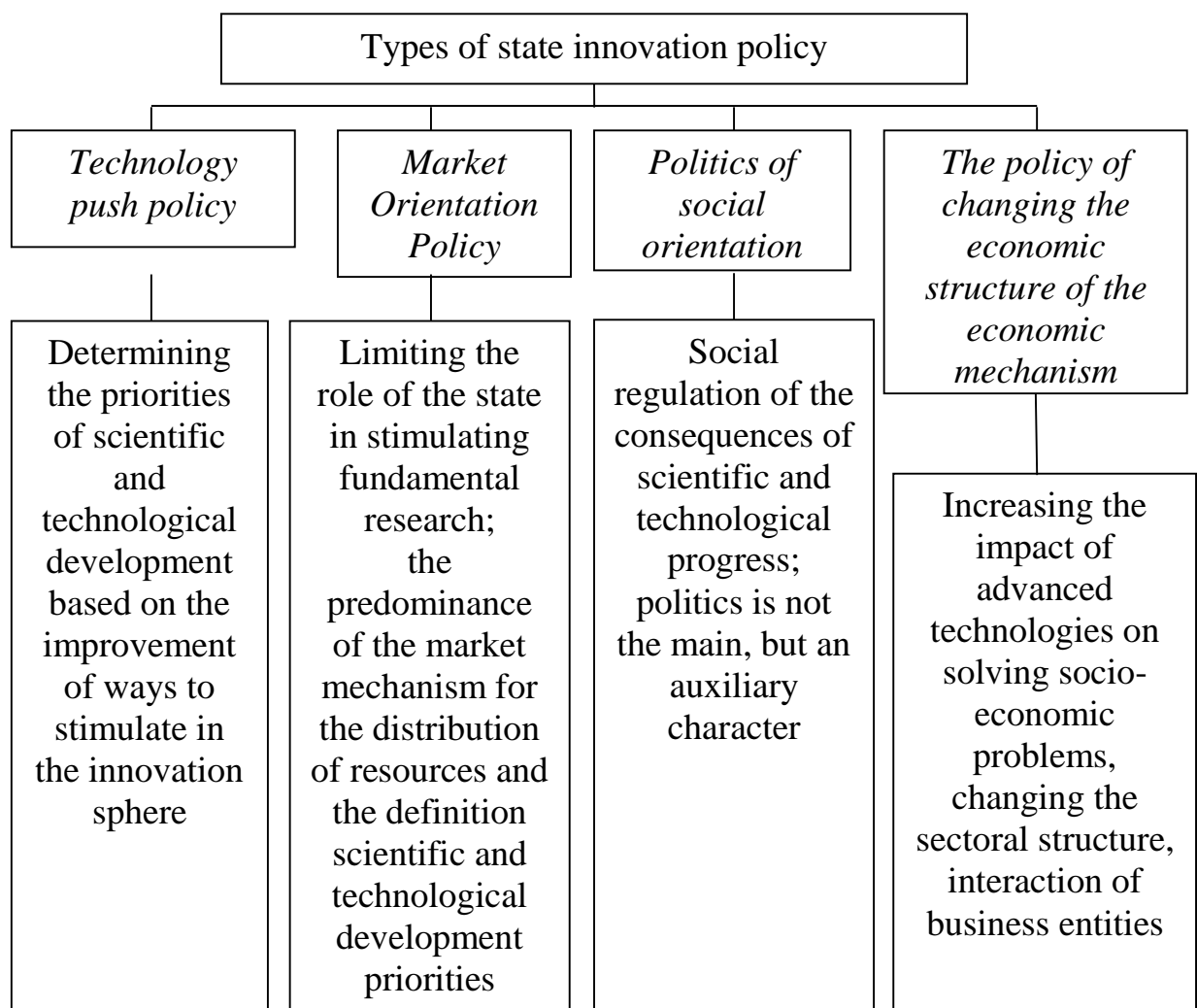


Figure 1. Types of state innovation policy

A policy aimed at changing the economic structure of the economic mechanism is characterized by a great influence of advanced technologies on solving socio-economic problems, changing the sectoral structure, etc. The formation of a new mechanism for managing the development of science and technology should be carried out taking into account the general patterns of innovation processes in the Republic of Poland. For example, after the stage of a protracted crisis of the economy, a turn to recovery follows, therefore, when developing an innovation policy, it is advisable to focus on creating conditions for the implementation of an abrupt transition from the old to the new technological basis of entrepreneurship (Soares, A. M., Farhangmehr, M., & Shoham, A., 2007). It is with the crisis stage that the emergence of basic innovations is associated, which for some time coexisted with the old technological order, which requires a differentiated innovation policy.

When substantiating the main tasks of the institutionalization of the innovation sphere for the future, it is advisable to clearly define the cause-and-effect relationship in the implementation of the goals of the strategy for small and medium-sized businesses, take into account what should be considered prerequisites and what should be considered the consequences of innovative development. In particular, the strengthening of the social orientation of institutions, the deepening of monetary and financial stabilization, “detinization”, the alignment of regional disproportions through the production of innovations should be considered as the consequences of innovative development and positive structural changes, and not as self-sufficient tasks, the fragmentary achievement of which only leads to the destruction of the integrity of the strategy. .

Thus, one of the most important tasks of the state innovation policy for entrepreneurship in the Republic of Poland in the sector of small and medium-sized businesses is to ensure dynamic growth based on advanced technologies and innovations.

In order to accomplish this task, it becomes necessary to use effective tools of all the described types of innovation policy, taking into account the specifics of socio-economic and environmental transformations in the Republic of Poland.

The innovation and investment process has a common and interconnected sphere of implementation, closely related to the tasks of structural restructuring of the national economy. This means that the state must ensure all areas – structural dynamics, stabilization of expectations, a two-stage system for implementing innovation policy (Fig. 2).



Figure 2. Two-level system for the implementation of innovation policy

At the first stage, it is expedient to introduce an integral system of normative-legal and organizational support for structural reforms. The key elements should be state support for the structural priorities of entrepreneurial activity, the creation of equal conditions for competition in the sector of small and medium-sized businesses, the protection of property rights, the activation of human capital, especially in the production and use of knowledge, and the introduction of world product quality standards. At the same time, the introduction of the consequences of fundamental research will ensure the functioning of information flows, a system of medium- and long-term evaluation of innovations (expertise, expert councils, commissions, etc.), as well as a wide public discussion of innovative management decisions in order to promote the dissemination of innovations (trial markets for new products, etc.). The share of innovative products should exceed 15% of the total output.

At the second stage of the innovation cycle, the state should promote the dissemination of innovations in industries that are characterized by an objective

unpreparedness of enterprises for risk (artificial intelligence, green energy); where, as a result of the distortion of the competitive situation in the world market, it is difficult to use the latest technologies (biotechnology, microelectronics); in the field of training personnel capable of assimilating new technological solutions. The formation of the innovation process management system, in our opinion, should be aimed at increasing the contribution of scientific organizations to the creation of a highly developed production of industrial products: consumer goods; in the development of resource-saving and environmentally friendly technologies; implementation of structural shifts in material production and a significant increase in the competitiveness of industrial products.

The innovative development path means that practically every cycle of reproduction and every unit of investment must be the carrier of innovations that improve or change production technologies in order to achieve higher final (economic and social) results. This is possible with continuous innovative design of the future reproduction on an alternative basis, when the costs of reproduction of obsolete technologies are not allowed.

A reasonable, balanced strengthening of the role of the state in the implementation of innovation policy suggests the importance and relevance of budgeting for Poland; government guarantees and investment insurance that reduce innovation risks; reasonable support for domestic producers; pursuing a balanced foreign economic policy, which should be associated with programs for the technical re-equipment of domestic industries.

The components of competitiveness as the main concept of economic growth of the national economy can be defined as follows:

- it is competitiveness that accumulates, along with the economic results of management, the quality of socio-political processes, the effectiveness of the system of public administration of society, the level of scientific, technological and innovative potential, the intellect of the nation, its culture, value system, legislative and information base;
- reflects the level of state policy assistance to the formation of competitive advantages, the foreign economic system of cooperation, the development of all business structures, economic agents, the attractiveness of the investment climate in order to increase the welfare of the population;
- contributes to innovation processes by increasing the adaptive ability of the economy to global innovations (primarily technology transfer), to increased competition as a result of network globalization;
- is the most important long-term factor in the development of the economy based on the development of entrepreneurship, the intellectual component of the workforce (quality of work);

- encourages a change in the architecture of the traditional economy in favor of an innovative component to improve the efficiency of the use of all types of resources;
- promotes entry into the system of the international production and economic space on the terms of priority partnership and participation in the processes of formation of global demand, global supply and the world reproduction process;
- causes the transition to a knowledge economy, to the intensification of the development of infrastructure for the generation, storage and transfer of knowledge and information, social and service infrastructure;
- contributes to the rise of national consciousness, the consolidation of all representatives of civil society in providing success factors.

Questions remain debatable on the criteria by which one could recognize the optimal scale of the state's activities, the dependence of the change in the functions of the state on the characteristics of a particular society, the relationship between the role of the state and the market.

Here we focus on the degree of actual intervention of state bodies in the processes of economic regulation, including the system for ensuring the country's competitiveness in the sector of small and medium-sized businesses. In practice, this is a search for the optimal distribution of types of entrepreneurial activity, their scale and definition of the functions and role of the nation state in the European Union.

To do this, it is proposed to form an optimal strategy for managing entrepreneurship in the sector of small and medium-sized businesses by highlighting the priority goals of managing entrepreneurship in the sector of small and medium-sized businesses based on a methodologically supported approach.

This approach, on the one hand, made it possible to highlight the features of the strategic management of entrepreneurship (the main patterns for the most successful concentration of limited economic resources, the orientation of an entrepreneur towards a systematic solution to the problems of his enterprise): the choice of the form and type of business entity; the choice of a mission adequate to modern conditions and the main goal of this subject; assessment of available and required economic resources for effective entrepreneurial activity; actual production of goods and/or services; goods and/or services planned for production.

On the other hand, the methodology-based approach allowed to identify the main performance indicators of the entrepreneurship management system in the sector of small and medium-sized businesses in the Republic of Poland in terms of a holistic approach and structure. It is concluded that in the strategic management of entrepreneurship in Poland, the emphasis is shifted to the plane of final requirements for the results of a certain policy, in a certain area of economic activity, the use of strategic plans at all levels of management (implementation is not mandatory, it is advisory in nature, this is precisely the content methodologically supported approach).

As part of the practical phase of the study, it was taken into account that the creative and innovative nature of entrepreneurship in the sector of small and medium-sized businesses in the Republic of Poland brings the element of competitiveness into focus, when it is innovation that becomes a competitive advantage. In this case, the selective innovation-investment strategy becomes the initial element of the activation of innovation activity: the choice of narrow priority industries, where the competition of resources can ensure success and a chain reaction in broader areas of the national economy in a relatively short time.

The concept of competitiveness and dynamic growth of entrepreneurship in the sector of small and medium-sized businesses proposed by the author based on advanced technologies and innovations in the Republic of Poland is based on the features of the types of innovative strategies for the development of the national economy: “transfer” strategies; “borrowing” strategies; growth strategy. One of the most important tasks of the state innovation policy for entrepreneurship in the Republic of Poland in the sector of small and medium-sized businesses is to ensure dynamic growth based on advanced technologies and innovations.

Further scientific substantiation of the current directions of the innovation and investment process allows us to conclude that the role of the state is to ensure all areas: structural dynamics, stabilization of expectations, a two-stage system for implementing innovation policy. At the first stage, it is expedient to introduce an integral system of normative-legal and organizational support for structural reforms. At the second stage of the innovation cycle, the state should promote the dissemination of innovations in industries that are characterized by an objective unpreparedness of enterprises for risk (artificial intelligence, green energy); where, as a result of the distortion of the competitive situation in the world market, it is difficult to use the latest technologies (biotechnology, microelectronics); in the field of training personnel capable of assimilating new technological solutions.

A descriptive model of entrepreneurship management in the sector of small and medium-sized businesses is proposed, which is developed on the basis of a comprehensive analysis of information on the influence of specific factors and the construction of a forecast that suggests development trends. When developing a model, one should take into account a variety of factors (affecting success or provoking threats) and structure the managerial impact so that all these factors work for the development of small and medium-sized businesses: the possibility of creating an effective mechanism for market management; the ability to implement private property through a variety of forms; activation of the mechanism for the formation of backbone elements and the implementation of private property.

The mobilization of resource and innovative factors of highly competitive development is proposed through the relaying of the common (to ensure national unity)



in a regionally special space; taking into account regional features and factors that give rise to these features, providing a uniform behavior; integration of supranational and regional special (at the national level).

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### 3.3. METHODOLOGY AND QUALITY ASSESSMENT MANAGEMENT DECISIONS AT THE ENTERPRISE

The successful operation of the enterprise, ensuring a high level of its competitiveness, personnel policy, relationships and a positive image in general depends on the process of acceptance and implementing management decisions, which, in turn, allow to identify strengths and weaknesses, respond to them and form a mechanism for improvement. level of quality management.

The mechanism of acceptance and implementing managerial decisions was studied in the works of well-known classics-scientists M.Mescon, M.Albert, F.Hodouri, and others and scientists: L.Danylenko, L.Karamushka, N.Kolominsky, I.Moroz, M.Murashko, E.Khodakivsky, I.Shorobura and others.

The purpose of scientific work is to study the theoretical and analytical aspects, to provide recommendations for assessing the level of the process of acceptance and implementing management decisions in the enterprise.

The necessity of definition and the decision of the following tasks is caused: to investigate the maintenance of the administrative decision and features of process of its acceptance and realization; to form a method for assessing the quality of these processes at the enterprise; to analyze and comprehensively assess the level of these processes at enterprise; to determine the impact of the processes of acceptance and implementing management decisions on the level of profitability of enterprise.

The object of scientific work is the process of acceptance and implementing management decisions, and the subject – theoretical, analytical and practical recommendations on the level of the process of acceptance and implementing management decisions.

Methods of analysis and synthesis were used to perform the study; logical generalization, comparison, economic-mathematical, graphic, etc.

Information base of the research: scientific works of domestic and foreign scientists; educational and methodical publications; financial reports and information data of enterprise in the period 2021–2022; calculations and independent conclusions of the author in the process of performing scientific work.

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The question of the quality of the process of acceptance and implementing management decisions is an important area of research, as the development of enterprises depends on timely, correct and informed choice of decisions by managers.

The need for management decisions arises in connection with both external (management orders, establishing relationships with customers, suppliers, other enterprises) and internal factors (the emergence of problematic situations, low profitability, breach of discipline in the team, employee incentives, non-compliance terms of contracts, etc.). Thus, management decisions are the reaction of enterprise managers to negative (in order to minimize their impact) and positive (to achieve efficiency) factors.

The content of the concepts of «management decision» from the point of view of scientists is given in addition Table 1.

Table 1

Scientists' approaches to the content of the concept of «management decision»

Author, source	Content	The main emphasis
N. Ivanchenko, V. Yatsyuruk [1]	Managers' choice of alternatives within their job responsibilities in order to achieve the company's goals	the result of an alternative choice
A. Shegda [2, p. 352]; S. Tsyutsyura, M. Tsyutsyura [3, p. 37]; R. Yakovchuk, A. Samilo [4]	the result of the alternative choice of the subject of action management to solve the problem in a real or projected situation	the choice of course of action in a given situation
N. Mala, I. Pronik [5, p. 345]	the result of mental, creative and psychological work of the highest level of management, management of the enterprise as a whole	the result of team work
V. Bakumenko [6, p. 24]	an important element of the management process with the definition of stages from identifying existing problems, their evaluation and search for alternatives and choosing one of the best to solve it	element of the management process
O. Oliynichenko [7, p. 82]	and the choice, and the result of the choice, which involves the specification of time and the passage of certain stages: preparation, formation, adoption and implementation	

Note. Generalized by the authors

Scientists have different views on the essence of this concept: on the one hand – is the choice of a rational solution among a large number of alternatives, and on the other – an element of the management process with the stages of acceptance, implementation, control of results. That is, the decision is the first and main stage in management. Ensuring the quality of the process of acceptance and implementing management decisions at the enterprise requires compliance with basic principles (Fig. 1).

Thus, management decisions, acting as a tool for influencing the control subsystem on the managed, ensure the achievement of goals. The level of development of the enterprise depends on quality of their acceptance and realization.

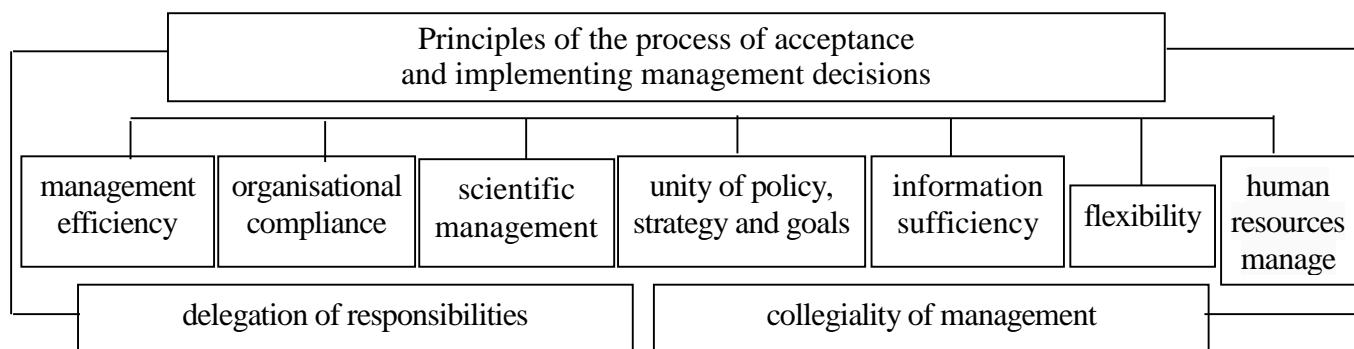


Fig. 1. List of principles of process quality assurance acceptance and implementing management decisions at the enterprise

Note. Generalized by the authors based on source data: [1]

Evaluation of the level of efficiency, first of all, should determine its result, establishing which management decisions made and implemented in the process of activity were erroneous and negatively affected the final result or positive and increased the level of efficiency of the enterprise.

In general, business managers must learn to understand which decisions will have the greatest effect in order to maximize profitability, achieve strategic goals and minimize risks. To do this, they must optimize these processes by assessing the level of their quality.

The level of quality of management decisions is the level of total effectiveness, determined by the results of preparation, formation and implementation of management decisions. At the same time, he considers methods of assessing the quality of the process of acceptance and implementing management decisions [8, p. 199]: comparison of different options; the end result of the activity; direct result of activity; Pareto principle; A B C; accelerated Eisenhower analysis, etc.

There are also other methods of assessing the quality of the process of acceptance and implementing management decisions: the method of adjustments; examination using statistical methods; process technology.

V. Borsch proposes to assess the quality of the process of acceptance and implementing management decisions on the basis of groups of local indicators [9, p. 153]: current and final efficiency; efficiency in acceptance management decisions (conflict, conflict); the effectiveness of the implementation of management decisions.

J. Balabanyuk emphasizes that the assessment of the process of acceptance and implementing management decisions should show not only the overall level of quality, but also obtained consequences and opportunities, their impact on the functioning of the enterprise in the future [10]. In general, it is difficult to identify the most objective method of assessing the quality of the process of acceptance and implementing management decisions in the enterprise. But, based on the position of N. Gavkalova [11, p. 335–344] and N. Podolchak [12, p. 108–113] we will offer a technique for diagnostics (Table 2).

Table 2

Methods for assessing the level of processes  
acceptance and implementing management decisions at the

Indicator	Formula
<i>Quality indicators of the management decision-acceptance process</i>	
Clarity level	$P1 = (Y_{PPp} - Y_{PPpe}) / Y_{PPp},$ (1.1)
Level of structuring	$P2 = (Y_{PPp6} + Y_{PPpHq}) / Y_{PPp},$ (1.2)
Level of alternative	$P3 = A / Y_{PPp},$ (1.3)
The level of comparison of options	$P4 = (Y_{PPp} - Y_{PPp3}) / Y_{PPp},$ (1.4)
The amount of processed information	$I5 = (Bar_1 * D_1 + Bar_2 * D_2 + \dots + Bar_n * D_n) / Y_{PPp},$ (1.5)
The level of financial costs	$P6 = B / BB,$ (1.6)
The level of time spent	$P7 = ЧB / Y_{PPp},$ (1.7)
Level of validity	$P8 = IИ / Iотр,$ (1.8)
The level of employee involvement	$P9 = Чзал. пр / Чзар,$ (1.9)
<i>Indicators of the quality of the process of implementing management decisions</i>	
The level of achievement of goals	$K10 = Bar_{и} * P_{и1} + Bar_{и} * P_{и2} + \dots + Bar_m * P_{иm} / Y_{PPp},$ (1.10)
The level of collision	$P11 = (Y_{PPp_{кол}} + Y_{PPp_c} + Y_{PPp_H}) / Y_{PPp},$ (1.11)
The level of conflict	$P12 = K_{ф. конф} / K_{з. конф},$ (1.12)
Deadline for delivery to performers	$T13 = T_{д} / T_{зар},$ (1.13)
Level of alternative	$P14 = K_a / Y_{PPp},$ (1.14)
The level of evaluation by performers	$P15 = (Y_{PPp_B} + Y_{PPp_{зап}}) / Y_{PPp},$ (1.15)
Level of compliance with environmental trends	$P16 = (Y_{PPp_{відп}} + Y_{PPp_{невідп}}) / Y_{PPp},$ (1.16)
Consumption level	$P17 = OB / OB_{риз},$ (1.17)

Note:

1. Formed on the basis of these sources: [11, p. 335–344; 12, p. 108–113]

2. Explanation of symbols:  $Y_{PPp}$  – number of management decisions, units.;  $Y_{PPpe}$  – the number of management decisions made by qualitative criteria, units.;  $Y_{PPp6}$  – number of bureaucratic management decisions, units.;  $Y_{PPpHq}$  – the number of fuzzy management decisions, units.;  $A$  – number of alternatives, units.;  $Y_{PPp3}$  – the number of comparative options for management decisions, units.;  $Bar$  – validity of the source, %;  $D$  – number of sources of information, units.;  $n$  – number of sources, units.;  $B$  – costs of acceptance management decisions, thousand UAH.;  $BB$  – gross expenditure, thousand UAH.;  $ЧB$  – time costs for acceptance management decisions, hours.;  $IИ$  – the required amount of information for acceptance rational management decisions in the total amount of information about them, %;  $Iотр$  – received information, %;  $Чзал. пр.$  – the number of employees involved in the management decision-acceptance process, pers.;  $Чзар$  – total number of employees, pers.;  $Bar_{и}$  – validity of achieved goals, %;  $P_{и}$  – level of achievement of goals, %;  $m$  – number of goals, units.;  $Y_{PPp_{кол}}$  – collision decisions that contradict the current regulations, units.;  $Y_{PPp_c}$  – collision decisions that contradict the goals and strategies of the enterprise, units.;  $Y_{PPp_H}$  – collision decisions that contradict internal corporate norms and rules, units.;  $K_{ф. конф}$  – the number of functional conflicts in the implementation of management decisions, units.;  $K_{з. конф}$  – the total number of conflicts in the implementation of management decisions, units.;  $T_{д}$  – average time of delivery of management decisions to executors, h.;  $T_{зар}$  – average time of implementation of management decisions, hours.;  $K_a$  – number of alternatives for the implementation of management decisions, units.;  $Y_{PPp_B}$  – the number of management decisions that were not implemented due to failure to implement them, units.;  $Y_{PPp_{зап}}$  – the number of management decisions made late or on the principle of "Italian strike", units.;  $Y_{PPp_{відп}}$  – the number of management decisions in accordance with environmental trends, units.;  $Y_{PPp_{невідп}}$  – the number of management decisions that do not meet environmental trends, units.;  $OB$  – the amount of possible costs due to the implementation of management decisions, thousand UAH.;  $OB_{риз}$  – the amount of costs for the formation of methods to reduce the level of risk, thousand UAH

Based on the defined values of indicators, we will determine the quality indices of acceptance/implementing management decisions at the enterprise according to the formula:

$$I_{\text{acceptance.management.decisions.}}/I_{\text{implementing.management.decisions.}} = \frac{\sum_{i=1}^n \Pi_1 + \Pi_2 + \dots + \Pi_i}{n}, \quad (1.18)$$

where  $\Pi_1, \Pi_2, \dots, \Pi_3$  – indicators for assessing the level of acceptance / implementation of management decisions at the enterprise;

$n$  – the number of these evaluation indicators.

Calculate the integrated quality index of the process of adoption and implementation management decisions using certain values of indices:

$$I_{\text{quality}} = \frac{\sum_{i=1}^n I_{\text{acceptance}} + I_{\text{implementing.}}}{n}, \quad (1.19)$$

where  $I_{\text{acceptance}}, I_{\text{implementing}}$  – index of quality assessment of the processes of acceptance / implementing management decisions at the enterprise;

$n$  – number of evaluation indices.

Indices and integrated index of the level of quality of the process of acceptance and implementing management decisions should approach 1. If  $I_{\text{acceptance}}, I_{\text{implementing}}, I_{\text{quality}}$  are: in the range of 0.0–0.24, the process of their adoption and implementation at the enterprise is characterized by an unsatisfactory level; in the range of 0.25–0.49 – satisfactory; in the range of 0.5–0.74 – sufficient; in the range of 0.75–1 – high.

The presented evaluation methodology will determine the level of quality of the process of acceptance and implementing management decisions at the enterprise, to form areas for improvement. Let's evaluate the quality of the process of making and implementing management decisions in the period 2021–2022 using the example of enterprises producing bread and bakery products (Table 3, 4).

Table 3

Input data for the analysis of the acceptance process management decisions at the enterprise in 2021–2022

Indexes	2021	2022 y.	Deviation	
			absolute, (+/-)	relative, %
Number of management decisions, units, of which:	125	132	7	5,6
- with qualitative characteristics, units	103	105	2	1,9
- bureaucratic, units	22	27	5	22,7
Number of unclear management decisions, units	48	42	-6	-12,5
The number of alternatives in management decisions, units.	214	215	1	0,5
The number of comparisons in acceptance management decisions, units.	54	55	1	1,9
Number of information sources for management decisions, units	66	71	5	7,6
Gross expenditures, thousand UAH	253921	261876	7955	3,1
Volume of financial expenses, thousand UAH	101339	109511	8172	8,1
Time costs for acceptance management decisions, hours	109	111	2	1,8
The required amount of informative data in order to make rational management decisions,%	100	100	0	0,0
The share of information received,%	63	66	3	4,8
The number of executors involved in acceptance management decisions, pers.	241	243	2	0,8
Total number of employees, pers.	498	512	14	2,8

Note. Author's work on the basis of information data of the enterprise

Table 4

Initial data for the analysis of the implementation process  
management decisions at enterprise in 2021–2022

Indexes	2021 y.	2022 y.	Deviation	
			absolute, (+/-)	relative, %
Number of management decisions, units	125	132	7	5,6
Level of achievement of goals,%	113	117	-	3,5
Collision management decisions, units that:				
– contradict the current regulations	22	23	1	4,5
– do not meet the goals and strategies of the enterprise	10	12	2	20,0
– do not comply with internal norms and rules	16	18	2	12,5
Total number of conflicts, units, of them:	30	28	-2	-6,7
– functional	11	12	1	9,1
The average time to bring the management decisions for their implementation to the performers, h.	2	2	0	0,0
Average implementation time, hours.	57	61	4	7,0
Number of alternatives in the process of implementing management decisions, units	199	206	7	3,5
The number of management decisions, the implementation of which, units.				
– did not occur due to refusal to comply with them	6	10	4	66,7
- took place late or on the principle of «Italian strike»	10	17	7	70,0
– corresponds to the tendencies of the external environment	117	118	1	0,9
– does not correspond to environmental trends	2	4	2	100,0
The amount of possible costs, thousand UAH	9212	9171	-41	-0,4
The amount of costs for the formation of methods to reduce the level of risk, thousand UAH	21087	26122	5035	23,9

Note. Author's work on the basis of information data of the enterprise

The volume of gross expenditures of enterprise for management decisions for the analyzed period increased by almost 3.1%, and financial – by 8.1%. Time costs for acceptance management decisions increased by 2 hours.

During the study period, half of the employees of enterprises (241 and 243, respectively) were involved in the management decision-acceptance process.

Let's determine the level of management decisions at enterprise:

1. Level of clarity:

$$P1^{2021} = ((125 - 103) / 125) * 100 = 17,6\%; \quad P1^{2022} = (132 - 105) / 132 * 100 = 20,5\%.$$

Calculations showed that the obtained values of the indicator in the period 2021–2022 were close to 0, which is evidence that management decisions were made mainly with qualitative characteristics. At the same time, the annual increase in the level of their clarity requires managers to attract additional resources.

2. Level of structuring:

$$P2^{2021} = ((22+48)/125) * 100 = 56,0\%; \quad P2^{2022} = ((27+42)/132) * 100 = 52,3\%.$$

It is believed that the higher the value of the indicator, the lower the structural quality of management decisions. The calculated values of this indicator at enterprise for three years were high.

3. Level of alternative:

$$P3^{2021} = (214/125) * 100 = 171,2\%; \quad P3^{2022} = (215/132) * 100 = 162,9\%.$$

As the data showed, at the enterprise for 2 years when acceptance decisions there was an alternative reserve of options that provided quality of process.

4. The level of comparison of options:

$$P4^{2021} = ((125-54)/125) * 100 = 56,8\%; \quad P4^{2022} = ((132-55)/132) * 100 = 58,3\%.$$

It is believed that the more comparative options are developed, the better the management decision-acceptance process. The calculated values showed that the base of comparative options formed at the enterprise allowed to provide a sufficient level of quality of the management decision-acceptance process.

5. The amount of processed information:

$$I5^{2021} = ((0,8*28)+(0,7*15)+(0,6*13)+(0,5*10)/121) * 100 = 37,8\%;$$

$$I5^{2022} = ((0,8*28)+(0,7*20)+(0,6*12)+(0,5*11)/121) * 100 = 30,6\%.$$

The company's managers used information from various sources to make management decisions, but this did not contribute to ensuring a high level of quality of this process – it is necessary to expand the information base.

6. The level of financial costs:

$$P6^{2021} = (101339/253921) * 100 = 39,9\%; \quad P6^{2022} = (109511/261876) * 100 = 41,8\%.$$

7. The level of time spent:

$$P7^{2021} = (109/125) * 100 = 87,2\%; \quad P7^{2022} = (111/132) * 100 = 84,1\%.$$

It is accepted that the lower the level of financial resources and time for management decisions, the higher the quality of this process. The calculated values showed a low level of expenditure of financial resources and a high level of expenditure of time. Thus, the level of the latter has affected the deterioration of the quality of the process.

8. Level of validity:

$$P8^{2021} = 63/100 = 63,0\%; \quad P8^{2022} = 66/100 = 66,0\%.$$

This figure must be <100%. Thus, the calculations showed that the management decisions made by the managers at the enterprise were justified.

9. Level of employee involvement:

$$P9^{2021} = (254/486) * 100 = 48,4\%; \quad P9^{2022} = (254/486) * 100 = 47,5\%.$$



It is known that to ensure the quality of the management decision-acceptance process, managers should involve more than half of the company's staff (different levels of management), as this will provide additional or relevant information through direct contact with consumers, suppliers, intermediaries, etc. and reduce resistance from contractors. in the process of implementing decisions made with their direct participation. As you can see, half of all employees were involved in the decision-acceptance process at the company, which is a positive fact.

Define the quality level index of the management decision-acceptance process:

$$I_{\text{acceptance}}^{2021} = (17,6 + 56,0 + 71,2 + 56,8 + 37,8 + 39,9 + 87,2 + 63,0 + 48,4) / 9 = 53,1\%;$$

$$I_{\text{acceptance}}^{2022} = (20,5 + 52,3 + 62,9 + 58,3 + 30,6 + 41,8 + 84,1 + 66,0 + 47,5) / 9 = 51,6\%.$$

As calculations have shown, the index of the level of quality of management decisions at enterprise in 2021–2022 was in the range of 0.5–0.74, so this process at the enterprise was characterized by a sufficient level of quality.

The data show that at enterprise the goals were fulfilled and additional ones were formed and implemented during the year. However, in the process of implementation there were conflicts: some decisions taken before implementation contradicted current regulations and/or goals, strategies and/or internal corporate norms and rules. The decisions made were communicated to employees for their implementation within 2–3 hours, and were implemented – within 2–3 days, depending on the level of complexity of implementation.

The managers of the enterprise not only in acceptance management decisions, but also in their implementation are looking for alternatives to save time, all kinds of resources and more. In 2021 – 9 and 46; in 2022 – 42 and 21 alternative and 2 alternatives were proposed, respectively.

However, the weakness of the process of implementation of management decisions was that a number of decisions were not implemented at all or implemented late due to a number of reasons (refusal to implement performer; untimely start, slowdown or non-completion of the implementation process). The strong point was that about 98% of all decisions were in line with environmental trends, and therefore were relevant.

The process of implementing management decisions is costly. Thus, the enterprise spent UAH 30.3 and 35.3 million on this process in 2021–2022 in accordance.

Let's determine the level of the process of implementation of management decisions based on the indicators:

1. The level of achievement of goals:

$$K10^{2021} = (0,7*62 + 0,6*24 + 0,9*27) / 125 = 59,2\%;$$

$$K10^{2022} = (0,5*38 + 0,9*39 + 0,6*55) / 132 = 66,0\%.$$

It is estimated that the company in the period 2021–2022 in the process of implementing management decisions received an effect of 59.2% and 66.0%, respectively. That is, this process was characterized by a sufficient level.

#### 2. Level of collision:

$$P11^{2021}=\frac{(22+10+16)}{125}*100=39,7\%; \quad P11^{2022}=\frac{(23+12+18)}{132}*100=43,8\%.$$

As you can see, the implementation of management decisions in 2021–2022, respectively, 39.7% and 43.8% complied with current legislation, strategy and goals of the enterprise, internal corporate norms and rules. The implementation of management decisions there were contradictory conflicts, which managers need to pay attention to.

#### 3. The level of conflict:

$$P12^{2021}=\frac{11}{30}*100=36,7\%; \quad P12^{2022}=\frac{12}{28}*100=42,9\%.$$

The obtained values showed that in the process of implementing management decisions there were cases of conflicts, which did not contribute to obtaining the maximum effect.

#### 4. Urgency of delivery to executors:

$$P13^{2021}=\frac{2}{57}*100=3,5\%; \quad P13^{2022}=\frac{2}{61}*100=3,3\%.$$

The decisions made for their implementation were communicated to the executors quickly and in general the duration of implementation was also short on average.

#### 5. Level of alternative:

$$P14^{2021}=\frac{199}{125}*100=164,5\%; \quad P14^{2022}=\frac{206}{132}*100=156,1\%.$$

The values of the indicator for 2021–2022 showed that management decisions in the process of implementation at the enterprise had a significant percentage of alternatives (64.5% and 56.1%, respectively) – this is proof of the quality of this process.

#### 6. Level of evaluation by performers:

$$P15^{2021}=\frac{(6+10)}{125}*100=12,8\%; \quad P15^{2022}=\frac{(10+17)}{132}*100=20,5\%.$$

During 2021–2022, the company had a small number of situations in which employees refused to implement management decisions or delayed. However, managers need to get rid of these cases.

#### 7. Level of compliance with environmental trends:

$$P16^{2021} = ((117+2)/125) * 100 = 95,2\%; \quad P16^{2022} = ((118+4)/132) * 100 = 92,4\%.$$

It is clear that external factors constantly influence both the process of acceptance and the process of implementing management decisions. And it is necessary that these processes correspond to modern innovative tendencies of the environment. This correspondence was confirmed by the value of this indicator in the period 2021–2022.

8. Consumption level:

$$P17^{2021} = (9212/21087) * 100 = 43,7\%; \quad P17^{2022} = (9171/26122) * 100 = 35,1\%.$$

The value of the indicator was evidenced by a small percentage of costs in the implementation of management decisions at enterprise. But managers and the percentage of costs need to assess the compliance of the effect obtained from the implementation of decisions to the costs incurred.

Let's define an index of quality of process of realization of administrative decisions:

$$I_{\text{implementing}}^{2021} = (59,2 + 39,7 + 36,7 + 3,5 + 64,5 + 12,8 + 95,2 + 43,7) / 8 = 44,4\%;$$

$$I_{\text{implementing}}^{2022} = (66,0 + 43,8 + 42,9 + 3,3 + 56,1 + 20,5 + 92,4 + 35,1) / 8 = 45,0\%.$$

As calculations have shown, the quality index of the process of implementation of management decisions at the enterprise was in the range of 0.025–0.49, so the process of their implementation during 2021–2022 was characterized by a satisfactory level.

The main effective indicator of management activities of the enterprise is to obtain the effect of the process of acceptance and implementing management decisions. It is a creative process of choosing alternatives by managers and staff in order to achieve strategic goals of enterprise development.

The assessment of the process of acceptance and implementing management decisions at enterprise showed that the company according to the scale, in the analyzed period was characterized by: a sufficient level of management decisions and a satisfactory level of their implementation.

Thus, the defined integrated index at enterprise was:

$$I_{\text{management decision}}^{2021} = (0,531 + 0,444) / 2 = 0,488 \quad 1 \text{ (sufficient level);}$$

$$I_{\text{management decision}}^{2022} = (0,516 + 0,45) / 2 = 0,483 \quad 1 \text{ (sufficient level).}$$

Thus, at enterprise the level of the process of acceptance and implementing management decisions for 2 years was sufficient and almost unchanged. This indicates that the managers and staff of the company made timely and effective decisions and in

most cases effectively implemented them, which, in turn, ensured the achievement of goals at a sufficient level.

To determine the impact of the processes of acceptance and implementing management decisions on the profitability of the enterprise it is advisable to develop an econometric model.

Will prove the hypothesis that with the growth of the quality of the processes of acceptance and implementing management decisions at the enterprise, the level of its profitability will increase, and vice versa.

This model is multiplicative, ie takes into account the impact on net income of the most significant factors (selected) (Table 5).

Table 5

Data for the formation of a multiple regression model  
enterprise in the period 2021–2022

Indexes	Marking	2021 y.	2022 y.
<i>The process of acceptance managerial decisions</i>			
Net profit, thousand UAH	Y	7323	9398
Number of quality management decisions, units	X <sub>1</sub>	103	105
Number of alternatives, units	X <sub>2</sub>	214	215
Gross expenditures, thousand UAH	X <sub>3</sub>	253921	261876
Time costs for acceptance management decisions, hours	X <sub>4</sub>	109	111
The share of information received,%	X <sub>5</sub>	63	66
The number of executors involved in acceptance management decisions, pers.	X <sub>6</sub>	241	243
<i>The process of implementing management decisions</i>			
Net profit, thousand UAH	Y	7323	9398
Level of achievement of goals,%	X <sub>1</sub>	113	117
Total number of conflicts, units	X <sub>2</sub>	30	28
Average implementation time, hours	X <sub>3</sub>	57	61
Number of alternatives, units	X <sub>4</sub>	199	206
The number of management decisions made, the implementation of which did not take place or took place late, units	X <sub>5</sub>	16	27
The number of management decisions, the implementation of which corresponds to the trends of the external environment, units.	X <sub>6</sub>	117	118
The amount of possible costs, thousand UAH	X <sub>7</sub>	9212	9171

Note. Formed on the basis of source data: [14]

Let's confirm by point charts presence / absence of communication between net profit and factors of process of acceptance of administrative decisions (Fig. 2). The graphs show a significant correlation between net profit and factors in the management decision-acceptance process at enterprise.

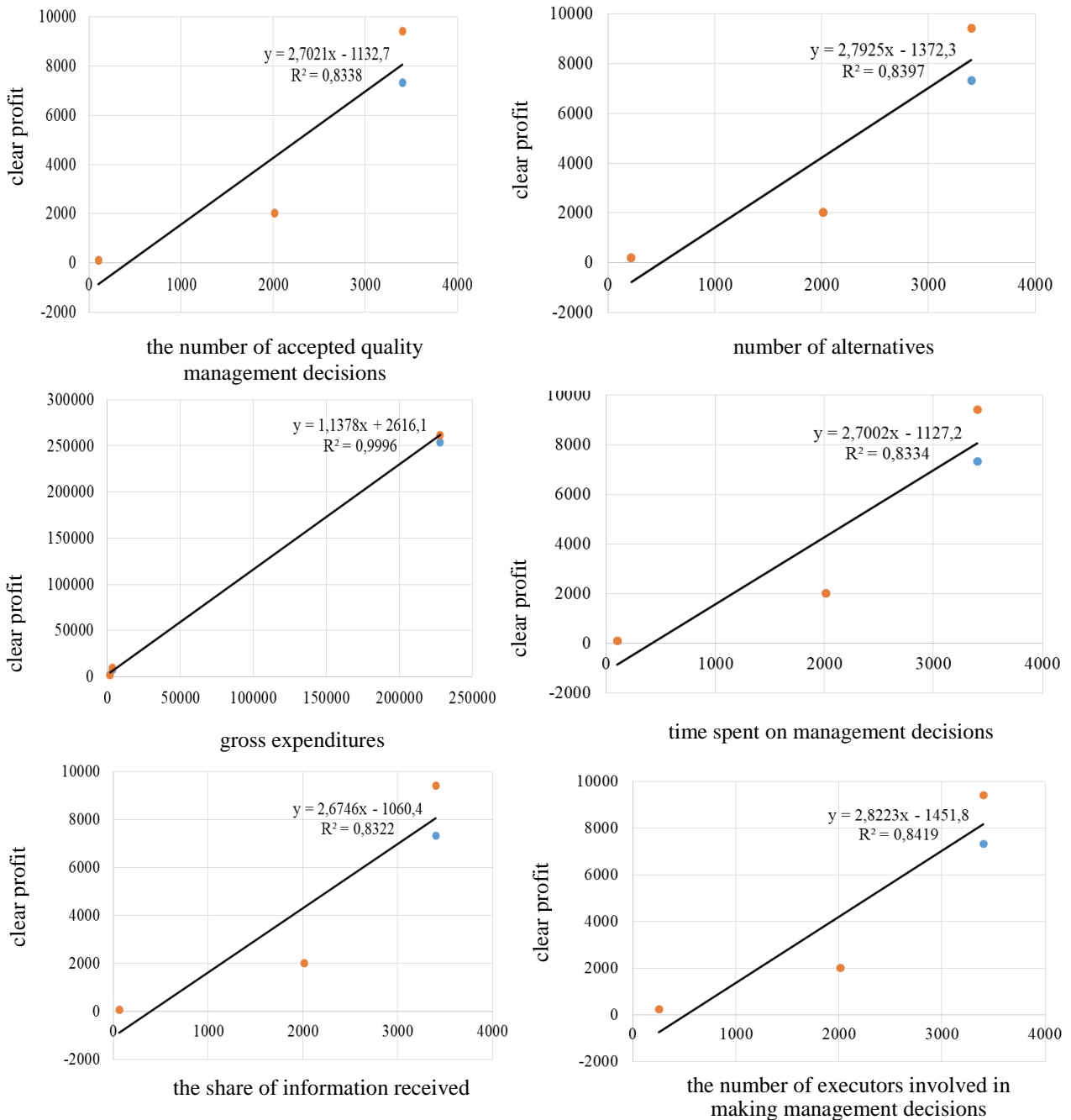


Fig. 2. The level of dependence between net income and factors in the management decision-acceptance process for enterprise in the period 2021–2022

Note. Formed by the authors

Let's confirm the presence / absence of a connection between the value of net profit and the factors of the process of implementation of management decisions (Fig. 3).

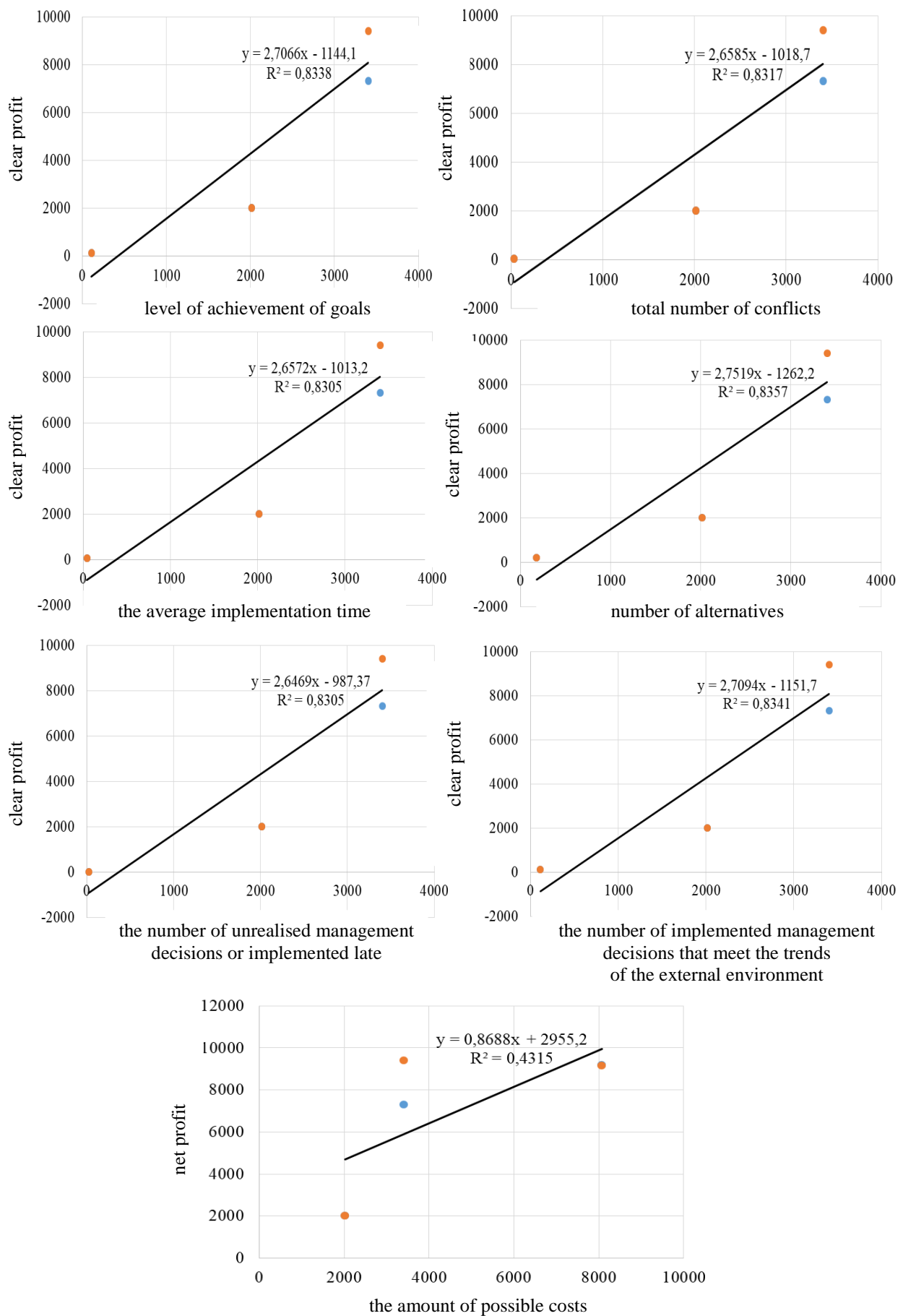


Fig. 3. The level of dependence between net profit and factors of the process of implementation of management decisions for enterprise Note. Formed by the authors

As we can see, the nature of the interdependence of such production parameters as net profit and factors in the process of implementing management decisions (in addition to the amount of possible costs) was significant.

Correlation dependences of the level of labor productivity at enterprise on these indicators are summarized in table 6.

Table 6

Correlation dependences of the level of profitability  
enterprise in the period 2021–2022

Indicator	Regression equation	$R^2$
Number of quality management decisions, units	$y = 2,7021x - 1132,7$	0,8338
Number of alternatives, units	$y = 2,7925x - 1372,3$	0,8397
Gross expenditures, thousand UAH	$y = 1,1378x + 2616,1$	0,9996
Time costs for acceptance management decisions, hours	$y = 2,7002x - 1127,2$	0,8334
The share of information received, %	$y = 2,6746x - 1060,4$	0,8322
The number of executors involved in acceptance management decisions, pers.	$y = 2,8223x - 1451,8$	0,8419
Level of achievement of goals, %	$y = 2,7066x - 1144,1$	0,8338
Total number of conflicts, units	$y = 2,6585x - 1018,7$	0,8317
Average implementation time, hours	$y = 2,6572x - 1013,2$	0,8305
Number of alternatives, units	$y = 2,7519x - 1262,2$	0,8357
The number of management decisions made, the implementation of which did not take place or took place late, units	$y = 2,6469x - 987,37$	0,8305
The number of management decisions, the implementation of which corresponds to the trends of the external environment, units	$y = 2,7094x - 1151,7$	0,8341
The amount of possible costs, thousand UAH	$y = 0,8688x + 2955,2$	0,4315

Note. Formed by the authors

Studies have shown that the best trend line describes the highest dependence of net income on gross expenditures. The values of  $R^2$  are close to 1, which indicates a high degree of coincidence of the line with the data. In general, it was found that the level of profitability depends on the quality of the processes of acceptance and implementing management decisions in the enterprise. The hypothesis is proved and substantiated.

As a result of scientific work the following conclusions were formed:

1. The approaches of scientists to the content of the concept of «management decision» and the peculiarities of the process of its adoption and implementation are studied and the existence of different points of view is established: on the one hand it is a choice of rational decision implementation, control and analysis of the results.

2. The estimation technique which includes indicators of acceptance and realization of administrative decisions and will allow to estimate a level of quality of

processes of acceptance and realization of administrative decisions at the investigated enterprise is formed.

3. The quality level of management decision-acceptance and implementation processes at enterprise in 2021–2022 was assessed and the following was established:

1) the quality index of the management decision-acceptance process at the enterprise was within 0.5–0.74, so this process characterized by a sufficient level of quality;

2) the quality index of the process of implementation of management decisions at the enterprise was in the range of 0.025–0.49, so this process was characterized by a satisfactory level.

The results of the comprehensive assessment showed that in 2021–2022 at enterprise the integrated index of the process of acceptance and implementing management decisions was 0.488 and 0.483, respectively – so it was sufficient and almost unchanged: managers and staff made timely and effective management decisions and mostly effectively implemented them.

4. It is recommended that the managers of enterprise develop a model of the dependence of the level of profitability of the enterprise on the processes of acceptance and implementing management decisions.

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### 3.4. APPROACHES TO IMPROVING THE MANAGEMENT OF ORGANIZATIONAL PROCESSES

The market economy provides any organization with ample opportunities for self-regulation. Every organization must become a self-managed system. Enterprises that conduct business on the basis of a systemic approach to management forecast the market situation, promptly and timely respond to changes in the external environment, and make adjustments to their activities. Enterprises that are able to correctly assess changes in the needs of society, market conditions, and choose the right business strategy become successful. It is necessary in modern conditions to form a management system in the organization, which is based on progressive conceptual principles and specific methods of effective management and marketing in its activities.

In the conditions of market changes, the number of problems that enterprises need to be able to solve correctly is increasing. Making effective management decisions will make it possible to avoid negative consequences and achieve the set goals.

In the conditions of increasing competition in the foreign and domestic markets, it is necessary to improve approaches to the management of organizational processes. The need for their research, as well as the need to develop mechanisms that ensure the effectiveness of management of organizational processes, is growing significantly. This situation is due to the increase in the level of uncertainty of the external environment, the emergence of new market factors, the growth and changes in the requirements of the external environment for the business entity.

In modern conditions, the mechanisms for achieving compliance between the organization's activities and the requirements of the environment are becoming more complicated. This compliance is based on economic levers of influence on the enterprise. In general, the rejection of directive planning of economic activity, the complete autonomy of the organization's activities led to a significant decrease in the level between the organization's activities and the requirements of the environment.

In modern realities, the operating environment of the enterprise is also changing significantly. Since the organization's activity is aimed at achieving certain goals of development and functioning, modern options for increasing the level of efficiency of the organization's management system are becoming relevant.

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The operating environment of Ukrainian enterprises is characterized by a high degree of instability and uncertainty. In order to survive, they must respond in a timely manner to changing operating conditions, adapt to them. At the same time, enterprises need to get maximum benefits from market opportunities. For this, they should make maximum use of management and production potential. Therefore, one of the main tasks for the enterprise is the choice of the optimal organizational management structure. Such a structure should best meet the goals of the enterprise in the existing operating conditions. The structure should take into account the influence of internal and external factors, as well as the implemented strategies of the enterprise.

This requires the establishment of a mechanism for constant forecasting and control of changes in the internal and external environment at the enterprise. It is also necessary to create mechanisms to ensure the development of the enterprise's organizational structure. That is why targeted modeling of the enterprise's organizational structure and the implementation of its development mechanism ensure a timely and objective determination of the need for structural changes. There is an increase in the quality of design and a decrease in the resistance of employees during the implementation of projects for the development of the organizational structure of the enterprise.

The organizational structure of management provides for the distribution of functions and decision-making powers between managers who are responsible for the activities of structural divisions and make up the organization of the enterprise. As part of the enterprise's organizational structure, information is disseminated and management decisions are made (management process). Management tasks and functions, rights and responsibilities for their implementation are distributed among the participants of the management process.

When building any enterprise, the task of managers is to choose or develop an optimal structure. Such a structure should most effectively correspond to the goals, strategy, tasks, specifics of the enterprise's activities, and the conditions of operation.

The improvement of organizational management structures should be ensured by finding and implementing rational forms of combining centralization, a clear division of management functions, establishing a reasonable ratio of rights, duties and responsibilities. Such distribution should take place in the management apparatus as a whole and in all its divisions and among all employees. In this case, the necessary effectiveness and reasonable stability of the structure is achieved. At the same time, an increase in the technical level of production (its concentration and an increase in the number of connections) lead to a significant increase in requirements for the flexibility of management structures.

The need to improve the existing organizational structure arises in the following cases:

- the program for cost minimization and efficient use of organizational resources does not give positive results;

- uneven distribution of functional duties is observed;
- there is an overload or low workload of employees;
- internal and external economic instability occurs;
- there are changes in the technology of production processes;
- there are changes in personnel management processes.

In the process of designing the organizational structure, a program for evaluating the effectiveness of the functioning of each unit is developed. If the designed organizational structure is not successful and effective, a set of corrective actions should be ready. These actions are aimed at finalizing and improving the organizational management structure. Therefore, the question of building a rational structure of organizational management is urgent.

Organization, as a function of management, is considered as a process carried out by the manager and aimed at distributing joint activities among performers and establishing causal relationships between them that cause the effect of an additional useful result (Martynenko M.M., 2005).

Organization is the process of creating an enterprise structure that enables people to effectively work together to achieve goals (Michael H. Mescon, Michael Albert, Franklin Khedouri, 1984).

The function «organization» should be considered as a means of ensuring the effectiveness of collective actions of people in the process of achieving common goals. Two levels of its implementation can be distinguished:

- the level of the enterprise management apparatus;
- the level of production divisions (shops).

This approach leads to the division of tasks of the organization into two specific classes (Martynenko M.M., 2005):

- the task of organizing managerial work;
- task organization of physical labor.

The organization of physical labor is determined by the need to synchronize the actions of workers who are engaged in the process of transforming raw resources into finished products. Organization tasks are means that ensure the correct implementation of management decisions and their completeness. Management decisions are made at the planning stage in the process of economic activity.

The organization of managerial work is determined by the conceptual scheme of the management organizational structure adopted at the enterprise. It is also determined by the existing system of delegation of powers (centralized or decentralized) in the management apparatus. The tasks of effective implementation

of the organization's function make up a significant part of the organization's management tasks. Therefore, the question of their analysis and evaluation is relevant. Such an analysis should include the following directions:

- analysis of the organizational structure of the organization's management;
- assessment of the level of organization of managerial work.

The organizational structure of the organization's management is an ordered set of bodies that manage the organization's activities and the relationships between them. In the management system, the organizational structure of management is constantly changing. It is under the influence of factors of the internal and external environment. The organizational management structure is influenced by the results of the organization's production and economic activity and the conditions of its functioning.

The sources of information for the analysis of the organizational structure of management are:

- organization management structure;
- provisions on functional subdivisions;
- job instructions;
- staff schedule of divisions;
- orders and orders of managers;
- the results of the employee survey,
- regulatory and reference materials;
- the main technical and economic indicators of the organization's activity;
- materials from foreign experience.

The effectiveness of organizational management structures can be evaluated according to the following criteria (Kopytova I. V., 2014):

1. The level of reliability (efficiency) of the organizational management structure. It is characterized by:

- the degree of rationality and structuring of the system into elements. It is based on the grouping of tasks to determine the types of work, the grouping of types of work and the distribution of management functions. Ensured compliance with the principles of actualization and concentration of functions;

- the degree of rationality of the structure. It is determined by the relationship between the elements. It is ensured by compliance with the principle of compatibility (the condition of their interconnection and interaction);

2. Level of use of market opportunities. It is characterized by the ability of the economic system to implement a set of goals and objectives of the functioning and development of the organization in the external environment through its organizational structure;

3. The level of use of internal capabilities. It is characterized by the ability

of organizational management structures to achieve set goals at minimal and necessary costs. This provides a control mechanism.

The efficiency criterion of each element of the organizational management structure is determined taking into account the specifics of each element and their relationship:

- implementation of set goals (target effectiveness);
- ensuring minimum costs to achieve the final result (resource efficiency).

There are many approaches to indicators for evaluating the effectiveness of the organizational structure of enterprise management. The main conceptual scientific approaches differ in their focus:

The first methodological approach involves evaluating the effectiveness of the management system through indicators characterizing the activity of the managed object. The main criteria for evaluating efficiency in this approach are:

- indicators of the volume of production and sale of products in value terms;
- profit of the organization;
- production cost;
- performance indicators of contractual obligations. They are generalizing performance criteria. They indicate the effective operation of the organization and its management system.

The second methodological approach considers the effectiveness of the management system through the ratio of the results of production and economic activity and management costs. Organization management costs include:

- current costs for maintaining the management apparatus. These include expenses for payment of the work of the management apparatus, expenses for training and retraining of management personnel;
- expenses for the formation and maintenance of the efficiency and effectiveness of the functioning of the organizational management structure itself. These include payment for consulting services of a third-party organization, expenses for individual events, financing of the work of expert councils or experts.

The third methodical approach involves evaluating the effectiveness of the management system according to qualitative criteria. They include:

- the number of hierarchical levels of the management structure;
- availability of communication links,
- the number of departments and communication channels,
- level of structuring and duplication of management functions;
- the level of centralization of management functions and tasks in departments, subdivisions, services;
- level of task coordination.

The evaluation of the effectiveness of the management system is carried out on

the basis of:

- assessment of general and specific goals, functions, tasks of management;
- assessments of the organizational structure of management,
- assessment of the characteristics of the management process;
- assessment of management methods;
- evaluation of the effectiveness of the development of management solutions;
- evaluations of the composition of technical means of management.

The fourth methodological approach involves evaluating the effectiveness of the management system based on its ability to achieve set goals.

The fifth methodological approach is complex and includes a combination of the following groups of indicators:

1) indicators characterizing the effectiveness of the management system through the final results of the organization's activities and management costs;

2) qualitative indicators - productivity of management personnel, economy, adaptability, flexibility of the organizational structure, efficiency and reliability of management systems;

3) indicators of the rationality of the organizational structure and its technical and organizational level.

The sixth methodical approach assumes that the indicator of the effectiveness of the organization's functioning is determined on the basis of the formed goal, which it seeks to achieve with minimum total costs.

The analysis of the organizational structure should involve a combination of a target and a functional approach to management. Therefore, the analysis should be carried out in three stages (Martynenko M.M., 2005):

1. Establishing the degree of compliance of the organizational structure of the mission with the goals of the organization, taking into account its features. Assessment of the compliance of the organizational structure with the management systems, goals, tasks and prospects of the organization's development is carried out in a certain sequence. First, the type of organizational structure is established. They develop matrices of goals (tasks) of the organization. They are compared with the existing organizational structure using the table (Table 1).

Table 1

## Implementation of goals in the existing organizational structure

Subdivisions of the management apparatus, officials	List of goals (tasks) of the organization	
	Ensuring optimal stocks	Change of technology, change of installation works
Director	+	+
Deputy Director of Economics	-	+
Chief Engineer	-	+
Deputy director of marketing	+	-
Commercial Department	+	-
Planning and Economic Department	-	+

Note. Generalized by the authors based on source data: [1]

Conventional symbols, for example, «-» or «+» determine participation in solving specific tasks (based on the calculation of the corresponding shares). Matrix tables are filled in for each subdivision of the management apparatus and the organization as a whole.

With the help of this approach, the tasks to be solved by the apparatus or structural link of management are defined; problems that are not solved in full, or not sufficiently qualitatively, do not correspond to the purpose of the links; functions that are duplicated by several links due to unestablished linear and functional connections.

2. Analysis of the construction of the organizational structure. They find out how rational the built organizational structure, functions and tasks of units in management processes are. Their analysis is carried out in the following directions: evaluation of the structure according to the type of structure; analysis of the number of subdivisions or links; analysis of their functioning; assessment of relationships between the management apparatus and executors. The subject of the analysis is the horizontal and vertical distribution of management powers, while establishing the degree of centralization, the level of specialization and competition in the divisions of the management apparatus, the technology of management processes; necessary functions for the management of a specific object, actually performed management functions, management functions provided for by statutory instructions and directive documents. Table 2 is compiled based on the survey of each head of management.



Table 2

## List and characteristics of actually performed management functions

Functions	Terms of execution	Departments for which execution is fixed	Responsibility of the official	Labor intensity of implementation	Conclusions about the expediency of performing functions

Note. Generalized by the authors

At the next stage, a matrix of the functional distribution of functions of the control apparatus is formed (Table 3).

Table 3

## Matrix of the functional distribution of functions of the control apparatus.

Functions	Units, managers, other officials performing functions						
	Financial Department	Planning and Economic Department	Sales Department	Design Department	Human Resources Department	Production Department	Legal Department

Note. Generalized by the authors

### 3. Generalization of information and substantiation of conclusions.

In addition to the qualitative assessment of organizational management structures, their quantitative assessment, based on certain criteria and indicators, is necessary.

A significant number of works by foreign and domestic scientists are devoted to the results of the research on the assessment of the effectiveness of the organizational structure of the organization, but there is a significant ambiguity in the approaches to the selection and formation of indicators for analysis. Based on the synthesis of the above approaches, it is advisable to consider the effectiveness of the organizational structure of the organization's management from the point of view of both the object and the subject of management (functional diagnosis). Effectively organized structure ensures minimum costs. The optimal use of all available resources in the organization (as an object of management) indicates the level of work organization and functioning of management personnel (subject of management);

An effectively organized management structure helps the organization achieve the indicators that characterize the main goals of its activity. They are necessary to achieve the final result (target diagnosis). Therefore, when evaluating the effectiveness of the organizational structure of enterprise management, it is advisable to combine target and functional diagnostics.

Target diagnosis indicates the final result that the organization seeks to achieve. It includes economic, organizational and social parameters. Functional diagnosis

directly specifies goals for functional areas of activity. It is formed from the capabilities of the organization (Figure 1).

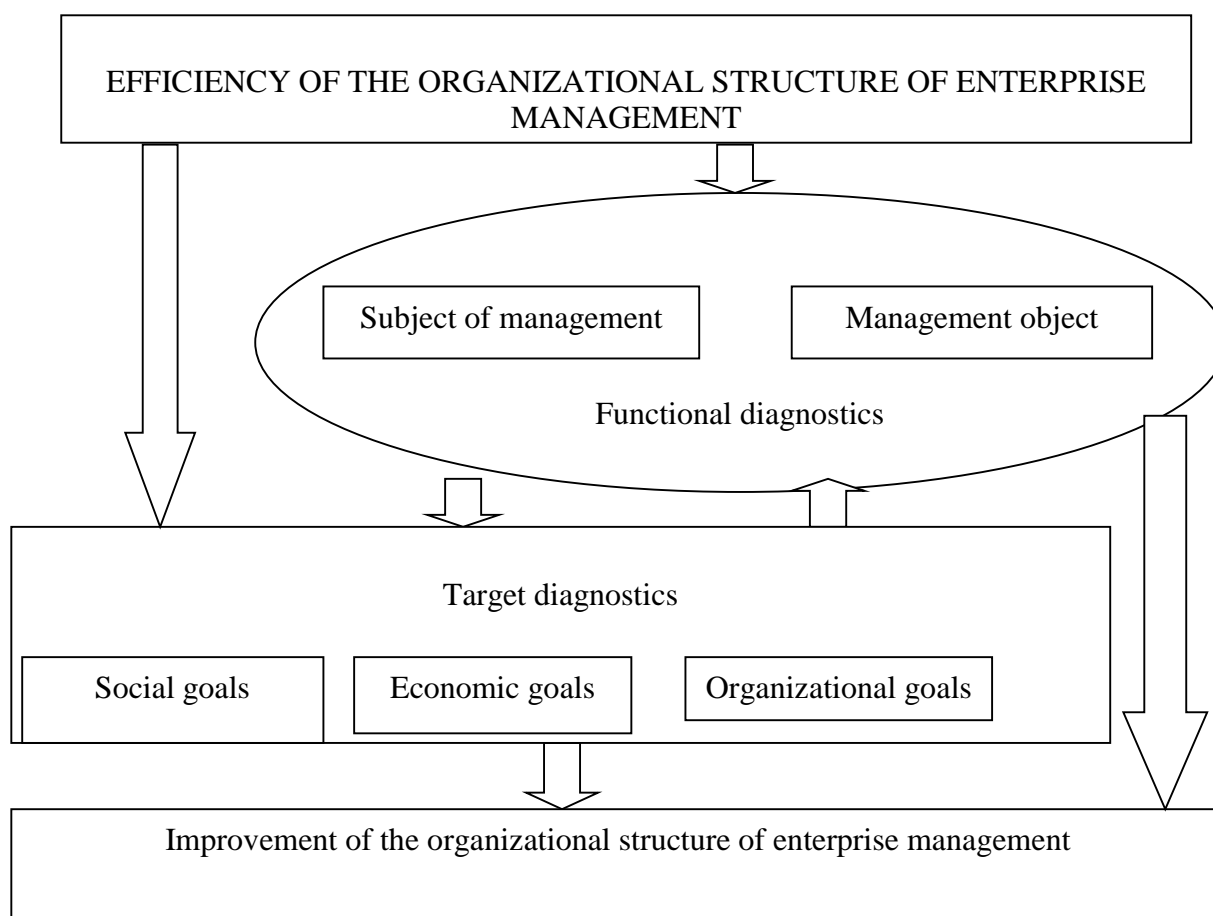


Fig. 1. A methodical approach to assessing the effectiveness of the organizational structure of enterprise management

Note. Generalized by the authors based on source data: Martynenko M.M. (2005); Michael H. Mescon, et al. (1984); Kopytova I. V. (2014).

On the basis of the conducted diagnosis, a set of necessary measures to improve the organizational structure of enterprise management is introduced.

Functional diagnostics (by management object) involves the calculation of the following indicators (Management analysis: training. Manual (2013):

Finances:

- indicators of the property condition of the enterprise (depreciation rate, recovery rate, disposal rate);
- indicators of financial stability of the enterprise (coefficient of financial autonomy, coefficient of financial dependence, coefficient of financial risk, coefficient of financial risk);

- solvency indicators (absolute liquidity ratio, critical liquidity ratio, current liquidity ratio);

- business activity indicators (fixed assets turnover ratio, inventory turnover ratio, accounts receivable turnover ratio, payables turnover ratio, duration of the operating cycle, duration of the financial and operating cycle);

- profitability indicators (net profitability of assets, economic profitability ratio, capital profitability, financial profitability ratio, commercial profitability ratio, gross profitability of sales, operational profitability of sales, net profitability of sales).

#### Production:

- indicators of the organizational level of production (proportionality coefficient, directness coefficient, flexibility coefficient, rhythmicity coefficient, continuity coefficient, specialization coefficient, parallelism coefficient, specialization coefficient);

- indicators characterizing the progressiveness of production (the coefficient of coverage of products by typical technological processes; the specific weight of progressive technological processes; the amount of implementation of technically justified norms; the specific weight of technically justified production norms);

- indicators characterizing the level of mechanization and automation of production (level of coverage of employees with mechanized work, level of mechanization of work, level of automation, robotization, level of use of flexible automated systems);

- indicators of production armament (fundamental armament of labor, techno-armament of labor, energy-armament of labor); indicators of the quality of products and production (coefficient of grade, number of complaints, amount of defects);

- indicators of rhythmicity of production (coefficient of rhythmicity; coefficient of variation; coefficient of arrhythmicity);

- indicators characterizing the use of the enterprise's production capacity (the coefficient of intensive use of the enterprise's production capacity; the coefficient of extensive use of the enterprise's production capacity; the general coefficient of the use of the enterprise's production capacity).

#### Marketing:

- profitability of promotion and sales expenses;

- profitability of marketing expenses;

- the share of marketing personnel in the total number of personnel of the enterprise;

- the share of costs for marketing personnel in the general wage fund of the enterprise;

- profitability of marketing investments;

- economic efficiency of the marketing complex.

Personnel: turnover ratio from acceptance; turnover ratio from dismissal; coefficient of total turnover; personnel replacement rate; coefficient of staff stability; necessary turnover; coefficients of change; quality of personnel placement; specific weight of the main workers; compliance index; qualifications; ratio of specialists by education; personnel training ratio; employee utilization ratio; qualification ratio; coefficient of work experience; coefficient of work experience for special

Functional diagnostics (by management entity) ensures the calculation of the following indicators: coefficients of duplication of functions in the management system; coefficient of update of management functions; coefficient of concentration of management functions; the coefficient of accumulation by organizational structural dysfunction; coefficients of performance of management functions; coefficient of coverage of powers from a certain management function; coefficient of duplication of management work; the coefficient of concentration of managerial work in the network of this management function; coefficient of regulation of management functions; coefficient of combination of management functions.

Target diagnosis, determination, calculation of indicators for the purpose of achievement:

a) organizational goals: coefficients of rationality of the management structure; flexibility of the organizational management structure; coefficient of decentralization of management functions; coefficient of centralization of management functions; coefficients of competitiveness of processes in the management system; parallelism of processes in the management system; effectiveness of the organizational management structure; management efficiency; coefficient of management labor organization; coefficients of the depth of specialization of managerial work; linkage coefficient; control factor; enterprise management norm; throughput rate of the control system; coefficient of maneuverability of the control system; perturbation coefficient of the control system; management efficiency ratio;

b) economic goals: coefficient of professional development of managers; coefficient of stability of personnel of the management apparatus; management profitability ratio; labor productivity of management personnel; management cost effectiveness; the efficiency of the cost effectiveness of maintaining the management apparatus; coefficient of rationality of the management structure; ratio of management and production personnel; coefficient of compliance of the qualifications of management personnel; effectiveness of management personnel; coefficient of management labor organization; the dependence of the remuneration of the management apparatus on profit; the level of management costs; staff employment rates in the management apparatus; coefficient of stability of management personnel; staff employment rates in the management apparatus; coefficient of labor regulation in management;

c) social goals: lighting factor of workplaces; coefficient of temperature regime; color design; silence factor; coefficient of sanitary and hygienic conditions; coefficient of psychological environment; coefficient of use of office equipment; coefficient of labor discipline; job planning factor; ensuring the efficiency of office premises; coefficient of organization of service premises; service furniture condition factor; coefficient of workplace organization; performance ratio; working time utilization rate; information load factor; coefficient of regularity of relationships; connection compatibility coefficient; coefficient of labor regulation among employees; working time intensity factor; coefficient of rational use of working time; coefficients of regulation of the activity of structural divisions; documentation probability ratio; coefficient of planning and quality of work.

The methodology for calculating specific indicators for evaluating the effectiveness of the organizational structure of enterprise management is given in the source (Management analysis: training. Manual, 2013).

If the estimated level of indicators indicates the inefficiency of the existing organizational management structure, a number of measures should be taken to improve it. Measures, costs for their management and results should be drawn up in the form of Table 4 (Osovska G.V., Kopytova I.V. (2005).

Table 4

Results of improving the management organizational structure

Name conducted activities	Number measures	Results (indicators)			
		Event expenses	Increase in profit from the implementation of measures	Relative staff reduction	Growth of labor productivity
1. Improvement of the organizational structure and forms of management					
2. Improvement of technical and information support					
3. Improvement of management methods					
4. Improvement and change of management functions					

Note. Generalized by the authors based on source data: Martynenko M.M. (2005); Michael H. Mescon, et al. (1984); Kopytova I. V. (2014); Osovska G.V., Kopytova I.V. (2005).

Improving the organization of work in management involves a critical quantitative analysis of the existing level. A special summarizing indicator is introduced for its assessment. It contains a set of coefficients that characterize organizational, technical, sanitary and hygienic, psychological and other conditions.

This makes it possible to identify problem areas, define and implement a set of necessary measures, and justify the sequence of proposed measures.

The criteria for the effectiveness of the management structure must be consistent with the company's development strategy, compare the qualitative and quantitative parameters of the management system, and take into account the peculiarities of the business entity.

There are a large number of methods and techniques for effective management of organizational processes at the enterprise. The defining feature of the success of an operating enterprise is the continuous movement forward, the search for new ways of working with customers and personnel, unwillingness to stop at the achieved results, improvement of the management system.

In order to improve the management of organizational processes, enterprises need to train as many leaders, innovators, competent and responsible specialists as possible who dare to take risks. Work in the organization should be carried out based on the principle of trust in subordinates. Managers of organizations should focus on the motivation of personnel, establish clear and rational interaction between levels and links of management, between employees of the same department.

Effective management can be carried out in conditions where there is a system that qualitatively solves operational and strategic management tasks, when the goals are clear and specific, when they can be skillfully implemented taking into account the resources of the enterprise, its business methods and acquired skills.

Effective management of organizational processes is a form of embodiment of managerial relationships. The management system of the organization is formed and operates in accordance with the content of the management functions and the nature of the relationships that underlie management relationships. At the same time, the organization's management system is formed and operates under the influence of circumstances and factors of the external and internal environment. Effective management of organizational processes is possible under the condition of a situational approach to management (taking into account the organization's mission, vision of its development directions and goals).

Effective management of operational processes at the enterprise involves the organization of relationships between people, and the more thoroughly it is reproduced and skillfully regulated, the more opportunities there are for obtaining economic benefits, for profitable reimbursement of expenses.

For the effective functioning of enterprises in modern conditions, internal interaction and effective adaptation to the external environment are necessary, in which each employee clearly knows his duties and strives to fulfill them fully and on time.

The mechanism of management of organizational processes involves the interaction of three processes:

- 1) information process;
- 2) the process of making and making management decisions;
- 3) organizational influence on the object of management for the implementation of a management decision.

The formation of management technology implies the division of these processes into tasks and procedures. It is also necessary to choose appropriate tools and methods of their implementation in accordance with the chosen approach to management.

Management of organizational processes in the management system of the enterprise occurs through the improvement of the work of its functional subsystems (Fig. 2).

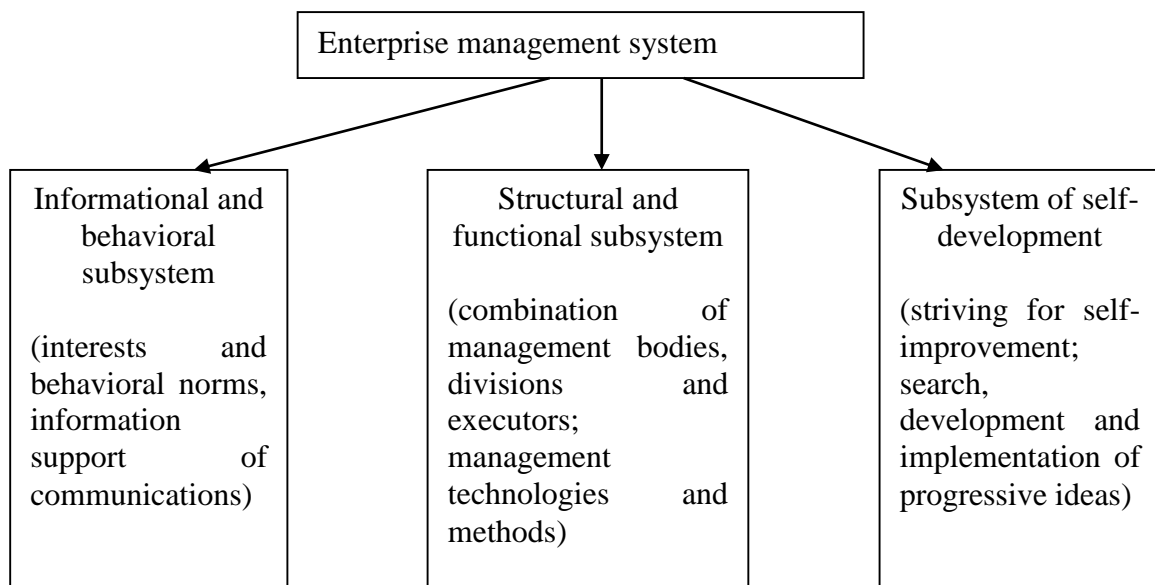


Fig. 2. Subsystems of the enterprise management system

Note. Generalized by the authors based on source data:

Osovska G.V., Kopytova I.V. (2005).

The structural and functional subsystem is a set of management bodies, divisions and performers. The organization staff performs the functions assigned to it and solves the tasks set before it. The structural and functional subsystem of the management system combines technologies, organization and management methods.

The information-behavioral subsystem of the management system combines the main elements characteristic of the enterprise, namely:

- organization mission, market positioning, business vision;
- value orientation of the management system in relation to its own staff and customers;
- behavioral standards and interests of participants in the process of managerial activity;
- information provision of communications and information in the management

system;

- focus on the maximum satisfaction of customers' needs, taking into account the continuous implementation of innovative measures;
- the use of creative management methods, based on the idea of a qualitatively new approach to the management process;
- study of actual customer needs and their satisfaction;
- automation of the management process;
- introduction of digital economy techniques;
- use of convenient mobile applications;
- placing orders through central office automation.

In conditions of accelerated information exchange, as well as in conditions of a significant increase in the significance of the synergy effect, the functions of information reproduction in the enterprise management system are expanding. The role of the information-behavioral subsystem in the management of organizational processes at the enterprise is rapidly growing.

The subsystem of self-development is important in the management of organizational processes in the enterprise management system. The emergence of the self-development subsystem reflects the emergence of the following qualities:

- adaptability to changes;
- striving for self-improvement;
- flexibility;
- focus on innovation;
- search and development of innovative ideas;
- accelerated introduction of innovative ideas into the organization's practical activities.

It is the subsystem of self-development that is the generator of the specified qualities. The subsystem of self-development not only demonstrates the specified qualities of the management system, but also includes the procedure for their practical implementation, consolidation, distribution and reproduction by improving the management of organizational processes.

A promising direction for improving the management of organizational processes at the enterprise is the development of human resources. This is due to the fact that the only possible real movement of the enterprise management system can only be the movement of its personnel. This movement is possible both vertically (advancement in position), and horizontally (change of job profile and workplace), as well as in depth (improvement of behavior and communication skills, growth of a positive attitude towards work, improvement of production vision, work skills, professional qualifications, mastering modern means of data transfer and information processing, mastering related professions).



The basis of management of organizational processes is the human factor. Effective management is possible if the staff realizes their own value for the organization. Managers at different levels of management must be able to organize their own work and the work of their team, as well as interest subordinates in creative activity and self-development.

Management of organizational processes through the joint activity of company employees involves contacts between them and exchange of information if necessary.

The enterprise (at the level of small groups and collectives) has a well-established system of communications (connections), and also ensures a communication process between members of the work team.

The main task of the manager is the ability to see the organization as a whole. Such a vision implies the need to manage organizational processes in the enterprise management system. Subsystems of the control system directly or indirectly interact with each other, as well as with the external environment. They should take into account that each, even individual managerial influence on each of the components of the organization, leads to certain consequences. These consequences for the organization are often unpredictable.

In the presence of an effective management system, when improving the management of organizational processes, there will be a change in sales volumes, a change in profit, and the scope of the organization's activities will expand. In general, this will lead to an increase in the additional cost of input resources.

The division of functional subsystems in the management system allows you to analyze organizational processes and the process of managing them and the activity of the enterprise as a whole. This allows you to quickly find a problem and quickly eliminate it with the least losses for the organization.

All types of information play an important role in the management of organizational processes at the enterprise. Information resources act as components of communication policy in the organization's management system. It is expedient for enterprises to use a wide variety of communication options not only with the external environment, but also within the organization.

In modern business conditions, the following are necessary to improve the management of organizational processes:

- optimization of the organizational structure of enterprise management (the basis of the structure should be target groups of specialists and teams, not only functions and departments);
- improvement of the organization of management and business through the improvement of the system of planning, accounting and control at the enterprise (according to the main indicators of the enterprise's activity);
- optimization of economic management of production resources and stocks;

- a clear orientation of activities to measure planned and achieved results in the work process;
- establishment of clear work performance standards and evaluation criteria of acquired knowledge, skills, and abilities;
- formation and provision of opportunities for improving the qualifications of employees and professional development;
- increasing the importance of responsibility and self-control of employees, the practice of flight control;
- using knowledge of ethics and psychology to establish friendly, trusting relationships in the internal and external environment of the organization;
- formation of organizational culture by instilling in employees a spirit of pride for their company,
- implementation of special programs of social responsibility in the organization;
- ensuring support for the high quality of products produced by the enterprise.

The final, higher goal of improving the management of organizational processes in the organization is to optimize the functioning of the management system as a whole, to achieve the best possible beneficial effect with the least costs and efforts.

In the process of managing organizational changes at the enterprise, it is important to stimulate actions, focus on people, and maximize profit. This will make the company successful in the market (Thomas J. Peters, Robert H. Waterman Jr., 1982).

Thus, modern enterprises operate in a dynamic external environment and are forced to instantly respond to market changes. At the same time, it is not enough to simply adapt to changes, effective organizations play in anticipation, that is, they themselves become agents of change and form new markets, beating weaker competitors. This determines the transition to flexible, organic types of organizational structure. The evaluation of the effectiveness of the organizational structure of management should be carried out according to methodical approaches aimed at taking into account the most important aspects of the management activity of the enterprise. It is necessary to apply indicators that combine various criteria for evaluating the effectiveness of management. They reflect existing approaches to understanding the essence of the functioning of the organizational management structure and its effectiveness. This will reduce the number of management links, neutralize the duplication of functions, strengthen horizontal and vertical connections, and strengthen the competence of specialists.

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### **3.5. THEORETICAL FOUNDATIONS OF THE FORMATION OF TEAM MANAGEMENT OF THE ENTERPRISE**

Modern market conditions of management are characterized by a high level of uncertainty and the rate of change in the factors of the internal and external environment of enterprises. Business models that have worked for a fairly significant period of time do not work today, the level of competition is growing, there is an active globalization and digitalization, there are a significant number of new challenges that require a response from management. In these conditions, the search for management tools that will ensure the prospects for development and competitiveness of enterprises is becoming increasingly important. Among the key factors of success, as the main capital, today increasingly called the personnel of the enterprise and effective technologies for its management. One of these management technologies is team building.

The realities of today are characterized by the need for constant monitoring of dynamic factors of the external and internal environment and an adequate response to them by the heads of organizations. Accordingly, there is an urgent need to form a management system that is able to quickly and adequately respond to changes and challenges of today, to level possible risks. Such a management system is primarily formed on the basis of an effective personnel management system, and its core – directly to the team of employees, which is a strategically important and unique resource of the enterprise, ensuring the efficiency of its activities, stable competitive positions, positive image. Modern management practices clearly prove that it is those enterprises whose staff works as a single cohesive organism – a team that are the most effective and successful in the market.

Team management is one of those approaches that allow an enterprise to focus on achieving a common result, which is also targeted for each employee. This is a management approach focused on maximizing the involvement, combination and balancing of the interests and goals of employees, departments and the enterprise as a whole. Accordingly, the relevance of scientific work lies in the justification of theoretical, methodological and applied approaches to the optimization of the management system, through the introduction of team technologies, which is focused on ensuring high market performance and efficiency.

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The study of the essence of team management and team formation, identification of features of their development and evaluation of performance are contained in the works of a number of both domestic and foreign scientists. Among them, it is worth highlighting the works: R. Ablyazov, M. Belbin, M. Bronstein, K. Davis, L. Karamushka, S. Maurice, I. Prokhor, T. Sazovnaya, A. Sidorenko, B. Takman, D. Torrington, I. Chumachenko and others. In addition, quite a few issues related to management style and team leadership are covered in the works of V. Vroom, D. McGregor, R. Blake, and J. McGregor. Moughton, R. Likert, P. Hersey and C. Blanchard, R. Tannebaum.

The need to select the most effective methods, methods, tools and technologies of influencing personnel for modern enterprises is quite acute. In this context, the application of team management, as one of the innovative HR technologies, which is focused on the formation of the company's team as a single cohesive team with common goals, a high level of involvement and motivation of the staff, acquires special relevance.

It should be noted that the basis of team management is the concept of "team", and accordingly, it is advisable to define the essence of this concept. In the scientific literature, there are quite a few concepts that by their nature mean a certain association of individuals: group, team, team, community. According to its content, the concept of "group" is the closest to the concept of "team", so it is appropriate to find out the similarities and differences between these concepts.

"A group is any number of people who interact with each other and are psychologically aware of the presence of other members of the group" (Korneeva, N., 2014). Along with this, a team is a group of people whose members mutually influence each other, are united by a common goal, have common goals, and whose activities are characterized by a synergy effect.

The team of authors under the leadership of R.A. Ablyazov, under the team proposes to understand - "an autonomous self-managed team of professionals that shares goals, values and common approaches to the implementation of joint activities, has complementary skills; assumes responsibility for the final results, is able to change the functional role correlation; has an intersecting affiliation to this society" (Ablyazov, R., 2008 p. 27).

Lenskaya I.Y. interprets the team as an autonomous, self-managed, efficiently interacting team of professionals who are able to quickly, efficiently, qualitatively solve the tasks assigned to him (Lenskaya, I., 2017).

Sazonova T.O., Ostashova V.O. the team is interpreted as: "a set of specialists, specialists, united by a single goal, the achievement of which is clearly defined by the boundaries of tasks, resources and time; they are like-minded people who are united around a single leader – a project manager; interact on the basis of agreed expectations

of appropriate behavior from each other on the basis of mutual trust and intragroup cohesion and group responsibility" (Sazonova, T., 2017).

The main approaches to the interpretation of the essence of the concept of "team" are grouped in Table 1.

Table 1

Theoretical approaches to the interpretation of the essence of the concept of team

Author	Definitions
1	2
Ablyazov, R.	"an autonomous self-managed team of professionals who share goals, values and common approaches to the implementation of joint activities, has complementary skills; assumes responsibility for the final results, is able to change the functional role correlation; has an intersecting affiliation to this society"
T.Sazonova, V.Ostashova	"a set of specialists, specialists who are united by a single goal, the achievement of which is clearly defined by the boundaries of tasks, resources and time; they are like-minded people who are united around a single leader – a project manager; interact on the basis of agreed expectations of appropriate behavior from each other on the basis of mutual trust and intragroup cohesion and group responsibility"
M.Bronstein	"a group of people who are organized to jointly solve a common problem in such a way that each of its participants is responsible for the results of the work of the whole group"
I. Lenskaya	"an autonomous, self-managed, efficiently interacting team of professionals who are able to quickly, efficiently, qualitatively solve the tasks assigned to it"
K.Fopel	"a small group of partners with complementary skills solve a common extraordinary task, together formulating a series of carefully considered and agreed goals"
L. Karamushka	"a group of specialists characterized by purposeful, coordinated work on the implementation of jointly defined tasks and functions of organization management, combining different knowledge, skills and abilities in the process of performing team roles and using partner principles of interaction"

The main differences between the concepts of "group" and "team" are systematized in Table 2.

Table 2

## Key differences between the concept of "groups" and "teams"

Criteria	Defining features of the concept of "group"	Defining features of the concept of "team"
Objectives of the activity		
goal	there is no common goal, there is a set of individual goals of employees	common goals that are independently defined by team members, or with the help of third parties, but are recognized by all its members
perception of goals by team members	acceptance of goals is formal	full awareness and perception of common goals, including on an emotional level
alignment of goals	the purpose and interests of the group and individuals are separated, not agreed upon	common goal and objectives of the activity are mutually consistent with the goals, needs and interests of team members
Features of member interaction and level of motivation		
method of establishing relationships	methods of interaction and its principles are mostly established from the outside (for example, by managers of the highest level of management)	team members independently establish interaction, jointly determine its features and principles focused on mutual support and interaction with the leader
a way to maintain interaction	regulated from the outside by special sanctions	the presence of internal close interaction
type of motivation	mainly external stimulation	intrinsic motivation due to common goals
type of relationship	formal functional interaction	maintaining partnerships of team members, the presence of principles focused on creating conditions for the realization of the goals and interests of team members
Features of the role structure		
installation method	roles distributed externally	the role structure is formed from the inside, on the basis of the prevailing goal, interests, needs, goals, strengths and weaknesses of its members
matching roles	coordination of roles is formal	there is mutual agreement and a harmonic combination of roles, their complementarity
order and structure	the order and structure is pronounced.	distribution of roles is either completely absent or is mild
the presence of a leader	the leader is absent, the functions of the head are formal-administrative	the role of manager and leader coincides
barriers to joining a group of new members	barriers to entry of new members into the group are not significant, entry is mainly formal, coercive, the expectations of group members are not taken into account	there are significant barriers to the entry of new members into the team, the limited nature of the entry of new members is related to comparison with the goals, interests, expectations and needs of the team, the principles of interaction between its members in the team

Based on certain differences in these concepts, it is possible to clearly track the advantages that an enterprise receives when implementing team building.

Firstly, team building and team building increases the level of employee involvement in management processes in the enterprise, which primarily occurs due to self-organization, self-management, partnerships, mutually beneficial, effective and harmonious cooperation, mutual control, quality interaction, mutual assistance, interchangeability, based on the presence of common goals, goals, values and principles, collective responsibility, team cohesion, availability leader and leadership qualities for each of the team members.

Secondly, cohesion, community and harmony of relationships within the team have a positive effect on labor productivity, which ultimately leads to an increase in performance, efficiency and quality of work.

Thirdly, teamwork contributes to the personal and qualification growth of each team member, which is formed both due to the interchangeability of participants and their functions, team roles, and due to the common goals, interests and values of each participant, the unity of their course of action and internal desire to meet their expectations. the fact that participants are required to use a variety of labor skills, and not just the ability to perform one or two functions.

The fourth advantage is the growth of involvement, dedication and commitment of team members, which is achieved primarily through decentralization of decision-making. Management decision-making takes place in an atmosphere of trust, all team members become involved in it. This creates a sense of awareness of responsibility for decision-making by all participants, and in the absence of consensus - shifting responsibility for the final decision to the head. Thus, dialogue becomes a tool for making management decisions, the goal of the team is a joint result of work, motivation is a high level of involvement, loyalty and participation.

The fifth advantage is the formation of a sense of "single family" among team members, when there are common goals, values, clearly distributed roles and tasks, and they are completely shared by team members.

Attention should also be paid to the lack of unity in the scientific literature regarding the interpretation of the essence of team management.

Team management should be understood as "a management approach focused on stimulating the creative activity of group activity in solving non-standard tasks, which makes it possible to increase the social and cultural creativity of employees, their direct participation in self-organization and self-government by joint activities, mutual control, mutual assistance and interchangeability, clarification of common values and goals that determine the behavior of each team member, collective and: responsibility for results and high efficiency of work, worldwide development and use of individual and group potentials" (Ablyazov, R., 2008, p. 23).



The main components of team management are the components shown in Fig. 1.

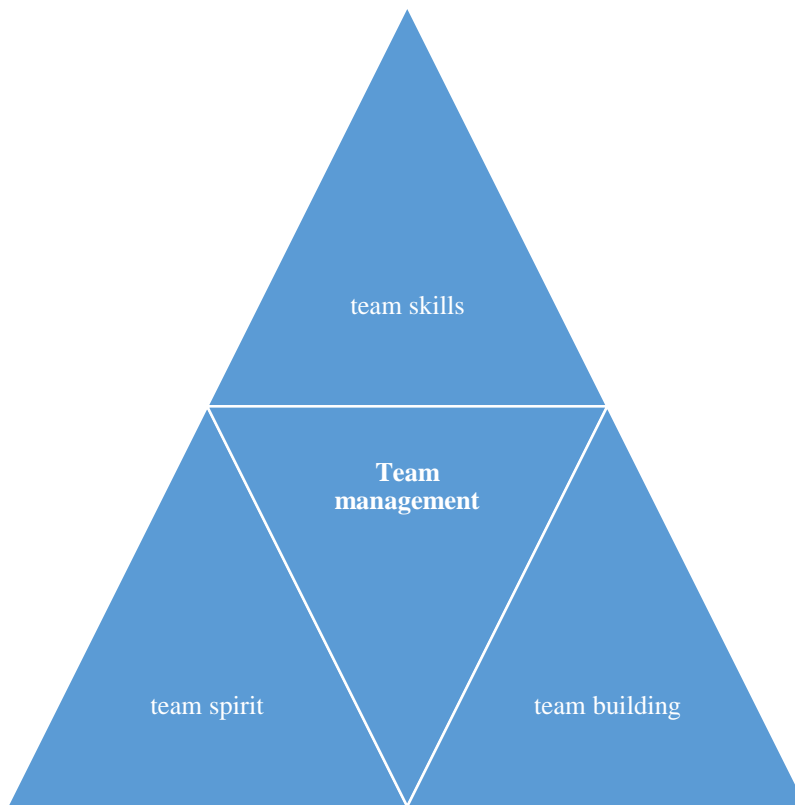


Fig.1. The main components of team management

Thus, the formation of an effective team management system in an enterprise requires the implementation of a set of measures aimed directly at the implementation of team building actions, the formation of teamwork skills and the strengthening of corporate spirit.

Detailing the features of each of the components is carried out in Table 3.

According to the research of scientists, the formation of an effective system of team management is carried out around the formation of small groups that unite like-minded people, and in their development go through several successive stages. In particular, according to a study conducted in 1977 under the guidance of Professor of Psychology B. Takman, five stages of development of small groups were clearly distinguished: formation, conflict, rationing, functioning, closure (Tuckman B, 2015). It is natural that the greatest efficiency is characterized by teams that are at the stage of functioning. Gradually moving along the stages of development, the team acquires maturity, relations within it normalize. Strengthened, the leadership style of the leader with directive, through the involvement of participants, achieves maximum delegation and inclusion of team members, their unification around common goals. Teams have a rather low efficiency at the conflict stage, and, according to scientists, there are teams that have been at this stage for quite a long period and begin to perceive it as familiar.

Table 3

## The main components of team management

team skills	team spirit	team building
harmonization of the common goal of the organization with the personal goals of the staff; focus of the whole team on the final result	formation and maintenance of a stable sense of "we"	integration into one whole of values, knowledge, skills, emotions, aspirations, dreams, actions; focus on solving common problems
taking responsibility for the result of the team	creating motivation for joint activities based on the mutual trust of team members	ensuring complementarity and interchangeability of specialists
situational approach to management and leadership, and a flexible change in management style in accordance with the characteristics of the tasks facing the team	understand and accept the individual characteristics of each other	maintaining a focus on continuous individual personal growth and professional development
constructive interaction and self-government of all team members	increase the informal authority of the organization's leadership	ensuring effective distribution of roles in the group
making a single team decision and coordinating it with team members	to develop loyalty and commitment of team members to the goals of the organization	clear distribution and integration of responsibility; collegial justification of the overall strategy and tactical decision-making

For the formation of an effective, cohesive, aimed at a common result of the team, it is extremely important to achieve an effective distribution of team roles. Classic is the approach to the distribution of business roles in the group, proposed by the British management specialist M. Belbin, who clearly distinguished between eight main group roles: leader, implementer, idea generator, objective critic, organizer, supplier, group soul, controller (Belbin, R., 2013). It is worth noting that there are scientific studies where they propose to distinguish between 9 and 12 or even 18 team roles. However, most researchers, like practitioners, adhere to the classical approach.

Consequently, the team approach to management allows with much higher efficiency to realize the goals and objectives that face the enterprise.

This is achieved through synergy and a combination of interests and consolidation of the efforts of the leader and employees around the achievement of common goals that are completely shared by the staff and considered their own. The formation of an effective team is a long process that goes through a series of successive stages and involves the achievement of maturity by a team in which there is an effective distribution of group roles.

In the scientific literature, it is proposed to understand the effectiveness of the team's activities as the economic benefits obtained by comparing the resources for its creation and the results obtained from its activities.

The team of authors under the leadership of I.V. Chumachenko proposes to distinguish the following groups of indicators of team performance: production and economic indicators, indicators of market stability and indicators of psychological stability (Dotsenko, N., 2015) . The first group includes indicators reflecting the production and economic efficiency of the enterprise in comparison with competitors, which makes it possible to assess the economic benefits derived from the team's activities (for example, labor productivity, relative indicator of unit costs, product profitability, sales).

The second group includes indicators reflecting market competitive positions (for example, market share), which allows you to evaluate the effectiveness of the team from the angle of view of market results.

The third group includes indicators of psychological stability of the team, which reflect motivation, team spirit, relationships and quality of communication, creativity, management style, adaptability, cohesion, psycho-emotional stability of team members.

According to research by scientists led by R.Ablyazov, the effectiveness of the team is determined by the following groups of factors: team size, team motivation, personal motivation, leadership style, distribution of positions, distribution of roles, selection of candidates, determination of a leader, evaluation of candidates. Based on this, we offer our own methodological approach to assessing the effectiveness of team management, which will be based on key factors determining the effectiveness of the team.

In our opinion, to assess the effectiveness of team management at the initial stage, it is advisable to analyze the personnel and the effectiveness of the use of personnel of the enterprise, which will allow, firstly, to see the features of the composition and structure of personnel, and secondly, to evaluate the effectiveness of its work.

At the next stage of the analytical study, it is advisable to assess the organizational culture, which will determine the key norms and values that are broadcast in this team, to identify the tendency to implement team methods of work.

The next stage involves an analysis of the level of staff motivation, which allows to assess the individual and collective motives of the personnel of the enterprise, to assess the ability of employees to achieve goals.

The next stage of the analytical study involves the diagnosis of the stage of team building of the enterprise, which we propose to carry out on the basis of the stages of commanding proposed by B. Takman.

The next stage of analytical research involves the analysis and evaluation of existing formal and informal groups, their size, key characteristics.

The next stage of the assessment involves the implementation of functional-role diagnostics, which is advisable to carry out using the method of M. Belbin.

The next stage of the analytical study involves the diagnosis of the orientation of team members' behavior styles on team leadership using the leadership lattice of R. Blake and J. Blake. Moughton.

At the final stage of the analytical study of team management, we will assess the leadership potential and ability to team up the personnel of the enterprise. To this end, we will use the method of psychodiagnostic testing proposed by a group of scientists under the leadership of (Ablyazov R., 2008). Evaluation of the ability to team building is proposed to be carried out according to ten characteristics:

1. Organization, characterizing the ability of team members to clearly regulate activities, productive work, control and coordination.

2. Intelligence, which determines the ability to think rationally, cope with complex intellectual tasks, think systematically, critically, use analytical tools.

3. Corporateness of thinking, characterizing the focus on the overall result of the enterprise, dedication and level of employee involvement in relation to the enterprise.

4. Creativity determines the ability to atypical solutions to a problem, the ability to see and identify problems and an innovative approach to solving them. Ability to generate new ideas.

5. Ethics, characterizes the ability to get out of conflict situations without losing the main priorities, to act loyally, correctly without dependence on personal sympathies.

6. Perseverance, which determines the ability to achieve goals, make decisions independently and take responsibility for the overall result.

7. Health, characterizes the presence of a physical, mental and spiritual state that allows you to effectively cope with the tasks.

8. Ability to take risks, characterizes the ability to make risky decisions, to act regardless of changing circumstances, while maintaining prudence of thinking.

9. Sociability, determines the ability to maintain effective communication, establish contacts, the ability to listen and hear, maintain a conversation, be empathetic.

9. Sociability, determines the ability to maintain effective communication, establish contacts, the ability to listen and hear, maintain a conversation, be empathetic.

10. A sense of humor that determines the ability to understand humor, the ability to switch and perceive humor in your address.

To calculate the complex indicator of the ability to team building, we use the formula of the following form:

$$K_j = \sum_{i=1}^n m_i \times \gamma_i, (1.1)$$

where  $K_j$  is a complex indicator of the  $j$ -th candidate;

$m_i$  – coefficient of weight of the  $i$ -th characteristic;

$\gamma_i$  – numerical value of the  $i$ -th characteristic, determined as a result of psychodiagnostic testing;

$n$  – 10, the number of characteristics.

It will reveal the leadership potential and ability to team building in the management of personnel and form recommendations for improving the efficiency of the command management of the enterprise.

The approbation of the proposed methodology will be carried out at NVK Labora LLC, the mission is to provide educational institutions of Ukraine with modern high-quality educational equipment. The assortment of the company includes a wide range of educational tools for primary school, laboratory equipment, experiments and laboratory work in various disciplines.

The company has developed proposals for the complete acquisition of subject rooms of physics, chemistry, geography, history, biology, mathematics. According to the official website, the company's products fully comply with the concept of the New Ukrainian School and the requirements of the Order of the Ministry of Education and Science of 22.06.2016 No704. The company offers both products of its own production and well-known manufacturers of educational equipment, in particular, such as: EDX, Learning resources, Gigo. The company's products are sold in all regions of Ukraine. LLC "SPC "Labora" sells products both direct and not direct distribution channels, including through its own online store. The company is an active participant in the Prozorro public procurement system.

SPC Labora LLC is an enterprise that is at the stage of growth, it is relatively young, which every year increases its turnover, expands and wins an increasing market share.

Evaluation of the composition and structure of personnel of SPC "Labora" LLC will provide an opportunity to track changes and opportunities for implementing the principles of team management at the analyzed enterprise.

Table 4 shows data on the dynamics of the condition and structure of personnel of SPC Labora LLC.

Table 4

## Dynamics of the personnel structure of SPC "Labora" LLC

Indicator	2018	2020
Number of employees at the end of the year, persons	26	32
Structure, %	-	-
Men	59	68
Women	41	32
Qualification structure of personnel, %	-	-
Qualified	72	76
Unskilled	23	17
Unskilled	5	7
Educational structure of staff:	-	
complete higher education	55	53
incomplete higher education	24	27
secondary special education	9	11
secondary education	12	9
Age structure of staff, %		
18-27	42	30
28-50	49	65
51 +	9	5
Personnel structure by work experience, %	-	
1 y.	7	9
1-4 y.	12	15
5-9 y.	42	41
10-14 y.	34	32
15-19 y.	5	3
20-24 y.	0	0

The structure of the staff is dominated by men, whose share increases during the analyzed period to 68%; the company's staff is young, the vast majority is the staff aged 28-50; work experience is dominated by personnel with work experience of 5-9 years (specific gravity 41%), 10-14 years (specific gravity 32%); The qualification structure of the staff is dominated by highly qualified personnel. The company forms an organizational culture focused on achieving goals and ensuring effective teamwork.

Characteristics of motivational tools used at SPC Labora LLC are shown in Table 5. It allows you to assess the level of persuasion of staff.

Table 5

Characteristics of motivational tools used in the system of remuneration of  
personnel of LLC "SPC "Labora"

Position	Name	Type	Volume
Commercial Director	With an increase in annual sales volumes by 10%	Year	Bonus of 7% of the annual salary
	For the implementation of corporate projects	Project	Award 0.05% of the project cost
	Increase in the number of new customers by 5%	Monthly	Bonus 5% of monthly salary
Head of Sales Department	For the absence of negative customer reviews	Quarter	Up to 10% to the salary of an absent employee
	Not exceeding problem receivables above 5% of its total amount	Quarter	Bonus in the amount of 10% of the salary
	80% of managers complete 80% of the implementation plan	Quarter	Up to 12% of salary per quarter
Sales Manager (for working with existing clients)	For an increase in annual sales volumes by 10%	monthly	monthly bonus of 10% of the monthly salary
Marketer	With a 10% monthly conversion increase	monthly	Bonus 10% salary
	10% increase in the frequency of impressions in targeted ads	monthly	Bonus of 15% monthly salary
Head of production and design department	For the development and implementation of new products	Grocery	Bonus of 15% quarterly salary
Supply Manager	Expansion of the range by 10%	Quarterly	Up to 15 salaries per quarter

The annual growth of the average monthly income of an employee of SPC Labora LLC is in the range of 13-32%, while the level of remuneration at the enterprise is quite high. The motivation system is quite detailed, the range of tools of material motivation is widely used, their coordination with the key goals and objectives set for the enterprise and a specific functional unit is clearly traced. There is a clear focus on achieving high individual labor results. Among the shortcomings, it is worth paying attention to the weak focus on collective results.

Evaluation of the team building stage of SPC Labora LLC was carried out according to the stages of B. Takman. The company has been operating in the market for only four years, the team of employees is not formed, the number of personnel is

gradually growing, but the turnover rates are significant. Thus, the turnover rate in 2018 amounted to 30.8%, in 2019 – more than 24%. During this insignificant period, there was a renewal of personnel in key management positions (with the exception of the director of the enterprise), which made it possible to form today a fairly strong team of professionals who are result-oriented. Accordingly, today the team of SPC "Labora" LLC, as a team, is at the stage of formation. This stage is characterized by the fact that the groups and teams of SPC Labora LLC, both formal (within structural divisions) and informal (formed by common interests, values, beliefs and views) are at the stage of formation, are immature, functional roles have not yet been finally defined. That is why, for this stage at SPC Labora LLC, the role of leaders who clearly prioritize and take responsibility for making management decisions in all key areas is very important, even dominant. At this stage, microcode participants of SPC Labora LLC are trying to follow the leaders of microcode and maintain friendly relations and a favorable atmosphere in the team.

At SPC Labora LLC, management tries to introduce a team approach into management practice, as it understands the importance of group interaction and focus on teamwork and joint results. Such a task is of exceptional importance both for the owners of the enterprise and the management and the staff themselves. The management of SPC "Labora" LLC is of the opinion that group interaction, team approach make it possible to implement, firstly, a significant number of individual motives of employees, in particular, such as the need for belonging to a certain group, community, team, the need for recognition and respect), and, secondly, will contribute to the realization of the goals and objectives of the enterprise. At this stage of development of SPC Labora LLC, both formal and informal groups are formed. Not the enterprise at this stage is the formation of microcodes, including a combination of personnel from different hierarchical levels. Types of microcode of LLC "SPC "Labora" are shown in Fig. 2.

Formal groups at SPC Labora LLC are formed around a common goals and objectives that face individual functional areas of staff. Thus, within the framework of the highest level of management, a microgroup has been formed that solves strategic issues, forms the directions for the further development of the enterprise. Groups have been formed whose areas of responsibility are sales, development and supply, production activities, accounting and finance.



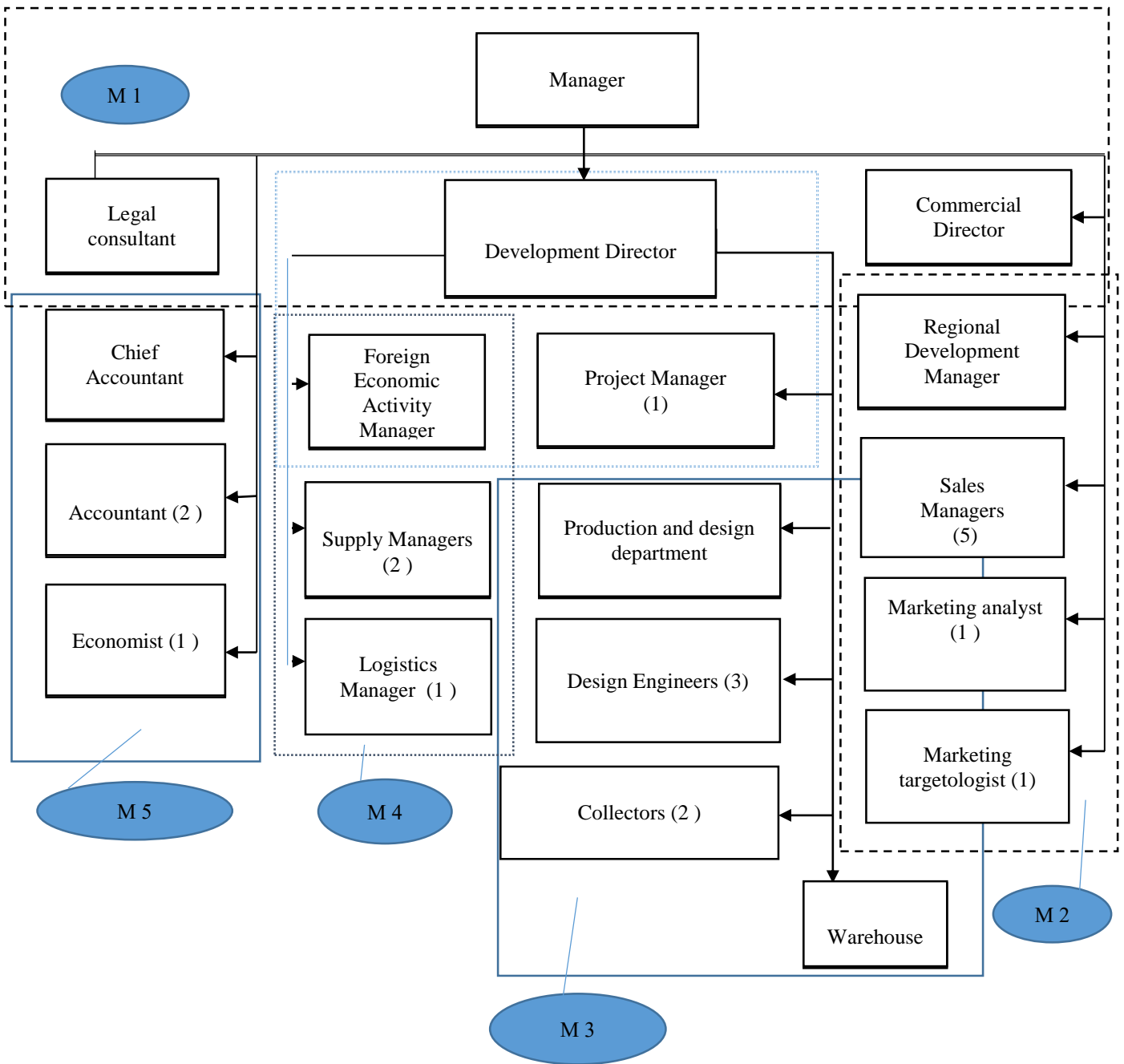


Fig. 2. Types of microgroups of SPC Labora LLC as of the end of 2020

The existence of informal groups is also clearly visible among the staff of SPC Labora LLC and managers try to monitor and influence their support, development and direction in the direction of harmonizing the interests of personnel and the enterprise.

SPC Labora LLC has formed several informal groups consisting of employees of the enterprise. The peculiarities of formal and informal groups of employees of SPC Labora LLC are presented in the form of Table 6.

Table 6

Features of formal and informal groups of employees of SPC Labora LLC as of the end of 2020

Characteristics of groups of workers	Types of formal groups			Types of informal groups	
	Team	Functional Group	Production Group	Interest Groups	Friendly Groups
Composition	Senior management (director, development director, commercial director)	Sales department	Production and design department	Fans of table tennis Football fans	Fans of table tennis Football fans
Number	3	7	6	7	8
Characteristics of relationships	Direct subordination	Direct dependence	Narrow specialization of work	Sports interest, recreation	Friendly, based on common hobbies
Motives of occurrence	Organization of management, formation of common prospects, response to environmental challenges	Organization of effective sales activities, internet sales	Production of own products	Placement in the office of a tennis table has formed an interest in the game for the purpose of recreation and switching	Joint field trips to football, organization of viewing sports competitions
Efficiency measures	Establishing the optimal size of the groups, which will best meet its tasks; focus on maximum cohesion and engagement; coordination of the goals of microgroups with the goals and objectives of the TOD "Scientific and Production Complex "Labora"; effective communication; stimulating a high level of staff involvement and encouraging continuous individual and personal development				

Functional-role diagnostics according to the Belbin method allows you to identify a tendency to perform certain functions in a team and the distribution of key roles. Diagnostics of the role orientation was carried out in two functional divisions of SPC "Labora" LLC, which are formal groups:

- sales department consisting of the head of the department and 5 sales managers;
- production and design department, which includes the head of the department and 3 design engineers and 2 completers.

For the purpose of functional-role diagnostics, a survey was conducted in these units, the results of which revealed the dominant functional-role orientation of the employee in the group. Diagnostic results are shown in Table 7.

Table 7

Results of functional-role diagnostics of managers of SPC "Labora" LLC

Position	Dominant role in the group	Secondary role in the group
Structural unit: sales department		
Head of Sales Department	Idea generator	organizer
Sales Manager 1	Implementer	Controller
Sales Manager 2	leader	resource provider
Sales Manager 3	Objective critic	Controller
Sales Manager 4	The soul of the company	organizer
Sales Manager 5	Implementer	Objective critic
Structural unit: production and design department		
Head of production and design department	leader	Controller
Design Engineer 1	Implementer	Objective critic
Design Engineer 2	Idea generator	Implementer
Design Engineer 3	resource provider	leader
Picker 1	The soul of the company	organizer
Picker 2	Controller	resource provider

Within the microgroup – salespeople, we can draw the following conclusions regarding the distribution of roles:

1. The head of the sales department is not its leader, its main role is to generate ideas.

2. The functions of the leader are performed by one of the sales managers (Kravtsov V.S. - sales manager 2), whose main functions within the functional competence are working with new customers. A positive sign is that in the same person, the role of the leader is combined with the supplier, which ensures a constant desire for novelty, maximum coverage of information about the market, customers, competitors, new opportunities, due to this combination of roles, the sales department becomes a source of relevant information on solving problems both in the field of sales and other areas of the enterprise.

3. In the sales department, two managers have the dominant role of the implementer, which is both a positive factor and a disadvantage. Since, the implementer is a person who is clearly focused on the formation and implementation of a set of actions for the implementation of a specific management task, is highly result-oriented, has systemic thinking. However, implementers, like effective people, are quite impulsive, which can be a source of potential conflict between them. Since at

this stage the team of SPC Labora LLC is at the stage of formation, at this stage conflict situations do not arise, but as the group develops, they are possible.

According to the results of diagnostics of the production and design department of SPC Labora LLC, the conclusions are as follows:

1. The distribution of roles in the microgroup – production workers, is quite favorable, since the dominant roles of its participants are the key roles necessary for the effective functioning of the group: leader, idea generator, resource provider, company soul and controller. In fact, all roles are fully represented in the group.

2. Positive is the presence of leadership qualities in the head of the structural unit, and his role is complemented by the functions of the controller, which allows you to focus on the effectiveness of the implementation of tasks, while inspiring the team to achieve common goals.

At the next stage of the evaluation of the team management of SPC "Labora" LLC, a diagnosis of the management style of the management team of the enterprise was carried out, in order to identify their focus on the result (productivity) or human relations. To this end, the analytical tool of leadership lattice proposed by R. Blake and J. Blake was used. Moughton, The survey was conducted for eight managers of SPC Labora LLC, for this purpose a questionnaire was used. The results of building a leadership lattice based on the survey are presented in Figure 3.

Staff orientation	1	1.9								9.9
	2									
	3		1			5			1	
	4									
	5					5.5				
	6									
	7								1	
	8									
	9	1.1								1.9
		1	2	3	4	5	6	7	8	9
Performance orientation										

Fig. 3. Results of diagnostics of the management team of SPC "Labora" LLC based on the leadership lattice of R. Blake – J. Mouton

According to the results of testing behind the leadership bar, among the leaders of SPC Labora LLC, managers with the following management styles are presented: management in the style of a country club, the style is focused on the mode of subordination to the head, the style is focused on collective management,

organizational management style. Most of the heads of SPC Labora LLC have an organizational management style. This is a style that involves achieving a balance between the goals of the organization (focus on the implementation of tasks) and a good moral climate in the team (due to attention and orientation to the needs and interests of staff). This is a management style that does not provide maximum efficiency of activity, which is negative from the point of view of achieving the goals of SPC Labora LLC, but at the same time, it is focused on finding the optimal balance of the interests of personnel and the goals of the enterprise.

The head of the production and design department has a management style called collective management. This is the most productive management style, which equally focuses on achieving high performance and harmony of relationships, meeting the needs and interests of the personnel of the enterprise. This type of leader is focused on innovation, quite creative, at the same time friendly, along with high organizational skills and focused on achieving high productivity. It should be noted that according to functional-role diagnostics, it is the head of the production and design department who has the role of a leader and the high potential of leadership qualities has been identified.

One of the middle managers of SPC Labora LLC (project manager) has a management style called management in the style of a country club, or democratic. His key positions are to create a very favorable and friendly atmosphere, maximum focus on people.

The chief accountant of SPC Labora LLC has a management style focused on solving production problems, with a minimum level of attention to staff. This management style is quite tough.

At the final stage of diagnostics of the level of team management of SPC Labora LLC, an assessment of the ability to teamwork and leadership of the management team of SPC Labora LLC was carried out. The assessment will be carried out according to the methodology of the team of authors under the leadership of R.A. Ablyazov [2, pp. 52-82]. Evaluation of the partial characteristics of the management rock of SPC "Labora" LLC was carried out on the basis of psychodiagnostic tests. The results of the calculation are shown in Table 8.

Table 8

Results of testing leadership qualities and teamwork abilities of managers of SPC  
Labora LLC

Position	Age	Gender	Organization	Intelligence	Corporateness	Creativity	Perseverance	Наполегливість	Health	Ability to Risk	Sociability	Sense of Humor	Complex indicator
Director	41	w	3,5	4,3	4,01	3,9	3,7	4,02	3,9	3,1	4,2	3,8	7,2
Development Director	37	m	3,75	4,0	3,9	3,7	3,5	4,0	4,0	4,1	3,5	3,5	7,0
Commercial Director	32	w	3,9	3,9	3,8	3,9	3,8	4,0	4,0	3,9	3,8	4,0	7,3
Head of Sales	35	w	3,8	3,9	4,1	4,2	3,7	3,4	4,0	3,8	3,6	3,2	7,2
Head of Supply Department	29	m	3,9	3,65	3,8	3,9	3,8	4,0	4,0	3,5	3,8	3,9	7,2
project manager	38	m	3,75	3,6	3,5	2,9	3,7	3,4	3,1	3,4	4,0	3,2	7,1
FEA manager	25	m	4,2	3,8	3,7	3,9	3,3	3,5	4,1	3,8	3,8	3,6	6,8
Head of production and design department	42	m	3,9	3,85	3,75	3,65	4,1	3,9	3,7	3,9	3,9	3,9	7,5

Based on the results of diagnostics of the ability to teamwork and leadership qualities of the management team of SPC Labora LLC, we can conclude that, in general, the management apparatus of SPC Labora LLC has a fairly high potential for leadership qualities and the ability to work as a team. The complex cohesion index ranges from 6.8 to 7.5. Such values indicate a fairly high level of cohesion and ability to work together with the management staff of SPC Labora LLC.

In general, an analytical study of the team management of SPC Labora LLC showed that at this stage, the command management of the enterprise is at the stage of formation, microgroups are only being formed, roles are distributed and leaders are formed. The management team of SPC "Labora" LLC has a very significant potential for leadership qualities and a high ability to team building. Accordingly, the enterprises have all the prerequisites for the introduction of effective tools and mechanisms of team management.

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### 3.6. TRANSFORMATION OF APPROACHES IN THE MANAGEMENT OF ORGANIZATIONS UNDER THE CONDITIONS OF MARTIAL LAW

#### **Introduction**

Doing business in the difficult conditions of martial law requires the management of organizations to adjust and change existing approaches to management and organize uninterrupted and profitable activities. The success and competitiveness of companies on the market and their ability to develop largely depend on the quality of management and its flexibility in these difficult times.

The consequences of the Russian-Ukrainian war for business were a violation of the stability of the socio-economic system of the country, a decrease in the efficiency of economic processes, and a limitation of the competitiveness of domestic industrial and economic complexes. The war not only slows down the development of Ukraine, but also leads to the socio-economic regression of some regions (Kharkiv, Donetsk, Kyiv, Zaporizhzhya, Mykolaiv, Chernihiv, Sumy, Kherson and Luhansk regions), where active hostilities are taking place. Therefore, as of today the restoration of the potential of business structures by way of changing the principles of management is a key factor in the restoration of socio-economic development, which will contribute to the economic stability of the regions and certain territories of the state.

The implementation of martial law in Ukraine is accompanied by the complexity of doing business, the frequent need to change activities and re-specialize production, which leads to a constant increase in the pace of change and complicates the management of organizations. In this regard, certain transformations of the management system and its principles should become a necessary component of the development of Ukrainian enterprises.

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## Material and methods

In management theory, an organization is considered a group of people who enter into certain socio-economic and organizational-economic relations. The purpose of any organization is to achieve success in its goals. At the same time, the components of the success of the organization's activities are its survival (the possibility of existing

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h Such foreign scientists as H. Fayol, G. Church, M. Weber, and L. Urwik made a significant contribution to the study of the functioning of organizations, the justification of the main approaches in their management and strategies of organization management. In their works, they described in detail the main principles of organization management, on which the functioning of the organization and the entrepreneurial activities are based. Among domestic scientists in this field, the works of O.P. Vasylenko, I.M. Pysarevskyi, V.M. Hrynyova, G.V. Savytska, and A.V. Bardas should be noted. etc. [Bardas A.V., Boichenko M.V. and Dudnyk A.V., 2012; Vasylenko O.P., Kovalenko G.O., Polishuk O.O., 2010]

The issue of high-quality and effective management and marketing of domestic enterprises under martial law is covered in the works of I.F. Kolomiets [Kolomiets, I. F., 2007, pp. 16-26]. Research on new approaches to the management of enterprises in such difficult conditions is of particular importance, since it allows them to fully realize their economic potential.

## o Results and discussion

n Since the beginning of Russia's full-scale invasion of Ukraine, domestic business has suffered significant losses and destruction. According to a survey conducted by the Ministry of Digital Transformation of Ukraine, since the beginning of the war, 47% of enterprises have been stopped or almost stopped, and the total direct losses of small and medium-sized businesses are estimated at US dollars 85 billion [4]. Along with the predicted fall of the gross domestic product of Ukraine this year by at least 30-35%, this is a significant challenge for the business activity of citizens. As a result, these problems will become the main reason for the growth of unemployment, the decrease in the income of employees and the payment of taxes to the state and local budgets.

s Only 6% of enterprises adapted relatively well to the conditions and were able to build a strategy and business plans in the new realities due to reduced demand in the domestic market, the instability of the market situation, as well as the complexity of any business planning.

e However, Ukrainian business is gradually recovering. This is evidenced by the results of studies conducted monthly within the framework of the European Business

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Association [5]. According to the results of the last survey, about 47% of enterprises are already working in their full capacity, another 50% - with certain restrictions or partially. Of these, 37% have limited their geographical presence, 17% work online, and 16% were forced to close part of their offices.

Obviously, the current conditions are more difficult for micro and small businesses now than for large entities, because their margin of safety is much less. Moreover, entrepreneurs' assessment of their own financial stability under war conditions naturally worsens. But even in such difficult conditions, both large and small businesses try to support their own staff as much as possible. In particular, 47% of enterprises continue to supply products and support their employees who joined the armed forces. Another 44% support financially, 25% - with services, 18% - with medicines or means of protection. 67% of the managers of the surveyed business entities are ready to participate in the reconstruction of the country after the end of the war.

Studies of the business sphere in Ukraine for the last period showed that the business activity index UBI (Ukrainian Business Index) is 25.16 (out of 100 possible). The index has slightly increased since June 2022, but remains at a low level, which indicates business uncertainty in the rapid improvement of the economic situation [6]. The total direct losses of small and medium-sized businesses during the five months of the war are estimated at USD 87 billion. However, the survey showed that 41.6% of businesses plan to further develop and compete through unique business relationships, and partnerships; 38.9% - through technological innovations; and 20.9% of business organizations plan to continue to develop using business innovations.

In view of the mentioned circumstances, enterprises should intensify their own activities regarding, firstly, the preservation of their functioning and presence on the market, and secondly, the activation of socially responsible programs. Moreover, there is a need to implement measures in these two mentioned areas at the same time.

Such positive management decisions to continue the development of business in Ukraine give grounds to look for new approaches in the management of organizations, taking into account the current real conditions.

The business of Ukraine is being restructured in the conditions of war, but in order to resist and begin to develop again, it is necessary to manage business processes effectively and quickly respond to the challenges and circumstances of the present. That is why it is so important nowadays for managers and top management of enterprises to have modern management tools that will allow to ensure the development of business, even when there is a war in the country.

As for management tools, an approach where they are built in accordance with the basic functions of management may be appropriate [Biletska I. & Romanchukevych M., 2022]:

- adjusting the activities of analytical services towards more intensive forecasting of the development of the situation in the domestic market and planning of indicators of the financial and economic condition taking into account risks and threats, various scenarios of the development of the situation (analysis function);
  - planning alternatives for preservation and diversification of business and assets in war conditions; distribution of the budget by areas:
    - business process support;
    - investments in diversification;
    - measures of social responsibility (planning function);
  - changes in the organizational structure of management with the definition of specialists responsible for the formation and control of the implementation of socially responsible behavior of the enterprise in war conditions (function of the organization);
    - development of a system of incentives of a material and non-material nature for rationalization proposals in terms of efficiency and economic security of business, as well as the implementation of socially responsible behavior, in particular in relation to IDPs, socially vulnerable categories of citizens (motivation function);
    - strengthening control over business processes, functioning of the supply system, logistics, sales of products (services), functioning of business infrastructure, development of the market and consumer demand (control function);

As for the analysis function we should state that activities in any field must be properly planned, and before that, a thorough and comprehensive analysis of the situation must have been carried out. A certain change of emphasis in the activities of the analytical services of enterprises, in particular regarding forecasting trends in the development of the situation on the markets in accordance with the course of the war and its consequences, as well as tracking the impact of relevant changes on the parameters of the financial and economic condition and business efficiency will contribute to this.

The next step is business planning. In the difficult conditions of martial law, the entire system of business planning and development should be divided into three separate areas: regarding the preservation of the stability of existing business processes; in terms of finding new promising market niches (businesses); and regarding social responsibility.

It is also necessary to correct the organizational structure of business management in such a way as to introduce a structure responsible for the company's policy in the field of social responsibility into the staff (re-profiling an existing unit or an individual employee). Staff motivation programs will become appropriate for full-fledged activities in the field of security and social development, and means of controlling the functioning of a business in conditions of political and economic instability of a critically high level - to ensure its effectiveness.

One of the manifestations of the complication of management today has become the migration of business, which has reached significant scales during the period of war. The internal and external migration of businesses to the Western regions of Ukraine and from the temporarily occupied regions and front-line territories to the EU countries under martial law poses some threats to [Tarasovskyi Yu., 2022]:

- *the country's economy:*

- decrease in business activity, drop in state GDP, limitation or absence of tax revenues to local budgets (the total direct losses of small and medium-sized businesses in Ukraine in one month of the war amounted to USD 80 billion, in particular, in the first quarter of 2022, GDP fell by 16%;

- aggravation of the problems of inefficient structure of enterprises with high resource and energy intensity of production, excessive development of primary industries, low level of innovation, alienation of the financial sector from the real economy, inefficient functioning of industries that ensure social development;

- lack of innovative and technological development of industrial enterprises, deterioration of scientific and technical potential of industry, reduction of the share of high-tech industries due to large-scale capital and labor force migration;

- deepening disparities between consumer spending and economic investments, deepening structural imbalances in the development of the domestic consumer market;

- significant losses of financial and investment, intellectual and human resources, resource support for the development of Ukraine, the shortfall of export potential, the transformation of the geography of export processes of industrial enterprises;

- *regional economies:*

- increased financial burden on local budgets in connection with additional financing of support and development programs for businesses relocated to the region;

- the formation of a significant deficit of resource support for the economic development of regions, asynchronous territorial development due to the irrational distribution of relocated businesses;

- replacement of high-tech production with low-tech one, increase in the cost of production due to the lack of regional cooperation programs between industry and scientific and technical institutions, low efficiency of technology parks and business incubators;

- deepening structural and sectoral imbalances in regional labor markets due to rising unemployment among the local population against the background of state support for internally displaced people and local enterprises in designing a priority for stimulating and creating jobs for internally displaced persons;

- deepening regional budgetary imbalances (tension in the budgetary and tax spheres) due to the high probability of low participation of relocated businesses in value chains and the risk of reverse relocation of businesses;

- *domestic consumer market:*

- a long-term increase in the general level of prices for consumer goods, including food, raw materials, materials and goods of suppliers, a decrease in purchasing power, which will lead to structural deformations of the domestic consumer market;

- decrease in the level of diversification of the product supply structure, which does not meet the growing demand and consumer requirements for the quality and range of products;

- *business entities:*

- loss of competitive advantages due to the lack of an adaptive marketing strategy, limited information about the situation in the local market and temporary innovation and market lag compared to local competitors;

- increased risk of bankruptcy, lack of high turnover of capital, problems with recruitment.

Another problem is also important. Domestic enterprises that have not yet recovered from the problems caused by lockdowns due to the coronavirus COVID-19 are forced to overcome the difficulties associated with the outbreak of a full-scale Russian-Ukrainian war once again. Many enterprises cannot withstand such difficulties and stop their activities. However, there are enterprises that managed not only survive, but transformed their activities, occupied new niches in the market and did not lose their competitiveness.

The realities of the current situation in Ukraine require the management of organizations and enterprises to test new approaches to the management and organization of remote work within a limited time frame.

In the conditions of martial law in the market, the need for the use of *remote management* and the development of flexible forms of work organization is growing. Thus, remote management becomes a special type of management, which is difficult to do without in today's dynamically changing conditions. Organizations and enterprises whose leaders master the art of remote management have significant competitive advantages.

With the outbreak of the COVID-19 coronavirus disease pandemic, and later the war, the use of tools for remote work (Zoom, Microsoft Teams, Cisco Webex Meeting, Google Meet, etc.), document collaboration tools became a necessary means of continuing to conduct business and establish business communications (Microsoft 365, Google Docs, etc.) and specialized business process management software (CRM, Bitrix). Their use made it possible to establish a much more effective communication process between members of the organization, management and business partners, as well as to significantly facilitate and speed up the performance of many work tasks.

In addition to the conditions described above, which have made doing business acutely difficult today, it should be noted that domestic enterprises are constantly operating in conditions of global competition, limited resources, significant changes in the structure of human resources (increasing demand for intellectual workers), increasing the role of the use of new information technologies in management and in the conditions of creation and use of new management technologies by modern global companies.

In the conditions of war, *the principles of management related to the organization of personnel's work require priority transformation.* Their transformation lies in the fact that in war conditions, only the formal organization of personnel work (planning, selection, selection, placement) is not enough. A combination of socio-psychological and moral factors is necessary, that is, democratic approaches to management, respect for a person, taking into account his individual and typological characteristics. Special attention should be paid to the analysis of motivational attitudes, the ability to form and direct them in accordance with the tasks facing the enterprise, changing their form and direction. This should also include difficulties in the interaction of managers, trade unions and the employment service, ensuring the safety of personnel, developing the principles of the latest approaches to the organization of values.

That is, the management of human resources in the conditions of hostilities should consist in ensuring the social protection of employees and creating appropriate conditions for the effective use and development of the personnel potential of each enterprise. Under such conditions, it is necessary to provide for the solution of a number of tasks, in particular:

- reduction of social and psychological tension in the team, anti-stress training of personnel to overcome the crisis period;
- conducting an organizational and personnel audit (assessment of the available personnel potential);
- restructuring of the existing personnel potential of the enterprise: optimization of the number of personnel, dismissal and (or) transfer of the excess number of employees of the enterprise;
- preserving the core of the enterprise's personnel potential (employees of the highest value whose knowledge and skills are the enterprise's intellectual strategic resource), its survival and restoration of viability;
- provision of social protection and employment of dismissed employees of the enterprise;
- choice of personnel management method (determining the type of behavior of managers in a difficult situation);
- HR-marketing;

- search and attraction of new personnel whose quantitative and qualitative characteristics meet the requirements of the enterprise's anti-crisis program;
- formation of a team of adaptive managers capable of developing and implementing an anti-crisis program for the enterprise and developing new ways of development considering existing threats;
- organization of training and professional development of the company's personnel;
- mobilization of personnel potential to solve the tasks of implementing the anti-crisis program of the enterprise;
- improvement of the system of motivation and stimulation of personnel in accordance with the tasks and the limited crisis period.

In the conditions of martial law, the preservation of the organization's collective and the search for new business relationships is very important for conducting business activities [Badah E., 2022].

In connection with the fact that many enterprises were forced to change their direction of activity or location due to active hostilities in the territory of their placement, or to significantly reduce personnel, the transformation of approaches and methods of working with personnel is relevant. Under these conditions, there is a need to make forced decisions and actions, in particular:

- to look for qualified employees who would meet the needs of the enterprise in the conditions of the new location of the enterprise;
- transfer staff to a shortened work schedule (with a corresponding reduction in wages);
- send part (or all) of the personnel on vacation or transfer to part-time work;
- retain the most qualified employees (skilled workers);
- attract highly qualified personnel dismissed due to layoffs from other companies (competitors);
- maintain the company's positive reputation on the labor market.

Under these conditions, it is advisable to apply new and non-traditional approaches for domestic enterprises, in particular: outsourcing, organization of digital jobs, video conferences and various online platforms, and freelancing.

Business partnership based on outsourcing relations is gaining more and more popularity in the conditions of martial law, as it allows to minimize the costs of human resources specifically in the conditions of war. It is also relevant to engage specialists the need for which is not permanent (one-time services) on leasing terms. It can be the services of an accountant, auditor or legal adviser.

Bearing in mind the constant changes in the external and internal environment of conducting business, according to many scientists, a necessary factor for the success of the organization, is the use of "anticipatory management" approaches, which allow

predicting changes in the market, adjusting the strategies of the organization in accordance with national interests and priorities of socio-economic development [Markina I.A., 2015]. The essence of these approaches is based on such areas as "intellectualization, informatization, the dynamics of technological changes and other challenges in management" [Zaharchyn G.M. & Sklaruk T.V., 2018].

M. Woodcock and D. Francis identified 11 factors affecting management in business, and formulated the main skills and abilities that a manager must develop to achieve high managerial performance (table) [Vudkok M. & Frensis D., 1991, p. 18-20].

The table forms and describes the main skills that are most necessary for a top manager in the conditions of martial law. In addition, a good enterprise manager must possess a number of specific qualities and skills, described below.

*1) Clearly define goals*

According to the Global Leadership Forecast 2021 research, one of the main tasks of a leader is *to define clearly the goal the company is heading towards*. In order for the employees to feel confident about the future of the company and themselves, they need to understand both the strategic and short-term goals of the business. It is especially important in the conditions of martial law when understanding where and for what purpose the company is going is the basis of all work.

*2) Think critically*

This skill helps to analyze the situation in a timely and effective manner. A manager who owns a business must always *be ready to evacuate, relocate or make a quick decision* that will determine the existence of his company.

Fact-checking is also a critical skill for a top manager, because most employees listen to his position, statements and public posts.

*3) Follow "first help yourself" rule*

War is a constant source of stress and anxiety. Sometimes it may seem to a manager that he plays two roles, those of a manager and a psychologist. But in this situation, a good company manager should remember the recommendations for behavior during air travel: first you need to put on an oxygen mask for yourself, and then for the child. The same is true of business management in wartime; *first the manager must help himself, and then his team*.

As in any difficult time, during war a leader must be consistent, balanced and ready to make difficult decisions. The main task is to keep the team together and, if possible, help everyone. The way to do it is a real art that cannot be framed.

Table

Factors influencing the managerial activity of managers in business



Factors of influence	Skills and abilities for effective management
Stress, pressure and uncertainty require the manager to develop the ability to control himself and his time effectively	The ability to govern oneself
The erosion of traditional values and the disruption of personal beliefs and values require the ability of the manager to clarify his personal values	Formed personal values
The existence of a wide range of choice requires managers to clearly define both the goals of the performed work and their own goals	Clear personal goals
Organizations are not able to provide all the opportunities for training that a modern manager needs, therefore, every manager must constantly support his own growth and development	Emphasis on constant personal growth
Problems grow and become more complex, and the means of solving them become more and more limited, which requires the ability of the manager to solve problems quickly and effectively	Problem solving skills
The constant struggle for markets, energy resources and profitability makes it necessary to come up with new ideas and constantly adapt, which requires the manager to be resourceful and able to respond flexibly to changing situations	Resourcefulness and ability to innovate
Traditional hierarchical relationships are becoming more complex, requiring the manager to use the skills to influence others without the use of direct orders	High ability to influence others
Many traditional schools and methods of management have exhausted their capabilities and do not meet the challenges of today and the future, and this requires managers to learn new, modern management techniques and approaches	Knowledge of modern management approaches
Large costs and difficulties are associated with the use of hired workers today, therefore, the manager is expected to use human resources more skillfully	Ability to manage
Scaling up changes requires the acquisition of new skills, the development of new approaches and the struggle against the possibility of one's own "obsolescence", and the ability to help others quickly learn new methods and acquire practical skills is necessary for this	Ability to train and develop subordinates
Complex problems increasingly require the combined efforts of several people who jointly implement solutions, so a manager must be able to create and improve groups (teams) quickly able to become inventive and effective	Ability to form and develop effective work groups

#### *4) Take responsibility and enlist the support of the team*

*The duty of a leader during martial law is to be able to take responsibility.* Top managers are a key link in the company. They determine the general direction of the company activity, formulate the vision, develop plans and strategies, and allocate resources to achieve the company's goals. It is also necessary to enlist the support of the team.

#### *5) Prevent employees burnout*

Those companies that have an effective integration of work, personal life and opportunities for growth are more likely to keep talented employees. Companies can use different strategies for this. For example, LinkedIn worldwide provides employees with an additional paid week off as an opportunity to unplug and recharge. The Wanderlust Group has gone one step further by introducing a four-day work week to reduce burnout as a universal recruiting tool.

During the war, the usual work-life balance turned into a work-war balance.

Therefore, *you need to consider when employees need to go down to the bomb shelter during an air raid or join volunteering*, and when to stop. Sometimes it is extremely important for an experienced head of an organization to tell an employee "Breathe, take a day off, go on vacation." Not all responsible people understand in time when their resource is exhausted.

#### *6) Be flexible*

*Flexibility and self-confidence* will be of great help to a manager when conducting business in wartime conditions. Flexibility will help to adjust to the situation, quickly adapt plans to current conditions and change priorities, and confidence will help to implement what was planned and give the team confidence in the future.

In particular, food company MacPaw even created an Emergency Concierge Service to flexibly respond to wartime challenges. This service helped solve urgent requests of people with evacuation, finding housing for the family after moving, etc. in the team. Every day, MacPaw coaches organize group meetings for psychological support, as well as conduct individual sessions for company specialists and their relatives.

And the IT company Sigma Software at the beginning of the war provided its employees with greater freedom in making decisions urgently and without multi-level coordination, including in matters of team relocation.

#### *7) Develop and improve emotional intelligence*

Managers who are high in emotional intelligence and empathy are more likely to establish a high level of trust with their employees, build a culture of transparency in the company, and ask questions to better understand the situation.

#### *8) Change quickly, plan short-term*

One should be able to react to events with lightning speed, as well as *accept the fact that long-term planning has temporarily faded into oblivion*, because circumstances are changing too drastically both for the country and for business in Ukraine.

A top manager during a war is a captain who must successfully lead his team to the harbor, and not lead them into a storm. Not only the future of the company but also

the economic stability of the state depends on his emotional stability, flexibility and ability to quickly adapt to changes.

Today, Ukrainian business leaders have a unique chance to build an effective, modern, flexible management culture that will withstand war and be successful in peacetime, as well as make it possible to preserve and strengthen the team, which will make the company even stronger and more competitive both domestically and in the international arena. Therefore, the key skills of a wartime leaders are the ability to set goals, think critically, be ready to adapt to new conditions, protect their own mental health and support employees.

Management of enterprise activities includes the following components:

- tasks and principles of managerial work;
- hierarchical division of management functions in accordance with the peculiarities of enterprise structuring;
- methodological substantiation of managerial activity (economic and legal methods);
- information and analytical support for enterprise management.

Management principles play an important role in effective business management. The main principles of enterprise management include:

- principle of division of labor;
- the principle of observing labor discipline;
- the principle of having powers and allocating responsibility;
- the principle of employee motivation;
- the principle of justice;
- the principle of confidence in the regular production process;
- the principle of maintaining the hierarchy of managerial relations;
- the principle of encouraging initiative.

Compliance with these principles is a very important feature of the process of effective enterprise management.

The following modern approaches to enterprise management are distinguished: situational, comprehensive, integration, functional, dynamic, procedural, quantitative, normative, program-targeted, marketing, systemic (fig.) [14].

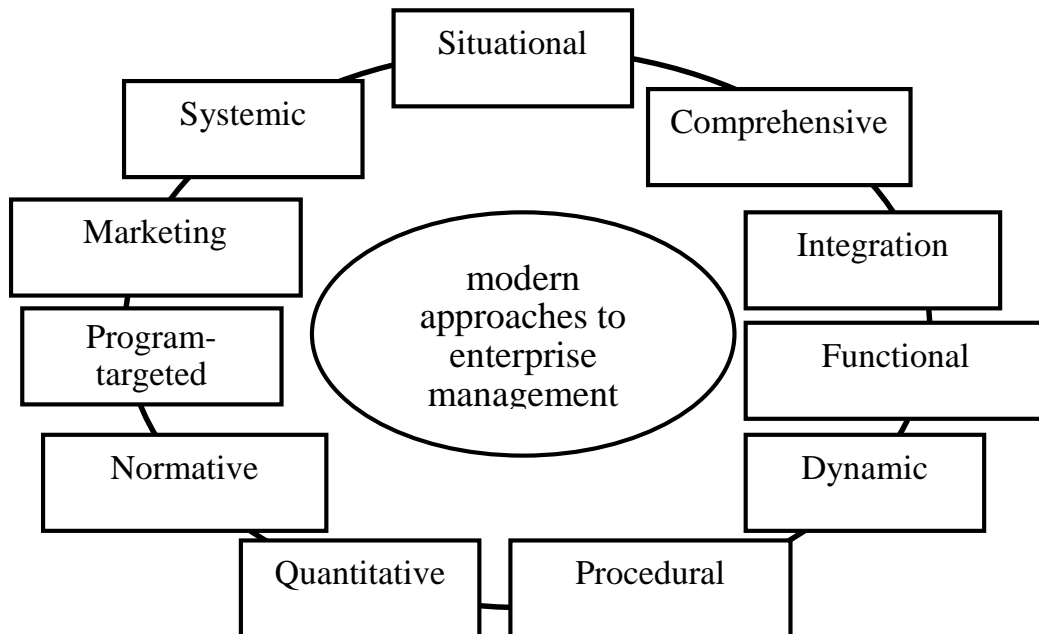


Fig. Modern approaches to enterprise management

Enterprise activity (operations) management of the enterprise includes the following components:

- tasks and principles of managerial work;
- hierarchical division of management functions in accordance with the peculiarities of enterprise structuring;
- methodological substantiation of managerial activity (economic and legal methods);
- information and analytical support for enterprise management.

Management principles play an important role in effective business management. The principles of enterprise management are proposed to include the following:

- principle of division of labor;
- the principle of observing labor discipline;
- the principle of having powers and allocating responsibility;
- the principle of employee motivation;
- the principle of justice;
- the principle of confidence in the regular production process;
- the principle of maintaining the hierarchy of managerial relations;
- the principle of encouraging initiative.

Following the principles is a very important feature of the process of effective management of the enterprise.

N.S. Prokopenko, A.H. Shlebat, V.R. Tovmasian suggest using certain tools in the process of managing the enterprise. They can be represented with means by which you can achieve positive results of the enterprise's activity, that is, by means of which you can improve relations with entities cooperating with the business entity (use of prices (regulated or fixed), taxes, sanctions, discounts, controlling), or techniques, such as income of employees (salary level, social package), material benefits, bonuses,

incentive measures through the provision of certain rewards, fines, provision of training and retraining of personnel, certification, payment forms, etc. [Prokopenko N.S., Shlebat A.H. & Tovmasian V.R., 2014].

Given the fact that the enterprise is a complex production system based on such components as fixed assets, material, financial and labor resources, the task of effective management is the use of corporate resources with maximum return, i.e. economic efficiency.

The level of efficiency of enterprise management directly depends on the coordinated work of its top management. Its task is to coordinate the activities of all employees of the enterprise who are at the lower levels of the management hierarchy. For the continuous implementation of economic activity, any enterprise must have an optimal organizational structure, which is a form of management of the organization that determines the composition, communications and rules for the interaction of all its elements. The following types of functional relationships or organizational forms of enterprise management are used in the process of such managerial interaction:

- linear (interrelationship of different levels of management);
- functional (the relationship of different levels of management without manifestation of subordination);
- cross-functional (occurring at the same management level).

Organizational structures of modern enterprises can be divided into two groups:

- hierarchical structures (with clear subordinate relationships);
- adaptive structures (flexible structures capable of rapid changes and transformations).

The main difference between the two types given is the observance of the clarity and strictness of the hierarchy. The first type is characterized by an established, unbreakable hierarchy and formalization of management activities. The structure of the second one is more flexible.

In general, the process of managing the activities of an enterprise is implemented by top, middle and, in some cases, lower managers. In view of this, the following levels of enterprise management are distinguished:

- technical (lower) level (it ensures the interaction of top management with direct executors of production processes at the enterprise);
- managerial (middle) level (this is an intermediate level between the lower and higher, at which managers of this link provide control over the activities of individual departments, i.e. manage the work and control the decisions of technical level managers);
- institutional (higher) level (similar to the administration of the enterprise, the managers of this link are responsible for the implementation of the strategic management of the enterprise, including financial issues, work on domestic and foreign

markets, improvement of all activities of the organization. No more than 7% of the total number of employees of the enterprise works at this level) [14].

According to Piletska S.T. and Korytko T.Yu., "The activity of enterprises in modern economic conditions is characterized by the need for the effective use of all available resources, which makes it possible to achieve progressive development and improve its performance indicators" [Piletska S.T. & Korytko T.Yu., 2018].

The market economy creates such conditions for the activities of enterprises, institutions, organizations, in which it becomes necessary to make every possible effort to maximize profits in order to further develop.

Increasing the efficiency of enterprise management is an important theoretical and applied task today. As noted by Kolesnyk V.M. and Voienna K.I., "The complexity and versatility of management effectiveness are explained by the complexity of the management category itself. The issues of management efficiency, on the one hand, are an integral aspect of enterprise management, and on the other hand, they do not have unambiguous solutions" [Kolesnyk V.M. & Voienna K.I., 2013].

The analysis of the results of financial activity is the only criteria that will allow us to assess the effectiveness of management. Therefore, increasing the level of enterprise management efficiency can be achieved due to the introduction of improved forms of managerial activity, and innovative approaches to the implementation of management functions [14].

Features of enterprise management in modern conditions require the personnel of business entities to improve their managerial skills constantly. According to Reznik N.P. and Opalat D.V., "When implementing managerial innovations, especially such cardinal ones as strategic management, associated with the reorientation of all management thinking from internal production to external problems, a lot of work is needed to overcome resistance to change, to form a new "organizational culture". Knowledge in the field of management, professional education, close attention to management, special search and mastering of innovations in the field of management is of great importance for increasing the efficiency of the enterprise. Underestimation of the importance of the sphere of management by managers, the habit of relying on their experience and intuition, skepticism towards scientific developments and professional education in this direction undoubtedly affect the financial and economic results of enterprises' activities." [Reznik N.P. & Opalat D.V., 2019].

In view of such statements, it is advisable to pay attention to the features of ensuring the efficiency of modern enterprise management in the difficult economic conditions that have now developed in Ukraine. An enterprise during a war (and any crisis) should have a step-by-step action plan for getting out of this crisis for at least a month. And although each enterprise needs an individual approach, the algorithm for building strategies for different businesses is similar. The owner and top management

of the organization should work on this, that is, the people on whom decision-making depends, because how to work further is a strategic decision.

In the context of martial law, it is advisable to apply such strategies for managing business structures:

- order strategy (decisions on changes are made solely at the top level of management and passed down through orders / directives);
- replacement strategy (key officers (people) of the organization are replaced by others who agree or are more familiar with the proposed change algorithm);
- structural strategy (changes in organizational behavior are implemented as a result of changes in relations between the organization's personnel);
- team decision strategy (group members receive support for their decision on the need or schedule for implementation of change after review and adoption at the highest level of the organization's hierarchical governance structure);
- data discussion strategy (the head of the organization involves employees in the analysis of the conducted research and the received results of the changes);
- group problem solving strategy (a group of employees independently identifies a problem, collects the necessary information and makes a decision on its elimination).

In addition to the above strategies, domestic enterprises should pursue the strategy of restoring the activities of enterprises, the strategy of relocation of enterprises, adapting to changing conditions and using Internet marketing methods.

Talking about the need for an enterprise strategy during the war, we must, first of all, think about the war itself and the crisis phenomena that it causes. The external influences of the war entail a radical change in the parameters of the enterprise's external environment (for example, the behavior of people or their consumer habits change). War contributes to the emergence of a high degree of uncertainty and being out of balance. Under these conditions the company is faced with the fact that old principles and approaches do not work.

In order for enterprises to survive in the difficult conditions of wartime, the key task of management should be to direct the activities of the organization to ensure three points:

- retain as many customers existing as possible;
- find new customers;
- launch new products.

First of all, it is necessary to understand what impact the new context had on consumers and what is the reason that they started to buy products less or not at all. The product that the company offers to consumers may be too expensive in the current circumstances. In this case, you need to reformat the offer line, divide the product into parts, or allow customers to pay in installments. Management should focus on identifying new customer needs and addressing them.

In order for the impact of the war on the activities of the enterprise to be less noticeable, in our opinion, it is necessary to comply with such principles and approaches in the management of the enterprise:

- creativity - the war requires from the management of the higher level to make non-standard decisions, therefore the management of the organization can use different ways to overcome it and introduce new tools;
- every enterprise has competitive advantages, and doing business in wartime requires focusing the special attention of the enterprise on its competitive advantages;
- the organization team should have its own special anti-crisis unit during the war, which will look for innovative ways to solve problems;
- the company should focus on the mission, the goals of its activities;
- *communications* within the organization should be of high quality and intensive;
- the management of the organization must clearly define the specific goals of activities during the period of martial law, determine what the management aims to achieve and how these achievements will be measured.

In the war conditions management must first of all begin with an analysis of the current situation to understand where the enterprise is and where it should move next. At the same time, it is very important to continue to explore the market, the changes that have occurred on it, new needs and trends. Thus, the enterprise will be able to focus on its own product or service that it produces and sells. After all, with the outbreak of war, the relevance of products and services changes, which may mean the need for change.

The main thing you need to understand is that war and the difficulties for the enterprise caused by it are always an opportunity for growth and development. This is the moment when the management of the organization can clearly and deeply explore their own enterprise, improve the management of the organization, discover its new facets and opportunities, and also find unique directions for the growth and development of the enterprise.

### **Results and discussion**

Hence, the successful operation of enterprises under martial law is impossible without the effective transformation of established approaches to the management of organizations and should provide for the constant improvement of the personnel, production and economic aspects of the organization's activities.

In the current conditions of war, an extremely important and effective factor in ensuring the development of the enterprise is the prompt and timely change and adjustment of approaches to the management of the organization in order to preserve the personnel potential of the enterprise in these difficult and unpredictable business conditions.



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