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ECONOMIC SECURITY STRATEGY OF UKRAINE IN THE CONTEXT OF GLOBAL TRANSFORMATIONS*

The article analyses theoretical and conceptual approaches to define the essence of economic security. The global economic transformations are characterized in the context of the impact on the national economic security. Indicators of all economic security components are analyzed by comparing them in dynamics with the critical level and proposals for the implementation of economic policy measures which are provided to secure Ukrainian economic policy.

Keywords: national economic security, globalization, global transformations, national economy.

Background. Globalization is an evolutionary trend in society's development. Its impact on the economies of states is ambiguous and manifests itself in both positive and negative terms. On the one hand, globalization contributes to provide all subjects of world economic relations with equal market conditions and increases their chances of effective economic development by applying all the advantages of free movement of capital and productive forces. On the other hand, the differentiation of incomes of the population is growing, which provokes an aggravation of social conflicts, thereby weakening domestic and external protective potentials of economic security. Economic society and commodity security problems are aggravating and becoming global.

In addition, the COVID-19 pandemic has become perhaps the most serious, global challenge for humanity in recent decades. Its consequences will lead to significant changes in the economic and social spheres, which will largely determine the development of society in the near future. Among the significant challenges of the global corona crisis is the sharp increase

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in credit risks, which can provoke a full-scale debt crisis, as well as a significant budget deficit in developing countries, which will lead to an increase in their external debt dependence.

Without a strong and effective economy, it is impossible to properly ensure the level of national competitiveness, scientific and technical development, reliable defense capability, military and political stability of the country, effective social policy, harmony in the moral and spiritual life of society, information protection and the key to a safe environmental condition. Consequently, effective economic security (ES) of the state is the guarantor of its sovereignty, independence and territorial integrity. However, there is still ambivalence of scientific approaches to the formation of the theoretical and methodological basis for ES provision.

As a result of the globalization and integration processes in the world, new threats to the ES of Ukraine are increasing and emerging. Crisis phenomena in the country, along with political and economic instability, have led both to the strengthening of the negative impact of internal and external threats and to the creation of new ones. Therefore, given the level of importance of new challenges and dangers, the research and identification of threats are appeared and had the greatest impact on the national economic system, as well as the justification of the main counter – measures to this impact is emerged.

Analysis of recent research and publications. Theoretical, methodological and practical issues of ES are revealed in the works of A. Grinenko and A. Novikova [1; 2]. The sectoral aspect of economic security has been studied by A. Denisov [3], the processes of formation and provision of international ES are revealed in A. Gapeeva [4], and social aspects of economic security are investigated by T. Tokarsky [5].

As the analysis of theoretical research has shown, the problems of ES are also widely represented in the works of modern foreign scientists. In particular, we can note the article of I. Kremer-Matishkevich and J. Chernius [6], in which the theoretical foundations of ES are thoroughly investigated. Financial and energy aspects of economic security are given in the works of M. Popescu [7], P. Partasarati and other scientists studying its social components – the level of income and health of the population [8]. Also noteworthy is the work of S. Tanga, which proposes a rethinking of the country's ES due to the strengthening of globalization processes [9].

At the same time, the issue of threats to Ukrainian economic security caused by globalization processes in the world is becoming more urgent. Features of the transformation of the global system require constant monitoring of trends in the economic sphere, identification of the main risks and threats of ES, formulation of state measures which are directed to minimize and eliminate negative impact.

The **aim** of the article is to study the modern global impact transformations on the national economic security with the analysis of relevant challenges and threats in the context of providing a scientific basis for changing state policy in the field of economic security.

Materials and methods. The theoretical and methodological basis for writing the article composed the modern scientific concepts and theoretical developments on ES and security policy, the results of analytical studies of international organizations, statistical data of the State Statistics Service of Ukraine and the National Bank of Ukraine. Achieving the goals of the study and implementing the tasks involved the use of statistical analysis methods, synthesis, grouping, as well as tabular and graphical representation of the results.

Results. *Theoretical foundations of economic security.*

In accordance with the Law of Ukraine "On National Security of Ukraine", National Security of Ukraine is the protection of state sovereignty, territorial integrity, democratic constitutional order and other national interests of Ukraine from real and potential threats [10].

The ES of the state plays a leading role in the national security system. It significantly affects the economic sovereignty of the state, its financial stability, economic development, the implementation of effective social policy, the provision of society from environmental elements, the growth of nationnal competitiveness in conditions of international economic interdependdence. The effective functioning of the ES system of the state allows timely identification of threats to national economic interests and prevention of damage to the socio-economic system as a whole. It is especially important to improve the economic security system for those countries that are in a transformational crisis with an aggravation of its inherent contradictions [11].

Currently, many approaches have been published in the scientific literature to determine security and other basic concepts related to the problems of this area: security, economic security, threat, risk, interest, damage, source of threat, subject of threat and object of threat. Specialists do not have unity in the interpretation of the concepts of "economic security" and "risk". Accordingly, the content of economic security and risk management activities (prevention, minimization, etc.) is understood differently. This problem is aggravated by the fact that the basic concepts of security – threat and risk – do not have sufficient normative certainty. At the same time, a clear alternative system of views can also be built in the modern sense of the term "economic security". For adequate forecasting and risk management, it is necessary to consider society as a large complex organizational system with a network-centric, fractal structure and mechanisms of self-organization. Thus, for comprehensive risk analysis and strategic planning of national and public interests, the United States has created a strategic management environment that combines 50 states and 3 100 SPAS districts into a single set of federal-level strategies. There is a system of global information monitoring, monitoring of technology and market development, financial flows. 35 000 of the most successful innovative companies are constantly monitored. As part of deoffshorization, a system of automatic information exchange on financial flows is being formed, which provides additional advantage to the countries with advanced intellectual processing of information flows. The EU has a world

research center – the World Economic Forum (WEF) in Davos, which has 400 employees and attracts hundreds of external experts to conduct research on the future of mankind.

Summarizing the theoretical developments of national and foreign scientists, it is possible to distinguish individual and macroeconomic approaches to the study of ES (*Figure 1*).

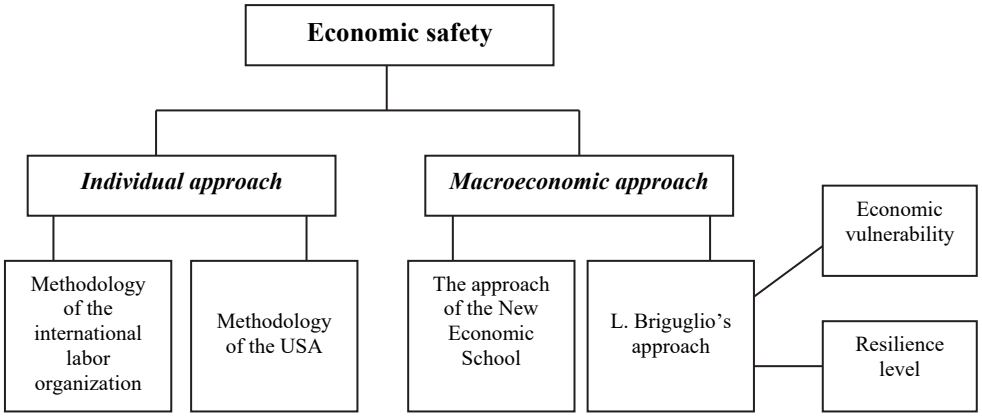

Figure 1. Theoretical and methodological approaches to the interpretation of the term "economic security"

Source: summarized by the authors according to [12].

An *individual approach* (*Figure1*) to the interpretation defines human ES as the presence of a stable income and other sources to maintain a standard of living in the present and near future, that is constant solvency, estimated cash flow, effective use of human capital.

The formation of a *macroeconomic approach* has a complex history, as the period of its development coincides with the times of two world wars. In particular, the formation of such approach is supported by the Russian economic school, which tried to quantify ES using critical (threshold) values. This approach includes a model developed by Professor Lino Briguglio, who evaluates ESs taking into account the economic vulnerability and level of the country's sustainability.

The economic security of a household or individual is the object of research at the microlevel, in particular, the human ES is investigated by P. Partasarati (2014), J. Hacker and others. (2014), N. Hsi (2015), J. Maruti and D. Lewis (2016), focusing on the importance of savings and threats to the life quality of adults and the elderly [8; 13–15]. These scientists give a general definition of economic security: ensuring personal financial resources, social integration, health safety strategy, guaranteeing dignity and quality of life.

Studying household behavior, S. Mueller (2015) and I. Nam (2016) also emphasize that long-term economic security and family development depend to a large extent on savings and wealth accumulation. These scientists describe ES as a measure of individual or home ability [16; 17].

L. Maurice and L. Deprez (2013) analyze the financial resources, quality of life and women competitiveness of working age in the labor market of the United States, so their understanding of ES is greatly simplified and focused on the individual ability to be independent. In their opinion, economic security is a financial situation where a person can live the way he wants [A1], not the way he lives [18]. J. Queen and K. Kyle (2016) analyzed the impact of various measures of economic vulnerability on the overall situation of the individual economic security [19]. Thus, their definition of ES is similar to those already mentioned, that is, the availability of financial opportunities, solvency, social well-being and resistance to external threats.

The economic security of companies is analyzed *at the microlevel*. ES business structures are studied by G. Misko and A. Maluta (2015), N. Kasyanova and A. Kasyanov (2015), M. Baldzhi (2017). According to these scientists, EM is a condition where resources are effectively used to prevent threats and ensure the functioning and stable development of the company. They characterize ES as a combination of qualitative and quantitative indicators [20–22]. To achieve the highest level of ES, companies must ensure maximum safety of the main functional components. Researchers analyzing ES companies distinguish the following elements: finance, human resources, technology and innovation, political and legal environment, environmental ecology and information security.

Considering ES *at the macrolevel*, we can make assumptions about the *economic security of the country*.

Research by domestic and Russian scientists uses models for assessing the ES of the country or region on the basis of critical boundaries. In particular, K. Tokarev (2008) describes methods for determining the economic security of the state and identifies its three main indicators: economic, describing the level of development of the country's economy; social, determining the level of social development of the state; financial, assessing the policy of budgetary, credit and tax budgeting of the country [23]. H. Blinichkina (2015) describes the conditions for economic security, proposes to calculate ES indices using the determinant system [24]. These scientists describe ES as the formation of economic sustainability using available resources. They also complement this definition by introducing ES as a prerequisite for the development of the national economy. C. Dadalko et al. (2017) argue that ES is one of the key functions of state regulation. Ensuring economic security leads to the implementation of other functions [25]. According to these researchers, EB support is especially necessary in times of crisis, as the number of risks and threats increases, and mechanisms to prevent them during the crisis lose efficiency.

Summarizing the ES study, several definitions can be given depending on the approach (*Table 1*).

Table 1

Approaches to the economic security interpretation

Approach	Definition
By content and concept	Vital interests protection of individuals, society, countries and economic interests'
	State of the economy, authorities, economic system
	Economic mode of operation
	Qualitative characteristics of the economic system
By subject	Life interests
	National interests
	Economic interests
By security mechanism	Without signs of a mechanism
	Regulatory, administrative and organizational, economic, technological, informational etc
Depending on the consequences	Threats
	Unfavorable external and internal factors

Source: summarized by authors [23–25].

Sue Moon Tang in his study "Rethinking Economic Security in a Globalized World" (2015) proposes to consider the concept of ES in the context of the impact of globalization. In his opinion, ES should be understood not only as sufficient financial support for survival, but also as combating poverty and unemployment, dangers and threats, as preventing legal violations and corruption. This is not only an existential issue – economic security should become a priority in the development of general state security [9].

In Ukraine, the normatively enshrined concept of ES can be found in the methodological recommendations for calculating the level of ES of Ukraine approved back in 2013. According to them, economic security is a state of the national economy that allows you to maintain resistance to internal and external threats, ensure high competitiveness in the world economic environment and characterizes the ability of the national economy for sustainable and balanced growth [26].

The recently adopted Economic Security Strategy lacks a specific definition of ES. It is considered from the point of view of implementing the priorities of national interests [27], which, in turn, involve sustainable development of the national economy, equal mutually beneficial economic cooperation with other states and Ukraine's integration into the European economic space.

Summarizing, we can cite such a *comprehensive definition of economic security* – an instrument of economic regulation (regulation mechanism), which helps to use available resources, provides a sufficiently high and stable growth trend in economic indicators, fights poverty and unemployment, expands social security, prevents loss of competitiveness, effectively solves economic needs, responds in a timely manner, neutralizes threats, forms national security.

Based on the results of the analysis of foreign and domestic theoretical research on this issue [15; 19; 22; 28–31], the conceptual foundations of the economic security of the state (*Figure 2*) are formulated, which in turn can be the basis for the methodology for assessing its level.

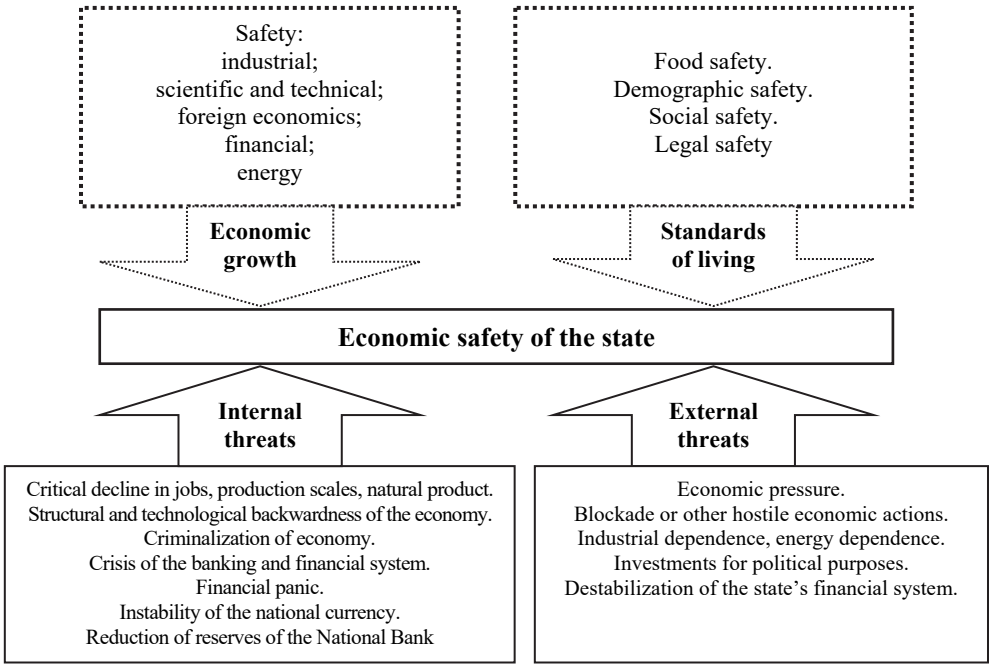

Figure 2. Conceptual principles of national economic security

Source: built by the authors on the basis of [15; 19; 22; 28–31].

Threats to economic security are phenomena and processes that negatively affect the country's economy and infringe on the economic interests of the individual, society and the state. Constant monitoring and identification of the main threats of ES contributes to its maintenance at the proper level, as well as allows for the timely development and implementation of practical measures aimed at their elimination or minimization of the impact of threats [32].

The National Economic Security Strategy of Ukraine until 2025 identifies priority areas at which state policy measures in the field of countering and minimizing threats are aimed [27]:

- the financial security;
- the occupational safety;
- the foreign economic security;
- the Investment and innovative security;
- the macroeconomic security.

Modern global transformations.

The current state of the domestic economy is characterized by instability, the presence of a large number of threats that cause significant risks, undermine the possibilities of implementing the goals of socio-economic development, strengthening the country's defense capacity, in general creating economic problems to ensure national security. Any modern economic system at the country level is an open system, includes many interrelations between economic entities, various state and public institutions, the change

and functioning of which takes place dynamically and non-linearly. These processes are mainly used by the most economically developed countries and transnational corporations (TNCs) to achieve their economic and political goals - globalization and the ideology of open markets allow you to quickly capture market sectors in different countries, suppressing local producers.

The transformation of the world economic system changes the idea not only of the patterns of globalization, but also of the mechanism of functioning of the economy of each individual state. Now no one denies that globalization is a key process influenced by the economy and politics of each individual country. There is growing reason to argue that the degree of integration of the state into the global economy depends on the interest of the global economic system in its market space and economic resources.

On the other hand, this statement could be denied, since there are quite a large number of states in the world that actively resist the integration process. In particular, these include Iran, Iraq, Afghanistan, North Korea. Indeed, the economic life of these countries is largely based on the principles of autarky. However, there is another point of view. The national economic policies of these countries adhere to the principles of autarky not only because their political leadership has made such a decision or has a clear need for it. The fact is that the leading countries of the global economic space have built a certain system that these states are almost unable to violate on their own. All their international economic contacts should be coordinated with the leading countries through different institutions; this is very clearly monitored when any unauthorized actions cease, both on the part of these states and on the part of those who would like to expand economic relations with them.

Thus, the essence of globalization in its modern understanding is to dramatically expand and complicate the interrelations and interdependencies of different states. This is a new stage of economic development, a new quality of relations between countries and their economies. Globalization consists of many deep transformations which take place in different areas of human activity (not only in economic activity). From this point of view, globalization is a system of new rules (and even barriers) between different countries and their economies. And this does not contradict to general understanding that globalization leads to a reduction in barriers between different economies, the rice in world production of goods and services in order to expand trade and other international exchange processes which are integrated and supranationally regulated by the world economy. Therefore, the essence of globalization is also considered as an increase in the interdependence of economic agents to the extent that the action of each of them affects the interests of everyone else and at the same time affects processes and phenomena in other (non-economic) fields of society. This opens up great opportunities associated with the rapid expansion of goods, information flows and the emergence of a broader interaction between states, firms and people than before. Scientific and technological progress also plays

an important role in the field of transport, telecommunications and information technology. As well as the educational improving level of people, it contributes to the convergence of all modern world components: distances are reduced, new opportunities for transportation and communication arise, transaction costs associated with trade and financial transactions are significantly reduced.

As the result, the most important contradiction of globalization was revealed: this process as expands relative freedom for states and their economic entities as compresses it, bringing the economic entities actions not as to economic benefits as to compliance with certain, even unwritten rules. It is in this direction that scientists around the world have been investigated the problem of globalization in recent years.

The state of the country's inclusion in the world economy, namely the degree of globalization of the country, shows the KOF Index of Globalization calculated by the Swiss Economic Institute, consisting of three subindexes: economic globalization, social globalization and political globalization (*Table 2*). The economic component of the Globalization Index assesses the volume of international trade, investment and income received relative to GDP, the impact of restrictions imposed by the country on commercial and financial flows [33].

Table 2

World country ranking of globalization (KOFGlobalisationIndex – 2020)

Country	Index of globalization		Economic globalization		Social globalization		Political globalization	
	Place	Percent	Place	Percent	Place	Percent	Place	Percent
Switzerland	1	90.79	7	86.41	4	90.35	8	95.62
Germany	6	88.83	24	80.60	14	87.99	2	97.90
USA	25	82.28	59	67.68	21	86.56	15	92.59
Poland	33	79.67	40	72.84	69	75.41	23	90.78
Ukraine	44	74.95	66	66.01	88	70.38	32	88.32
China	82	64.28	146	44.95	135	57.61	26	90.29

Source: [33].

As follows from *Table 2*, China took the last place in terms of the economic component of the KOF Index (as of 2018), while Switzerland and Germany belonged to the leading positions.

Without denying the positive impact of globalization, expressed in the effect of competition, to which it inevitably leads, in the emergence of common "rules of the game", in the development of collective security measures that offer great opportunities for the development of all countries and negative consequences can also be observed. They involve significant benefits from stronger and economically developed countries, which can become the basis for future conflicts – economic, political and even military – between individual countries and their communities. Therefore, globalization changes the national functions and capabilities as an element of the political and economic system and a participant in economic processes [34].

In the context of the world economy globalization, the external dangers of the country's ES increase significantly which are associated with adverse actions in the world economy. As V. Rococha notes, in existing ES systems built in the previous century, dysfunctions began to manifest themselves, as, on the one hand, traditional threats are modified, and on the other hand, new ones are generated by globalized environment [35]. Due to the discrepancy between the established systems of the national ES and threats, there is a need to form new models of national economic security that would be derived from traditional (modified) and specific (new) globalization threats. The effectiveness of solving this difficulty depends on the correct identification of the latest threats and, accordingly, the transformation of state ES models [35].

The establishment of an effective economic security mechanism also depends on the type of state. They are usually divided into three types: developed, which are in progress and outsiders. However, another approach that is more adequate to the conditions of the globalization economy is increasingly being taken: countries that consume and export resources.

The basis of security has not been limited for a long time to self-reliance and meeting national needs with its economic resources. The current understanding of ES is transformed into the state ability to build its country's relations as a subsystem of the global economy with the system itself in such a way as to ensure the fullest possible satisfaction of the economic entities needs. At the same time, as few own irreproducible resources as possible should be used, if possible "transferring" part of your tasks to partners or it is better to solve these problems together with partners. This partnership is of particular importance today.

Based on the peculiarities of the world economic development in the period of globalization and the tasks related to the complexity of the state functions, there are changes in the understanding of the ES. Therefore, today economic security should be understood as such a set of opportunities of the national economy, conditions for their implementation, institutions of state power and management tools, in which national interests are protected in the world and domestic economic space and the development of economic potential are ensured, as well as conditions for the transition to an innovative and at the same time socially oriented economy are created. This definition has a complex structure that can be represented on the basis of three components. *The first* is the ability of the national economy to ensure the economic sovereignty of the country and a leading position in the global world, as well as to adapt to changing external conditions. *The second* is the ability to maintain an assessment system that not only adequately identifies the level of EB of the national economy, but is also an indicator that identifies the areas in which it is necessary to ensure its further advancement. *The third* component is the ability and readiness of the state institutions to effectively counteract emerging global economic threats not only through

the use of economic capabilities, but also by increasing the efficiency of governance and by creating an economic and legal environment that will ensure the growth of the potential and real possibilities of the national economic system.

The most important feature of globalization and its prerequisite is to increase the *degree* of the national and world economy *openness*, which leads to two opposite processes. *Firstly*, in many parts of the world, state borders have finally ceased to be the most important barrier between the flows of production factors, goods and money, becoming a place of cooperation, which allows to reduce production costs, optimize the production structure and range of products, simplify the capital attraction and, as a result, accelerate economic development. *Secondly*, the openness of borders allows to increase the demand for certain groups of goods and services, the production of which is more efficient in a country, which leads to uneven development of industries and increases dependence on the world market conditions, strengthens the role of external economic threats.

In general, the transformation of the global national security system takes place in the direction of increasing the role of "soft security" problems, which is based on such socio-economic subsystems as financial, environmental, poverty alleviation, etc. "Hard safety" issues are increasingly moving to the field of competition in the field of new technologies. In this regard, a special role is played by TNCs, which seek to align all promising segments of the economy and the economic policies of different countries with the interests of the unification of the global economic space, Ukraine is no exception. Obviously, we are dealing with a completely different form of economic danger. Therefore, it is necessary to develop other forms of monitoring and elimination/minimization of emerging hazards.

On the territory of host countries, TNCs, as a rule, absolutely independently determine specialization and thereby affect the trends in the development of the sectoral structure of the countries' economies, as well as the way and nature of their participation in the international labor division and the model implementation of labor division. This may have an impact on ES in the course of developing export-oriented raw materials industries, production of intermediate or finished standardized products, environmentally dirty or labor-intensive industries in host countries. The result of such activities is the formation of an extremely inefficient, non-competitive, morally outdated structure of the national economy and thus a decrease in the level of national economic security.

Another global transformation is the *information economy*. It creates other macro-proportions between its subsystems and poses new threats that affect the nature and level of economic security. In this regard, the following problems need to be solved:

- the formation of new patterns, mechanisms and development propor-tions of the main sectors and economic parameters in assessing development results;

• the creation of new and transformation of existing bodies regulating the economic system;

• the transformation of the role and functions of the Central Bank in regulating the monetary system, the money supply with the active dissemination of electronic money;

• the emergence of new integrated animation effects;

• the change of pricing principles and supply modification and demand functions for electronic services;

• the tax and customs regulation of electronic commerce;

• changing the conditions of optimality and sustainability of short- and long-term equilibrium of individual markets and macroeconomic equilibrium;

• the emergence of the latest principles and tools of competitive struggle.

The results of the analysis show that the ability to prevent new threats is due to the ability to quickly receive process, transmit, use information and produce new ones in a way that minimizes economic danger to economic entities and the state as a whole. Consequently, while in the past the success of a business activity depended largely on a combination of classical production factors, today it is determined by the use of a complex combination of capital, information and intellectual resources for rapid and qualitative economic growth and provision of ES as a guarantee of success, stability and development.

Along with the global considered transformations, the global COVID-19 pandemic has received a significant impact on the EC. It had a negative impact on all countries of the world without exception. The fall in world GDP in 2020 was recorded at 3.2%, in developed countries – 4.6 %, and in developing countries – 2.1 % [36]. In addition, IMF experts note that this crisis is unlike every other one with uncertain recovery prospects.

The corona virus pandemic has also affected to global political processes. The confrontation between the United States and China has intensified tensions between the United States and the EU, the European Union and Russia have increased. According to of O. Chaly: "The world has become multipolar. If there used to be a dispute, today neither in the United States nor in the EU no one denies it. Yes, the United States will continue to be the strongest state in the world, but the U.S. hegemony will no longer be in the world" [37]. In his opinion, in recent years Ukraine has moved away from any balance, subordinating its policy to purely strategic interests of the United States and the EU. "Of course, the United States is Ukraine's main strategic partner, but national interests should be based on relations with any partner in the post-corona virus world. COVID-19 has shown that international life should be based on national interests, not on values. Even EU member states have put their national interests at the forefront. In this context, Ukraine needs a new national security strategy and a new concept of foreign policy," – said O. Chaly [37].

Among the main threats to national security associated with the spread of COVID-19, experts highlight: insufficient level of health financing; limited access of the population to health services; restriction of human rights and freedoms, including the "right to health care"; an increase in the number of criminal violations of sanitary rules and legal norms for the prevention of infectious diseases; an increase in sales of counterfeit medical and sanitary and hygienic products, as well as personal protective equipment; an increase in cybercrime; an increase in cases of domestic violence; a low level of government management in the field of health care [38].

Accordingly, the economic sphere of national security is also negatively affected by the pandemic, which aggravates the crisis in the budgetary sphere (increasing budget deficit and debt burden), the volume of non-payments of both public institutions and the population are increasing, which ultimately leads to a drop in living standards and an increase in poverty. Taking into account these conditions, state measures aimed at supporting the economy and the population become even more necessary. How this is carried out by the developed countries of the world (USA, Great Britain, EU, etc.) – within the framework of already implemented and announced direct and indirect measures to stimulate the economy. Support reaches 10–15 % of GDP; interest rates are reduced to zero. However, the national financial system has a much smaller ability to work in a critically rational use of resources. Therefore, in order to overcome the consequences of the COVID crisis, which strengthens the industrial stagnation and economic recession of 2019–2020, a more flexible model of economic security is needed that would combine state financial support measures with organizational and economic tools aimed at to use and optimize the resources of national economic entities.

Thus, contrary to all these changes, the basis for ensuring the national economic security should be the real sector of the national economy. This is facilitated by a number of factors, the analysis of which is a prerequisite for determining a work plan to further improve the level of economic security and the position of our country during the global crisis is a vivid confirmation of this.

Economic security indicators of Ukraine.

In recent years, there have been significant changes in the methodology for assessing the economic security of Ukraine. The Methodology for Calculating the Level of Economic Security of Ukraine in 2007 [39] defined an integral assessment of the level of the ES of Ukraine as a whole in the economy and in certain areas of activity on the basis of a fairly wide list of indicators grouped in accordance with the sphere of ES: macroeconomic, production, financial (distributable) into budgetary, monetary, currency, debt, insurance, stock, banking), investment, foreign economic, scientific and technological, social, demographic, energy, food. Each area was evaluated by weight factor and contained a fairly wide range of indicators.

The following methodology for calculating the level of ES of Ukraine, approved in 2013 [33], provided for the calculation of the integral economic security index, consisting of 9 weighted average sub-indexes (consisting of ES): production, demographic, energy, foreign economic, investment and innovative, macroeconomic, social, financial security. That is, investment and scientific and technological security has already been considered as investment and innovative. The list of ES level assessment indicators has also been significantly expanded: the calculation of integral indices for these economic security components (subindexes) was carried out on the basis of the assessment of more than 130 individual indicators, including both statistical data and data obtained by the survey of respondents.

The National Economic Security Strategy 2021 maintains the approach to determine the integral indicator of economic security (Methodological recommendations of 2013 apply), but according to a much shorter list of indicators and areas that are evaluated (5 spheres): demographic security, as well as energy security, food security and social security. Instead, indicators reflecting Ukraine's place in international rankings are included [27].

Describing economic situation in Ukraine over the past 10 years, it is clear that it has not become a prerequisite for securing national economic interests. During this period, the state of the ES was assessed as unsatisfactory with the deterioration of indicators for almost all components to a dangerous level in 2012, 2014–2015 and 2019–2020 (*Table 3*).

It should be noted that not all ES indicators given in the Methodological Recommendations of the Ministry of Economy are included for analysis, but the main ones reflecting the situation in the relevant field of ES are selected.

Regarding the *financial component* of economic security, based on the results of its analysis, it can be noted that over the past 10 years the dynamic of financial indicators has been unstable, there has been a constant approach to their critical level and even exceeding it, which indicates an unsatisfactory state of financial security (*Table 3*). The reason for this was the permanent shortage of the state budget and the associated significant debt burden, weak functionality of the tax system, distrust of the population in the banking system, insufficiency of long-term investment lending to the economy and low liquidity of the stock market. The accumulated structural problems of the financial system of Ukraine led to its crisis for several years. However, in the report on the financial stability of the NBU, the national regulator noted the sufficiency of the level of financial security to ensure that the financial sector properly performs its functions and successfully passes the crisis caused by the COVID-19 pandemic [40].

Table 3

Economic Security Indicators

Indicators	Value											Critical value
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Financial safety												
State budget deficits, % to GDP	5.7	1.7	3.7	4.2	4.9	2.3	2.9	1.6	1.7	2	7.5	3
Amount of public dept, % до GDP	30	27.5	28.4	32.8	59.7	67.1	69.2	61.5	52.2	44.3	63	50
Shadow economy level	36	32	30	30	36	35	33	32	29	27	30	13
Gross international reserves of Ukraine, import months	4.4	3.8	3	3.5	1.8	3	3	3.2	3.3	4.9	4.8	3
Share of long-term loans in the total amount of loans granted, %	28.9	25.3	21.6	19.1	16.6	15.2	23.8	25.8	22.5	20.04	18.2	25
Production safety												
The degree of wear and tear of fixed assets in industry, %	63	56.8	57.3	56.9	60.3	76.9	69.4	59.1	66.4	59.1	63.9	80
Share of high-tech products in the total volume of industrial products sold, %	2.28	2.26	2.8	2.83	3.19	3.15	2.9	3.06	2.94	2.91	2.7	2
Proportion of value added of industrial enterprises belonging to the high-tech sector	–	–	2.1	2.2	1.8	1.9	1.9	1.7	1.4	1.2	1.1	2
Ukraine's place in the Doing Business rating	149	152	137	112	87	81	80	76	71	70	64	–
Foreign economics safety												
Proportion of exports of goods using high and medium-level technology in production in total exports of goods, %	25.3	26.1	27.5	24.4	20.4	19.2	17.3	16.8	17	16.3	15.1	15
Import, % to GDP	51.1	56.4	56.4	52.2	52.1	55.2	56.2	55.7	53.8	49.0	51.9	50
Share of imports in domestic consumption of the state, %	20.9	18.8	20.5	24.6	24.9	25.7	26.2	28.6	28.5	33.5	31.3	30
Export import coverage ratio, times	1.09	1.13	1.18	1.22	1.07	1.04	1.12	1.02	1.08	1.02	0.99	1
Investment and innovation safety												
Share of foreign direct investments in GDP,%	4.1	4.1	3.9	2.1	0.22	0.4	4.1	3.3	3.4	3.4	0.2	4
Share of gross fixed capital accumulation in GDP, %	17	17.6	19	16.9	14.2	13.5	15.5	15.8	17.6	18.0	12.8	25
Share of public spending on R&D in GDP, %	0.34	0.3	0.34	0.32	0.25	0.21	0.16	0.16	0.17	0.17	0.14	1.7
Ukraine's place in the "Global innovation index" rating	61	60	63	71	63	64	56	50	43	47	45	–
Macroeconomic safety												
GDP Volume index, %	104.1	105.5	100.2	100	93.4	90.2	102.4	102.5	103.4	103.2	96.5	100
Gross domestic product per employee, %	103.7	105.2	100.1	99.7	99.9	99.2	103.5	103.2	102.1	101.3	99.9	100
The population's tendency to save money, %	19.1	12.4	12.8	9.6	2.7	2.3	0.8	1.5	1.3	–4.1	–0.56	3
Unemployment rate of the population aged 15–70 (according to the ILO methodology), %	8.1	7.9	7.5	7.2	9.3	9.1	9.3	9.5	8.8	8.2	9.5	9

Source: made by authors [40–45].

The analyzed indicators of the financial sector indicate significant challenges and threats to the national economic security, among which are:

- the limited connection between budget planning and priority areas of state development, low level of budgetary discipline;
- a significant amount of state budget deficit (in 2020 7.5 % of GDP), which is much higher than the critical level of 3 % of GDP. This, in the actual absence of short-term sources of its financing, increases the debt burden on the state budget and entails an increase in public debt;
- the high level of the shadow economy (30 % of official GDP compared to 27 % of GDP in 2019) [41];
- the deployment of tax evasion schemes by importing "gray" imports and smuggling, which leads to loss of budget revenues;
- the widespread phenomena of income legalization illegally gained;
- the inconsistent legal regulation of relations in the tax sphere;
- the insufficient long-term lending to the real sector of the economy and a significant share of non-performing bank loans;
- the high demographic load on the pension system;
- the low level of stock market liquidity, protection of investors' rights along with insufficient ability of the regulator to counter abuse in the market.

Dynamics of industrial safety indicators as a result of their unsatisfactory level show the inability to safeguard the main national economic interests of Ukraine in the production sector. These trends were formed as a result of a decrease in demand for domestic products, an increase in costs for imported raw materials and materials in conditions of low level of manufacturability, high energy and material intensity of production, as well as the loss of a significant part of production potential and human capital, fixed assets of industrial enterprises and access to strategic minerals as a result of the occupation of part of the eastern territory of Ukraine.

Over the past two years, the world market for Ukraine has developed unfavorable conditions for price conditions, in particular in the ferrous metals market, which, along with the revaluation of the national currency and the application of protectionist measures against their producers by other countries, caused a drop in industrial production volumes and a deterioration in the profitability of operational activities of industrial enterprises. As a result of the introduction of quarantine measures both in Ukraine and around the world, the production sector also experienced a negative impact – in 2020. The Industrial Product Index decreased by 4.5 % [43].

However, problems in the production sector have accumulated over the years, and their existence only aggravated the national economy crisis and increased threats in the field of industrial safety, among which, as noted in the Economic Security Strategy of Ukraine for the period up to 2025 [27]: a high level of resource intensity of production and low resource efficiency of the economy, strengthening its deindustrialization; inconsistency of the structure of the national economy with modern technological trends, low

level of introduction of the latest production technologies, insufficient involvement of Ukraine in global production chains; high level of wear of fixed assets in industry and construction; excessive share of imports in the domestic market of food and non-food products with the gradual displacement of Ukrainian producers from it and aggravation of the problem of import substitution in high-tech industries, primarily in space and aviation; inefficient state regulation in the field of natural monopolies and reduction of competition in certain commodity markets. In addition, in the context of recent trends in the spread of pandemics and various isolation processes, there is no full cycle of production of critical goods to ensure human life in the world, which also worsens economic security.

The crisis situation in the field of financial and industrial safety also reflects the *foreign economic sphere*, in which the low competitiveness of domestic production, commodity exports and the loss of a significant part of foreign markets have exacerbated the imbalances in foreign economic activity in unstable conditions of the development of the world economy. Among the threats in the foreign economic sphere, the ES is highlighted [27]: an increase in the number of protectionist measures applied by foreign countries, in particular, against Ukrainian goods (a high level of customs tariffs, other customs duties, payments, as well as the use of non-tariff barriers – certification, permits, licenses, etc.); insufficient diversification of Ukrainian exports, the prevalence in the export of raw materials, and in imports – high-tech products; a high level of import dependence; underdevelopment of foreign trade infrastructure, insufficient level of institutional opportunity to represent Ukraine's trade interests within the framework of international trade organizations, in particular the World Trade Organization; insufficient access to the markets of EU countries, requiring an early revision of the provisions of the Agreement on Associations between Ukraine and the European Union. In addition, there is a risk of export restrictions in case of introduction of new carbon taxes for Ukrainian goods.

Despite the annual place improvement in Ukraine on the Global Innovation Index [45] since 2016, the situation in the field of investment and innovative security is also a matter of concern. The decrease in foreign direct investment, the fall in the share of gross fixed capital accumulation in GDP, the decrease in public spending on research and development and other indicators of innovative development indicate the impossibility of sustainnable economic growth in the deficits face and inefficient use of investment and technological backwardness.

These structural imbalances and negative dynamics of indicators in the financial, industrial, foreign economic and investment-innovative spheres, which have been formed over the past ten years, constrain the economic development of the country (both quantitative and qualitative), which also affected the state of *macroeconomic security*. Accordingly, its level can also be considered dangerous, since Ukraine lacks stable economic growth,

destabilized labor market, poverty among the population is growing (according to the UN methodology, it is established that more than 60 % of the population is poor, and according to the IMF report Ukraine is considered the poorest country in Europe as a gross product per capita, and in the lowest wage rating [46]). A significant external risk in further destabilization of the macro-environment can be considered a slowdown in the development of the world economy in the context of the COVID-19 pandemic and the associated decrease in world prices for the main commodity groups of domestic exports [27], but the main threat to macroeconomic security is the internal crisis situation in both the economy and social sphere, in particular, a decrease in national economic activity, inflationary and exchange rate fluctuations; low incomes of the population; intensification of labor migration processes; imbalances between labor supply and demand in the labor market.

Thus, the results of the analysis and identification of threats to Ukrainian economic security show that now it is internal threats that have a decisive impact on the state of the ES. However, as scientists note [47], the presence of internal threats to the national economic security determines the growth of external threats; for example, the ineffectiveness of state regulation in the context of globalization generates the emergence and implementtation of external threats to the state's ES. In the context of new challenges and threats, there is a need to improve and implement effective measures to counter the negative impact of the main threats of the national ES. In this regard, the issue of improving the national regulation system in the field of economic security is being updated.

As a result of threat analysis in key areas of the ES, countermeasures have been proposed, in particular:

- the establishment of new economic development goals – modernization of the economy and stability of economic growth;
- the effective financial regulation accommodating changes in external and internal development factors;
- the creation of conditions for the priority direction of banks' credit funds for the development of the economy real sector, small and medium-sized businesses;
- the elimination of imbalances in economic development in order to ensure the sustainability of economic growth;
- the reduction of corruption phenomena in the country by introducing effective measures in the context of the existing anti-corruption policy and the presence of a significant number of anti-corruption bodies;
- the increase of tax discipline, accounting for budgetary security when amending tax legislation;
- improvement of the population level and quality of life;
- the reinforcement of national efficiency and regional governments, optimizing the system of state regulation in order to overcome the threats of ES;
- the scientific growth stimulation of technical, industrial, educational and technological potential of the country.

These measures do not cover all aspects and areas of economic security. They are rather priority, as solving this problem is a long-term process. However, with the increasing influence of globalization on the national EB, their implementation is urgently needed and requires decisive action by the state.

Conclusion. The study of theoretical concepts made it possible to form conceptual foundations of economic security, the main provisions of which are, on the one hand, economic development of ensuring investment, industrial, scientific, technical foreign economic, financial and energy security of the state, maintaining appropriate living standards, on the other hand – monitoring, anticipation, prevention and counteraction both internal (critical job losses, scale of national production, structural and technological backwardness of the economy, criminalization of the economy, crisis of the banking and financial system, instability of the national currency, reduction of reserves of the national bank) and external threats (economic pressure, blockades or other hostile economic actions, industrial, energy dependence, investment for political purposes, destabilization of the state system.

Global transformations determine the logic of a new development stage of the world economy, a new quality of relations between countries and their economies, consisting in a sharp expansion and complexity of interrelations and interdependencies of different states. Increasingly, the most important globalization contradiction that this process expands relative freedom for states and their economic entities and compresses it, bringing economic entities actions not so much to economic benefits as to compliance with certain rules. In this regard, the modern understanding of ES is transformed into the ability of the state to build the relationship of its country as a subsystem of the global economy with the system itself in such a way as to ensure the fullest possible satisfaction of the economic entities needs.

The effectiveness of the national economic security in the context of globalization is determined by: the ability of the national economy to ensure the national economic sovereignty and a leading position in the global world, as well as to adapt to changing external conditions; the ability to have a system of assessments that not only reliably determines the level of the EC of the national economy, but it is an indicator that determine the directions in which its further improvement should be ensured, and the ability the ability of state institutions to deal with emerging global economic threats through effectively improved governance.

The impact of the global COVID-19 pandemic spreading has deepened the country's internal threats to economic security, among which the deterioration of public finances, the accumulation of government agencies debt, the growth of defaults and the worsening of infrastructure.

Trends in the Ukrainian economy development of over the past ten years give grounds to assert that Ukraine has almost no basis for ensuring national economic interests, the implementation of which is associated with the sustainable development of the national economy, equal mutually beneficial economic cooperation with other states, and Ukrainian integration into the European economic space.

As a result of the analysis of the main economic security indicators by its components (financial, production, foreign economic, investment, innovation and macroeconomic) had been established that most of them were approaching the critical level, and some were even exaggerated. Especially it was noted a deterioration of economic security indicators in 2019–2020. As a result, it has been established that internal threats have a decisive influence on the state's economic security.

Modern conditions for the national security development in the context of globalization, caused by new challenges and threats, require the improvement of state regulation system in the field of economic security, in connection with which the main directions of counteracting challenges and threats to national security are outlined.

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Мазаракі А., Мельник Т. Стратегія економічної безпеки України в умовах глобальних трансформацій.

Постановка проблеми. *Внаслідок прояву глобалізаційних та інтеграційних процесів у світі відбувається посилення і поява нових загроз економічній безпеці України, оскільки вплив глобалізації на економіку держав має неоднозначний характер і виявляється як у позитивних, так і негативних рисах. Крім цього епідемія COVID-19 стала, мабуть, найбільш серйозним, глобальним викликом для людства за останні десятиліття, наслідки якої призведуть до суттєвих змін в економічній і соціальній сферах, що визначатиме розвиток суспільства у найближчі роки. Зважаючи на рівень значущосты нових викликів і небезпек, особливої актуальності набувають питання дослідження та виокремлення загроз, що найбільше впливають на економічну систему держави, а також обґрунтування основних заходів протидії цьому впливу.*

Аналіз останніх досліджень і публікацій *показав, що теоретичні та практичні аспекти забезпечення економічної безпеки широко розглядаються вітчизняними та зарубіжними вченими, проте залишаються відкритими питання щодо появи загроз економічній безпеці України, які спричинені глобалізаційними процесами у світі.*

Метою *статті є дослідження впливу сучасних глобальних трансформацій на економічну безпеку держави з аналізом відповідних викликів і загроз у контексті забезпечення наукового підґрунтя для зміни державної політики у сфері економічної безпеки.*

Матеріали та методи. *У процесі дослідження використано методи статистичного аналізу, синтезу, групування, табличного та графічного зображення результатів.*

Результати дослідження. *Розглянуто теоретичні та концептуальні підходи до визначення сутності економічної безпеки. Охарактеризовано глобальні економічні трансформації у контексті впливу на економічну безпеку держави. Проаналізовано індикатори всіх складових економічної безпеки шляхом їх зіставлення в динаміці з критичним рівнем та надано пропозиції щодо впровадження заходів економічної політики, спрямованих на протидію викликам та загрозам економічній безпеці України.*

Висновки. *Ефективність підтримання економічної безпеки держави в умовах глобалізації визначається: здатністю національної економіки забезпечувати економічний суверенітет країни та лідируюче положення в глобальному світі, а також адаптуватися до мінливих зовнішніх умов; наявністю достовірної системи оцінок економічної безпеки; спроможністю державних інститутів ефективно протидіяти виникаючим глобальним економічним загрозам, у т.ч. через підвищення ефективності управління.*

В Україні майже відсутнє підґрунтя для забезпечення національних економічних інтересів, а вплив глобальної пандемії COVID-19 лише поглибив внутрішні загрози економічній безпеці держави, серед яких погіршення стану державних фінансів, накопичення заборгованості держустанов, зростання обсягів неплатежів та погіршення стану інфраструктури тощо. Це, а також незадовільний стан більшості індикаторів економічної безпеки вимагають удосконалення системи державного регулювання у сфері забезпечення економічної безпеки, у зв'язку з чим окреслено основні напрями протидії викликам та загрозам національній безпеці.

Ключові слова: економічна безпека держави, глобалізація, глобальні трансформації, національна економіка.

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BALANCE OF COMPETITIVE CONDITIONS IN UKRAINE: STATE OPTIONS

The article is considered the problem of achieving a balance of competitive forces between real and potential domestic and foreign producers of industrial products in the internal market of Ukraine. It was described the market reforms in Ukraine from the standpoint of balancing competitive conditions on the example of mechanical engineering goods. It was identified the factors that would facilitate ensuring the balance of competitive forces in Ukraine. It was proposed the measures for balancing the competitive conditions manufacturing enterprises due to the intersectoral diversion of capital and involvement the state in investing in high-tech projects.

Keywords: competition, balance competitive conditions, mechanical engineering, industrial enterprises, state competition policy.

Background. The precondition for the formation of the market were important political and economic components: great geographical discoveries, occupation the new lands and their colonization with subsequent looting, slave trade and piracy, monopoly trade in colonial goods and as a consequence – the initial accumulation of capital. The first doctrine of the era of market economy provided active state intervention in market relations, which was embodied the policy of protectionism. Further development of market relations is a prerequisite for the rise the doctrine of classical political economy with its postulates of the invisible hand of the market, the economic man and a radical change in the role of the state, which the role of "night watchman" is assigned.

The question arises as to why such transformations took place: the transition from the active role of the state to the passive one? And what's interesting, the ideas of classical political economy were arisen in England, where Cromwell's protectionist act (1653–1855) operated for a long time, and which was abolished when England has become a workshop of the

world and its goods have flooded all markets. That is, at one time England gained unilateral competitive advantages, which allowed British industrialists to carry out trade expansion to other countries, including Germany. In these conditions, relying only on the market mechanism and the removal of the state from direct participation in the economy contributed to the preservation of the existing state. The German ruling and scientific elite could not accept such a situation. Life itself led to the need for the ideas of F. Liszt with his theory of national economy, which provided for the active role of the state, in contrast to the ideas of the classical school. In fact, F. Liszt almost for the first time proposed to form a competition policy aimed at leveling the playing field. One such tool was the unification of German lands and the creation of a customs union to form a single economic space, as well as educational protectionism to protect the still weak German industry. It was proposed to unite the spiritual and intellectual efforts of the nation to build a powerful state. The economic policies of the United States, tsarist Russia, and Japan were formed on similar principles.

Supporters of classical political economy thought that self-regulation of the market economy takes place in conditions of perfect competition. However, in this context, it arises the question about the existence such perfect competition. A reasoned answer is given by the outstanding economist J. Schumpeter: "… you need to come up with an imaginary golden age of perfect competition, which at some point turned into a monopolistic age, although it is obvious that perfect competition has always been just an abstraction"* [1, p. 124]. That why, it is obvious that there are no equal competitive conditions in economic life. different methods were used for obtaining competitive advantages at all times: from purely economic to military. It is correct the opinion of the famous scientist D. Ajemoglu: "…although economic institutions are critical important for the country's movement towards wealth or poverty, exactly politics and political institutions determine what kind of economic institutions they will be" [2, p. 42].

The course of market reforms in Ukraine has shown that these mentioned statements dealing with the market economy have not been taken into account, and the burden and responsibility for these transformations has been largely placed on the "invisible hand of the market". "During two decades of these reforms industrial production in Ukraine can not still reach the level of 1990, progressive high-tech sectors were disappeared, hundreds of unique enterprises were destroyed, which could become leaders of scientific and technological development of our state and ensure its stability and the formation of high level standards of citizens' lifes" [3, p. 8]. That is why, it is relevant and necessary today to study the problem of the possibility establishing equal competitive conditions for all market participants.

* All citations from foreign sources are translated by the authors of the article.

Analysis of recent studies and publications. Balance issues of competitive forces have been studied by a number of domestic scientists, in particular O. Verteleva, A. Gerasimenko, B. Kvasnyuk, Y. Kindzersky, V. Lagutin, A. Mazaraki, Yu. Umantsiv, T. Shcherbakova, Yu. Yasko [4–13]. Thus, B. Kwasniuk asserts that "The main method of competition policy is to ensure a level equal competitive conditions for all market participants" [6, p. 12]. V. Lagutin develops this thesis: "The strategic goal of competition policy is state's support effective competition and creation level of equal competitive conditions for all market participants" [7, p. 17]. As A. Mazaraki provides, reality of many domestic commodity markets is quasi-competition, the content of which economics should solve" [9, p. 3]. V. Lagutin suggests "The problem of antitrust competition policy is extremely complex and still isn't properly understandable in conceptual theoretical issue", "… problems improving competition policy require new more comprehensive scientific study for incentives developing the national economy and increase its competitiveness" [8, p. 16, 307].

The final solution of this complex theoretical and practical issue is still far away, so the evidence of it is that fact that the Antimonopoly Committee of Ukraine (AMCU) does not consider this issue as a priority especially concerning equal competitive conditions for domestic producers in the domestic market refering to foreign competitors. This issue also fell out of sight the Ministry of Economic Development, Trade and Agriculture of Ukraine. However, the question of balancing competitive forces with foreign entities is increasingly being raised both at the level of entrepreneurs and in government circles.

The **aim** of the article is to substantiate the theoretical and methodological principles and develop practical recommendations for ensuring the balance of competitive conditions in Ukraine.

Materials and methods. It was applied methods of analysis and synthesis, historical and dialectical for achieving the purpose of the article. The survey is based on statistical data of the State Statistics Service of Ukraine, Eurostat and other data in free access.

Results. Achievement of balance competitive conditions can be considered in three aspects: between domestic producers in the domestic market; between domestic and foreign participants in foreign markets; between actual and potential domestic producers and foreign participants in the domestic market. The importance of the latter aspect is explained by the fact that the share of domestic products in the domestic market is critically small and tends to even more decreasing *(Table 1).*

As can be seen from *Table 1*, in the period from 2005 to 2020 there is a significant decreasing in the share of sales of both food and non-food products that were produced in Ukraine.

Table 1

Share of retail sales some categories of goods that were produced in Ukraine,% [13]

Name of the product group	2005	2010	2015	2017	2018	2019	2020
All goods	70.5	64.3	58.1	52.3	53.2	52.4	53.4
Groceries	*90.9*	*88.2*	*85.2*	*82.2*	*81.4*	*80.0*	*79.4*
Meat	96.9	97.1	92.6	95.6	96.5	97.1	96.5
Fish, crustaceans and molluscs (including fish products)	80.6	70.4	59.8	61.8	60.6	72.9	73.2
Dairy products	94.5	94.5	93.5	90.4	89.6	89.4	86.8
Eggs	98.9	99.4	98.9	98.5	99.2	99.1	99.1
Edible oils and fats	94.3	93.3	93.7	92.9	92.9	86.5	84.5
Bakery and flour confectionery	98.4	99.1	97.8	95.1	95.3	92.9	92.1
Sugar confectionery	99.0	98.8	97.4	85.9	85.1	76.1	74.9
Tobacco products (including related products)	93.5	93.1	93.1	88.1	87.0	85.7	87.0
Non-food products	*57.6*	*50.0*	*39.3*	*32.6*	*31.7*	*32.0*	*32.9*
Clothes	23.5	10.7	5.7	8.2	8.8	7.7	7.2
Shoes	9.3	4.2	3.1	3.7	4.2	6.0	7.5
Computers, peripherals, software	22.5	6.1	0.8	1.0	1.9	3.1	3.7
Household equipment for receiving, recording, reproducing sound and images	3.6	4.8	0.7	0.4	0.4	0.5	1.3
Games and toys	40.0	33.7	16.6	13.2	13.1	15.7	19.5
Motorcycles, parts and accessories for them	40.0	0.6	4.9	1.4	2.2	2.0	0.9
Cars, parts and accessories for them	23.1	18.6	7.9	5.3	4.4	4.1	4.0
Furniture	73.8	56.7	42.1	43.6	48.3	51.4	48.9
Pharmaceutical products	56.5	52.1	50.4	49.8	50.2	50.0	49.8
Medical and orthopedic goods	35.9	42.3	35.9	42.6	43.8	46.5	46.6
Motor gasoline	96.5	83.4	61.7	58.6	58.1	60.5	64.4

In studies possibilities ensuring the balance of competitive conditions, it is necessary to rely on dynamic retrospective analysis. The current state of Ukraine's industry is largely determined by the trends that were laid down during the Soviet era. That is why it is relevant to analyze starting conditions under competitive conditions of Ukraine's industrial potential for the moment of getting independence and their dynamics throught three decades.

Ukraine inherited from the economic complex of the USSR rather powerfull industrial potential, but different in level of development and structure [14]. Basically in mechanical engineering structure production potential was represented mainly by universal enterprises, such as PA (Production Association) named after S.P. Korolyov (PLC (Public Limited Company) Meridian) that had in its composition the whole range of workshops from metalworking to plastic. It was established own production microelectronics and began to found relevant Research institute. Such universality multiplied by poor production volumes especially in connection with the general crisis of the 1990s has led to low products competitiveness even in the domestic market. Thus, the cost price production the latest radio receiver "Meridian" has exceeded the retail price of a similar product foreign production in the domestic market in Ukraine.

On relationship between productivity and specialization by A. Smith emphasized "The amount of materials that can be processed by the same number of workers increases significantly with the growing division of work ...Preliminary accumulation of stock is necessary to achieve increasing in productivity, and such accumulation naturally leads to increased work productivity" [15, p. 306–307]. Namely the growth of specializations requires an increase in capital and therefore size of production. An example is large modern companies. So, "Phillips", such as S.P. Korolyov's PA has a wide range of production: from Research institutes, production of micro-electronics to a wide range of household goods. But the amount attract capital and size of production couldn't be comparable with the activities S.P. Korolyov's PA (PLC "Meridian").

The action economic laws directly depends on the political factor, i.e. the mechanism of influence on the market forces of elements of conscious influence [10]. It can be both the state and supranational structures (IMF, World Bank, transnational corporations). According to competition policy as a component of economic policy [16] it is a part of it in industry. Yu. Kindzersky mentions that one of the goals industrial policy may be realizing the potential competitive advantages of certain sectors that can not be realized over unequal starting conditions [17]. Appropriate competition policy in the field of industry in Ukraine was pursued, but it was destructive in nature and actually led to the destruction of much of the industrial potential, and above all high-tech.

In the 90s of the twentieth century competition policy was based on the practice of determining the level of monopolization based on the concentration of national production in certain markets. The task was to reduce the level of concentration by increasing the number of national producers of the same type of products and in such way to increase competition. However, such actions led to collapse in output. About it says A. Kostusev's study. "Highly competitive are the markets of different household consumer goods, TV and radio equipment. However, they are dominated by imported goods, and the production of televisions, radios, vacuum cleaners, etc. at Ukrainian enterprises has decreased ten times" [18, p. 235]. Further the author argues that competition of foreign manufacturers is felt much more strongly in mechanical engineering [18, p. 235], because such global giants as Siemens, General Electric, Samsung, Sony, etc. have entered the domestic market. Nothing like this and in such concentration has existed in Ukraine. But instead of strengthening the concentration and forming integrated structures from disparate enterprises, which could approach to some extent foreign competitors, it was begun the process of deconcentration of PA, RPA (Research and Production Association) and even individual structural units. The consequences were predictable – complete disorganization with subsequent destruction and liquidation of production. A. Kostusev writes about such consequences "During the demonopolization it was not possible to avoid mistakes ... when there was a rupture of technological chains, uncompetitive enterprises were coming" [18, p. 98].

Such a competition policy was completely contrary to world practice. For example, in the Netherlands, 100 % of the electronics industry is concentrated in Philips, in Sweden – Ericsson, in France – Thompson, but they are not considered monopolists, as there are other global manufacturers in the market. "Analysis of world experience allows us to conclude that the governments of most developed countries have taken a rather soft position on concentration, allowing national companies to act as monopolies and eliminate foreign competitors from the market" [19, p. 318–319].

If we follow the logic of D. Adzhemoglu, then the question arises: why the political factors that were in power in Ukraine failed to form a balanced competition policy that would promote the development rather than decline of the domestic economy, and there are several explanations for this phenomenon.

First, the postcolonial nature of political and economic establishment in Ukraine, which was dependent from Moscow and continued to be an instrument of its influence on economical and political situation in Ukraine. There are many examples with former "red" directors and leading specialists, who have stolen design and technological documentation for the production of critically important products, found themselves abroad – and not only in the Russian Federation. Similar destructive actions were observed at the level of central administration.

Secondly, the lack of understanding from the side central authorities the complexity of problems and challenges which arise on Ukrainian industry in its transition to the market in a non-established production system, and disparate unconnected with each other fragments single economic complex of the USSR. Indeed Ukraine lacked specialists who would systematically study the problems of industrial development and especially mechanical engineering (in fact, the only scientific institution that comprehensively and systematically studied the problems of its development was the Council for the Study of Productive Forces of Ukraine NAS of Ukraine, which is now disbanded) a third consisted of enterprises of the Military-Industrial Complex (MIC) of the USSR, namely: the electronics industry, instrumentation, rocket and space, aviation and shipbuilding. In the last decades of Soviet Ukraine significant part of the party-nomenclature elite in Ukraine was formed of representatives of the mining and metallurgical complex. And already in the conditions of independent Ukraine they continued to "take care" of this branch. What is worth only an economic experiment in ferrous metallurgy, which provided for tax cuts and other preferences. Although in developed countries support is provided primarily to new, high-tech, science-intensive industries. It is significant that the project of Comprehensive Program Scientific and Technological Progress in Mechanical Engineering, which provided for the relationship between research and production of relevant products in Ukraine (developed in 1993) was never adopted. In future, such programs were not developed at all. It is known that one of the most science-intensive industries is the electronics industry, and its development today determines the level of development of

many others – from computers and mobile communications to space technology and unmanned aerial vehicles and various military weapons. The project of Law on Support of the Electronic Industry was never adopted by the Verkhovna Rada of Ukraine. What is this as not a political factor? This strategically important industry is dead, more than 100 enterprises with 250 000 employees were liquidated.

Third, the nature of market reforms in Ukraine, which provided for maximum removal the state from influencing economic processes. In conditions when all countries protect their market high-tech products, the relevant Ukrainian markets have become available to competitors, it turned out to be paradoxical, at first sight, the situation when uncompetitive became the most high-tech industries especially engineering and the most technologically stay afloat and occupied a niche in international markets. However, this is a natural phenomenon every civilized state since the days of the mercantilists has contributed to the import raw materials and semi-finished products, restricting the import of finished products. Thus, most machine-building enterprises are faced with an unresolved problem when foreign markets are inaccessible and from the domestic they are gradually being replaced by foreign competitors. As a result, the share of mechanical engineering in Ukrainian industry decreased from 30 to 7 %.

The Ukrainian state acted in the opposite way, instead of using competition policy as a tool to balance the competitive conditions of domestic and foreign producers at least in the domestic market "Dominance of low-grade foreign goods, smuggling" In world history, there have been no cases when the state has achieved economic prosperity at a time when the consumer needs of its own people are met by imported goods… " [19].

A very important aspect in ensuring the balance of competitive conditions in Ukraine, compared to other countries, is access to cheap credit resources. The lending rate in commercial banks directly depends on the policy of the Central Bank of the country. In the *Table 2* it is shown the discount rates of different countries a condition on October 2021.

Table 2

Discount rates of the Central Banks of the world [20]

Land	Discount rate CB
Japan	–0.10
Eurozone	0.00
Norway	0.25
Australia	0.10
USA	0.00–0.25
Canada	0.25
Saudi Arabia	1.00
China	3.85
India	4.0
Brazil	5.25
Russia	6.75
Ukraine	8.5
Belarus	9.25
Turkey	18.0
Argentina	38.0

Of course, the lower discount rate, the lower lending rate will be, so it is not surprising that loans on 1.5 % are available in developed countries. In particular, in the EU the lending rate for business a condition on June 2021 is 1.47 % [21], while in Ukraine the average loan rate for business development reaches 18.32 % [22], which prevents free access of domestic enterprises to credit resources, and hence to stable functioning and development. Consider the factors that would help balance the competitive forces in Ukraine.

Use of own raw material base for production final products. Examples are:

- production of titanium, which is a critical component in the manufacture of missiles, aircraft and engines for them. Today, Ukraine imports these important products because the technological chain is limited by producing raw materials and semi-finished products – titanium sponge;
- production of fuel elements for nuclear power stations, focused on its own uranium warehouses. This will get away from dependence on world monopolists, especially on the Russian company "Twell";
- the available raw material base can be a factor in revival electronics industry and other high-tech industries. So, Ukraine has quite powerful deposits of rare earth minerals i.e niobium, tantalum, lithium. Niobium and tantalum are raw materials for production capacitors with unique properties which are used in military and space technology. Lithium is today a strategic raw material for production lithium-ion batteries, which is revolutionizing many areas from cars to household power tools. However, the "Subsoil User Investment Atlas", that was developed by the State Service of Geology and Subsoil of Ukraine, provides for attracting investment only in mining development. The statement of the head of this structure that this could be a driver of growth national economy is a sourse of great question. Thus, in the territory of Kyiv region there is Tarasiv deposit of titanium-zirconium ores. Over the last 10 years it was made attempts to attract private investors. But the problem is that this mine is located in densely populated region of Kyiv region (Bila Tserkva district) and is directly adjacent to the river Ros. Proposals to build a mining and processing plant here (the village of Mykhailivka) will cause long-term and irreversible consequences in the environmental sphere. Ore development is envisaged in an open way, and the beneficiation technology is extremely water-intensive, which will have an extremely negative impact on the Ros River, which is already in a critical condition. The consequence of such investment will be that the relatively environmentally friendly part of Kyiv region, which did not experience significant pollution after the Chornobyl accident, may turn into a zone of ecological disaster. Therefore, such investments provoke opposition from local authorities and the population. The problem is that investors do not take into account the side effects (externalities). This allows them to make imperfect environmental legislation that minimizes the effects of negative impact on the environment.

So what about the development of such deposits? First of all, if the development technology involves mining in a barbaric open way (and not somewhere in the desert, but on fertile chernozems, and these lands will forever fall out of agricultural use), then you need to use a more economical mining method, but it is more expensive. Therefore, a comprehensive assessment is needed within the framework of the relevant state program.

The development of mineral deposits has great risks, and the mass sale of such sites, which is proposed in the Investment Atlas of the subsoil user, may have only a short-term effect, but then there will be long-term and irreversible negative consequences. Therefore, the development of such deposits must be approached taking into account all possible consequences, including issues of national security and defense.

The state must guarantee access to local producers for public procurement. Of course, given Ukraine's international commitment to open tenders, it is extremely difficult for national producers to compete with powerful foreign companies that also have state support (including Chinese ones). Therefore, it is necessary to develop a mechanism based on international experience, which would guarantee a certain part of government orders for domestic producers.

It is unfortunate situation that for state (communal) cash it is bought up public transport of foreign production (buses, trolleybuses, trams) when we have appropriate unused national production facilities. The situation is similar with fire equipment, when there is its own manufacturer (plant "Pozhmashina"), but it is bought imported equipment.

Public procurement is extremely important for military equipment. The availability of appropriate weapons in its own army opens the prospect of entering the international market. Public procurement is especially important for high-tech products, which are just being born and are taking their first steps in the market. Ukraine's purchase of propellers in France with its own development based on Motor Sich engines that has become stepping stone for development its own helicopter industry. World practice shows that, despite international obligations and certain financial losses, preference is usually given to local producers. The story of the AN-70 military transport aircraft is illustrative. Despite the technical and economic advantages of this aircraft, it couldnät be entered the European market, as the EU decided to develop its own similar model – A400, which is still inferior technical characteristics to AN-70.

An important component of supporting a national producer is a thoughtful real investment policy. This is especially true for large infrastructure projects, in particular those related to road construction. Building roads is good, but what impact will it have on the national economy, in particular industry and its core, engineering? The practice of road construction has shown that the companies that do this use almost all construction and road equipment of foreign production. And why are there no Ukrainian KRAZ

dump trucks, road rollers, excavators of other equipment that Ukraine produces or has the potential for its production? That is, significant funds (more than 50 % of investments) go to the development foreign production. Thus, the picture is not very happy because of the production of high-tech products in Ukraine is declining, the country is becoming a global supplier of various raw materials another "banana country" and this is not the path to wealth but to poverty.

State control needs to be restored over the privatized strategic enterprises. The experience of privatization of such enterprises as Motor Sich, Azovmash, Avtokraz, Lviv Bus Plant and a number of others shows that the new owners often aimed not at the development of the enterprise, but at its destruction. This is especially evident in the example of the Lviv Bus Plant which is the largest in Ukraine and the USSR, where production was liquidated and unique equipment was exported by Russian owners to Russia. The experience of privatizing such enterprises in the UK shows that first state brought them out of the crisis and then they were privatized. No country in the world loses indirect control over such important enterprises, so the actions of the Ukrainian authorities regarding the strategic enterprise Motor Sich are absolutely justified. The experience of countries that have succeeded in the development of industry shows that this did not happen spontaneously but with the direct participation of the state. This was the case in Japan when powerful Sumitomo and Mitsui companies were created and this was the case in the Republic of Korea when the state encouraged the creation of large companies. "The experience of France is significant when the government created large national companies that held leading positions in a number of strategic areas, including the aviation industry, nuclear energy, microelectronics, and car building. To support such companies, state subsidies Research and Development state programs and public procurement systems were combined into a single complex. Also French government actively introduced nationalization as a tool for modernizing large private companies in addition to founding national companies what allowed them to become competitive in the world market. The implementation of large collaborative projects of the state and business was carried out thanks to a specially created for these purposes development bank" [3, p. 73].

Attempts have also been made in Ukraine to create powerful national companies. Thus, in the early 90’s scientists of the Council for the Study Productive Forces of Ukraine of the National Academy of Sciences of Ukraine, practitioners proposed to create such companies as "Ukrelekor" (Ukrainian Electronic Corporation), "Ukrverstatoinstrument", "Ukrsilhospmash" an association in energy and railway engineering. But such attempts were opposed by the Antimonopoly Committee which saw this as a manifestation of monopolization which was not true as Ukraine opened its markets to foreign competitors (Siemens, Samsung, Philips, etc.) whose potential was greater

than all enterprises of Ukraine in the relevant industries. Today the Ministry of Strategprom has finally been established in Ukraine which is engaged in reform, so there is hope for positive changes.

An important factor that would help balance the competitive opportunities for domestic producers is the *development of a promising strategy for economic development* that would reconcile the interests and capabilities of producers with the needs of the domestic market. This is especially important for high-tech projects that require long-term investment. There is such a practice in the world, in particular in Japan, which is called the "Japan Corporation", where the actions of government and business are aimed at achieving a common goal. Currently, there is a multi-vector movement of business and government in Ukraine. Thus, the state enterprise Ukrzaliznytsia at one time purchased Korean Hyundai trains when it has its own production of similar trains at the Kryukiv Carriage Plant. Today it is planned to sign a multibillion-dollar contract with the French company Alstom for the supply of a large batch of locomotives, although Ukraine has a fairly high potential in the field of railway and electrical engineering, which allows to create its own model with some international cooperation. Engineering bureau Pivdenne has developed the Kilchen anti-aircraft missile system, which is absolutely necessary for the Armed Forces, which is not inferior to the American "Patriot", but is 5 times cheaper, but has not received funding yet.

Conclusion. The main danger of imbalance of competitive opportunities is the long-term negative impact on the structure of the economy. The inability to compete due to the acquired competitive advantages, which are ultimately the result of certain intellectual efforts, pushes the country's economy in the direction of natural competitive advantages (land, minerals, other resources). These natural competitive advantages become the sphere of attraction of foreign technologies, machines, equipment, which are the result of creative efforts of human capital other countries. If the human capital of Ukraine didn't find its application it degrades, declines, and the remaining remains migrate abroad where the conditions for its use are much more attractive.

In order to equalize the competitive opportunities of domestic and foreign market participants, it is needed a set of asymmetric measures, as Ukraine today can't create identical conditions, in particular in the field of lending. An important element of such measures can be a purposeful public policy aimed at developing the sphere of attracting human capital. We are talking not only about scientists, engineers and technicians, but also about skilled workers in various specialties. The main place of attraction of these labor resources should be industry, especially mechanical engineering. Ukraine has all the opportunities for this i.e. its own raw material base of metals (from rare earths to non-ferrous and ferrous), developed metallurgy and not fully spent scientific and technical potential in this area yet.

To make such changes, it is necessary to change the situation when the main source of enrichment in Ukraine are raw materials industries, markets of natural monopolies (gas supply, electricity), supply and trade in imported goods (from cars to second-hand). Thus, the profitability of all activities in the mining industry and quarrying in 2020 was – 28 %, in processing – 4.4 %, including in mechanical engineering – 4.5 %. In January – March 2021, these indicators were 52.7 %, 7.7 %, 2.1 %, respectively [7]. Ensuring a balance of competitive opportunities for Ukrainian machine builders (who unlike raw materials do not receive a natural rent) should be an incentive to attract investment which is extremely necessary: after all, Ukraine has not created any high-tech production and technologically obsolete companies can not compete with modern foreign companies that come to our market. It is necessary to develop an effective mechanism for intersectoral flow of capital from raw materials to knowledge-intensive industries. It is advisable to study and implement the experience of countries that have made such a restructuring. This also applies to the taxation of natural rents, increasing the cost of environmental measures for the extraction of minerals.

The impetus for attracting private investment may be public investment in high-tech production. Such an example could be the implementation of the State program for the production of LED light sources, which was not implemented due to the termination of funding. Therefore, it is necessary to analyze this negative experience to prevent mistakes in the future.

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Романенко В., Лебедева Л. Баланс конкурентних умов в Україні: опції держави.

Постановка проблеми. *Досліджено проблему збалансування конкурентних можливостей між реальними і потенційними вітчизняними та іноземними виробниками промислової продукції в Україні. На основі статистичних даних проілюстровано актуальність саме цього аспекту конкуренції.*

Аналіз останніх досліджень і публікацій *виявив, що питання збалансування конкурентних можливостей хоч і розглядалося рядом вітчизняних науковців, проте остаточно не вирішено й потребує подальших досліджень.*

Метою *статті є обґрунтування теоретико-методичних засад та розроблення практичних рекомендацій щодо забезпечення балансу конкурентних умов в Україні.*

Матеріали та методи. *Для досягнення мети використано методи аналізу та синтезу, історичний та діалектичний. Дослідження побудовано на основі статистичних даних Державної служби статистики України, Євростату та інших даних у вільному доступі.*

Результати дослідження*. Проаналізовано історичний аспект виникнення сучасних ринкових відносин та становлення конкурентної політики, спрямованої на збалансування конкурентних умов. Надано характеристику ринкових реформ в Україні з позицій збалансування конкурентних сил в Україні. Розкрито положення, які впливали на формування конкурентної політики в Україні. Визначено чинники, що сприяли б збалансуванню конкурентних умов в Україні.*

Висновки. *Головною небезпекою незбалансованості конкурентних можливостей є довготривалий негативний вплив на структуру економіки. Запропоновано заходи для збалансування конкурентних умов підприємств обробної промисловості за рахунок міжгалузевого перетоку капіталів та залучення держави до інвестування у високотехнологічні проєкти.*

Ключові слова: конкуренція, баланс конкурентних умов, машинобудування, промислові підприємства, конкурентна політика держави.

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COMPLIANCE-STRATEGIZING OF ECONOMIC SECURITY OF THE BUSINESS IN DIGITALIZATION CONDITIONS*

The content, main tasks and functions of compliance-strategizing of economic security of business in the conditions of digitalization are revealed. Emphasis is placed on the need to consolidate and coordinate legal, economic, social and health aspects of security with compliance technologies and strategic planning of business processes, which will help ensure the competitiveness and risk protection of business, as well as on digital platforms. It is noted that it is necessary to separate resource potential as a part of corporate strategic compliance. An important area of further development of compliance-strategizing – "change management" – is considered.

Keywords: compliance, strategizing, economic security, compliance risks, economic security model, digitization, digital technologies, hospitality entity.

Background. The beginning of the XXI century marked by global challenges for the development of economic entities: financial crises, political conflicts, environmental catastrophes, the viral pandemic, which caused revolutionary changes in the public consciousness of business, reformatting their concepts and development strategies, intensified the need to respond to new threats to economic security and digitization of the socio-economic sphere**.**

The crisis has significantly affected the activities of the hotel and restaurant business, minimizing their opportunities and financial and economic potential. Therefore, hotels and restaurants need to actively adapt existing management mechanisms to the challenges and threats of economic security, the implementation of innovative, in particular, digital technologies for business security and its strengthening in the new economic realities. In this sense, the symbiosis of compliance technologies and strategic planning

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of business processes will transform the processes of strategy, ensure their effectiveness and efficiency in terms of forming strategic prospects for business development and maintaining economic positions in the market. Therefore, the study of technologies and processes of compliance strategy in ensuring the economic security of hospitality is relevant. The process of compliance-strategizing requires theoretical and applied substantiation, development of methodological approaches to its implementation in the practice of hospitality entities (HE).

Analysis of recent research and publications. The issue of compliance-strategy of economic security of hospitality entities is determined by multifacetedness and covers the areas of compliance control, strategic planning and security technology in the context of total digitalization. Therefore, science and practice to determine the prospects for development require research of applied and analytical experience, scientific concepts and methods of their practical implementation on this range of issues. Thus, the experience of compliance as a concept of business reset in accordance with the requirements of the external environment is reflected in the scientific works of O. Vovk, A. Kovalchuk, P. Andrew [1]; as one of the effective methods of risk management – in the studies of V. Valiyev [2]; as an element of internal corporate governance – in N. Moskalenko's research [3], etc.

Regarding the theory and practice of strategizing, research covers mostly the institutional level and considers it as an additional link of power in addition to the legislative and executive function (T. Baker, D. Ceres, S. Spencer [4]; W. Bauer, W. Eremin [5]). The regional aspect of strategizing is revealed in the publications of A. Kasych, N. Kukharska, V. Chemerys [6–8]. Strategy as a competitive advantage of enterprises is the subject of V. Starbak's [9], S. Datsyuk's research [10].

At the same time, economic security as a complementary economic process is formed, detailed and contains debatable provisions in the focus of anti-crisis research, in particular in the scientific works of S. Dovbny, N. Gichova, E. Kalashnikov, S. Mityakova, E. Morozova, R. Nurey Rauf, O. Skiri, P. Tarlow, W. Zhu, W. San, K. Xiang [11–18]. Digitization as a determinant of the emergence of new risks and threats in the field of business management is the subject of research carried out by T. Coldwell, E. Savelieva, A. Kareva, V. Zeng, M. Kotni, S. Mukherjee, O. Oluvatimi, M. Damiani, E. Bertino [19–24]. At the same time, in the hotel sector, certain aspects of economic security have been revealed by such scientists as: L. Malyuk, L. Varypayeva, A. Sakhirova, I. Sosnovska, O. Yudina [26–29].

The results of the analysis of available scientific sources show that the issues of formation of the terminological basis of compliance-strategic economic security, substantive characteristics of its structural elements, the processes of economic security in the digital space of hospitality remain insufficiently explored. Addressing these issues requires a holistic approach that will transform existing economic security provisions with new economic challenges.

These scientific studies confirm the importance and relevance of developing theoretical, methodological and applied principles of compliance-strategy of economic security of the HE on a systemic basis.

The **aim** of the article is to operationalize the content of economic security of hospitality entities and the formation of a conceptual model for the implementation of compliance strategy as a holistic multilevel poly-object mechanism in the context of digitalization.

Materials and methods. The study of the essence and economic security of HE, the peculiarities of the formation of its components is carried out using general scientific research methods: abstraction, concretization, systematization, decomposition, analytical, logical and generalizations. Methods of analysis and synthesis, forecasting, cognitive modeling are used to substantiate the theoretical aspects of the concept and construction of a complementary model of economic security of HE. The method of paired molecular docking was used to determine the architectonics of the benchmarks of economic security HRBE. The information base of the study was scientific works in the field of compliance, strategic management, economic security; online analytics and official statistical sources.

Results. The global crisis has caused economic, informational and epidemiological challenges for hospitality entities: reduced activity in consumer behavior in the market of hotel and restaurant services, limited financial opportunities and strategic potential of economic entities have become catalysts for finding new management technologies capable of reengineering and management audit of business processes, focus on strategic development and ensuring efficiency. An effective tool for the systematic management of the hospitality entity is compliance strategy as a set of actions that not only provides positive prospects for development, but also is able to generate management decisions aimed at overcoming strategic challenges and implementing global trends, including digital technologies.

To adequately understand the principles and functions of compliance strategy, we analyze the practical application of the key definition. Compliance-strategying in the semantic context comes from English from the terms "compliance" – agreement, compliance, compliance with rules, standards, laws and "strategizing" – a well-thought-out detailed plan for success [30]. Compliance in the legal practice of Ukraine is first defined in the Guidelines for improving corporate governance in Ukrainian banks as the need to know, understand and comply with all requirements of Ukrainian legislation, regulations, provisions and rules, internal policies, standards and codes of the bank [31]. In today's business environment, "compliance" is synonymous with good and efficient management and, according to the International Compliance Association, is the competence of the organization to act in accordance with established external and internal rules, standards, requirements and restrictions [32]. At the same time, the practice of compliance with economic entities allowed to identify it as a multi-aspect management activity that takes into account the following structural components: antitrust, anti-corruption, contractual, health and safety, digital security,

personal data protection, insider and confidential information; fraud prevention; environmental, ethical, informational, corporate, tax, combating money laundering and legalization of income, regulatory, reputational, technical, conflict of interest avoidance, financial, etc. [1; 26; 33]. At the same time, the HE compliance system covers an autonomous set of these components in order to ensure compliance with legal norms, corporate documents and internal standards of management and operations.

Thus, compliance transforms the HE management system and determines from the standpoint the ability to provide: resilience in changing conditions (including in an unfavorable, uncertain and risky, capable of radical digital transformations economic environment); compliance with legal and corporate conditions and rules of doing business; opportunities to form mutually beneficial strategic relationships with micro- and macro-entities, which is an important model designer of strategic behavior of HE.

In general, the component of compliance fits well into the functionality of economic security as a tool to ensure sustainable development, protection from adverse factors and conditions of the external and internal environment. The compliance function promotes the standardization of management decisions in accordance with established regulations, laws, rules, procedures, etc., which prevents financial and economic threats and sanctions from stakeholders and counterparties, including public authorities. In addition, active communication with staff and society orients the HE to ensure social responsibility – compliance with integrity, ethics, support of socio-economic infrastructure of the regions, environmental norms and rules. The system of compliance functions and processes is complemented by the quality of services and service as one of the targets of strategic management and an important criterion in the implementation of consumer choice. Thus, compliance formalizes a set of functions and processes in the HE management system (*Figure 1*).

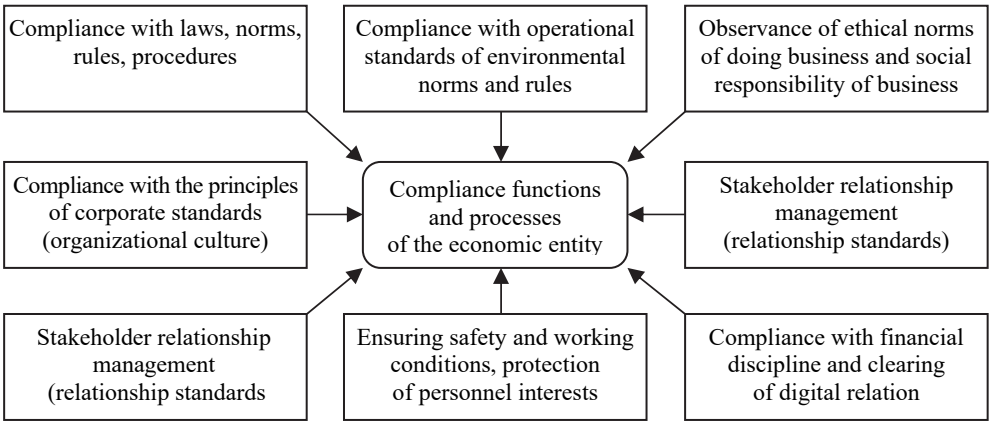

Figure 1. Functional and process structuring of compliance

Source: developed by the authors.

Particular attention should be paid to clearing, which involves control over settlement transactions for hotel and restaurant and other services, goods and securities in accordance with bilateral obligations. At present, this term should be extended to digital relations, given its origin from English "Clearing – to clear, to bring clarity" [30]. In this case, we propose to treat the clearing of digital relations as business processes related to the monitoring and implementation of economic relations in distribution systems, customer-oriented technologies and electronic payments (including blockchain), as well as control over the qualitative completion of digital operations, systematic feedback of processes on digital platforms.The digital market includes not only websites and brand books, marketplaces (distributors and commercial and financial platforms), but also social networks, blogs, messenger channels (chatbots, telegram channels, YouTube streams, etc.), so it is necessary to adhere to quality and etiquette, financial discipline in maintaining relations, which affects the reputation of the hotel and restaurant business.

These functions and processes (*Figure 1*) cover behavioral attitudes and processes at the internal, micro and macro levels of the economic system and relations between actors, taking into account their characteristics, interests, needs and capabilities, which requires targeted management actions in developing goals and measures to achieve the goals of each of the participants – strategic planning (*strategizing)*. *Strategizing* will ensure the economic security of the enterprise through the use of available resources and opportunities, the formation of the ability to navigate the market situation, diagnose their own economic potential, development prospects and strategic interests of the external environment.

In research on strategic management strategizing is presented as a systemic paradigm of the strategic management process, which includes strategic goal setting, forecasting, formation of alternative scenarios, design, programming, planning, communicative foresighting, situation analysis and consequences, strategy implementation and controlling [7]. On the other hand, it is a way of multidimensional (multifocal) self-management of development [10] based on constructive dialogue and cooperation with stakeholders [27], which creates a rational system to support strategic actions [9]. Thus, strategizing outlines strategic guidelines that are supported by economic resources and management competencies of development (monitoring, planning, accounting and auditing, communications management, controlling, etc.) of the business.

In *Table* scientific approaches to determining and ensuring compliance with strategy are summarized.

Table

Compatible and meaningful systematization of approaches to understanding of compliance strategy

Approach	Content	Methods and technologies of implementation	Limitation
Ensuring information and financial security	Information protection and prevention of fraud	Construction of a two-level information protection system: - internal security of the enterprise; - responsibility and vigilance of staff for work in the market and with partners	Does not cover the whole set of external and internal threats to the enterprise, reactive control mechanisms
Forecasting and planning	Protection of the internal system and creation of favorable economic conditions	Use of advanced management and information technologies	It is used if there is a strategy, plan, resource availability.
Authoritative	Providing systems for the protection of personnel, financial and material resources, information	Business process management of the enterprise	Excessive administration and documentation of processes, low adaptation to new external challenges
Financial	Ensuring financial security and stability	Implementation of effective mechanisms of enterprise financial security	Narrow understanding of compliance
Adaptive	The ability to respond preventively to threats or to adapt to changing conditions	Methods and means of situational approach	Reactive nature of the response, insufficient consideration of internal factors
Resource-functional	Ensuring the development of resource and functional potential	Methods and technologies of strategic management, use of methodologies of situational and resource approaches	Complexity, high cost, the need to develop corporate standards
Strategic	Optimization of the corporate resources use, competitive advantages formation	Research of indicators set of economic activity on a complex of functional components of activity	Full and wide coverage of processes, focus on economic efficiency (leveling of environmental and social aspects)
Authorial	Focus on internal opportunities use in the external environment, ensuring economic security	Monitoring changes in the external environment, identifying economic opportunities and benefits, the use of digital and innovative technologies, establishing strategic partnerships with the environment; control of potential, opportunities, risks, threats, costs, losses	Management mechanisms are focused on the internal balancing of business processes, resources, interests and the formation of competitive advantages

Source: developed by the authors according to [7–11; 28; 33–35].

The generalization of these scientific approaches to the substantive understanding of compliance-strategizing makes it possible to identify its key characteristics, which should be taken as a basis for its contamination and the definition of the main portfolio of driver mechanisms:

- formation of vision, which is transformed into the development of strategic guidelines for the development of the HE;
- defining of formalized and restrictive rules, conditions and procedures, as well as the ability of the HE to form a "critical mass" of the necessary resource potential and ensure organizational competencies;
- effectometry of HE management and its financial capabilities;
- development of marketing potential, competitive advantages and digital opportunities;
- mentoring of the economic system as a process of mentoring and supervision of HE in order to identify problems and growth points that

provide competency management and force the object (business, project, processes) to successful implementation [25];

• compliance control of potential, opportunities, risks, threats, costs, losses, etc.

Within compliance strategizing acquires a new conceptual content, which reveals new opportunities for relationship management based on digital technologies, compliance technologies and risk management. At the same time, the strategic component in the economic security management system creates conditions for the foresight of risks and threats, when the effectiveness of the HE management system is ensured, outposts are built to protect against financial and reputational losses and gain a competitive position.

Thus, *compliance-strategizing* is proposed to be considered as a policy for the formation and controlled implementation of strategic guidelines for the development of economic entities, which are determined by formal conditions, resource capabilities, operational procedures, external and internal constraints (legislation, regulations, socio-economic, environmental, legal and corporate culture).

In the outlined semantic plane, compliance-strategizing of economic security requires filling the content of the concept and strategy of development of the economic entity with components that will provide protection against external threats and internal risks – *economic security*. In general, comparative economics according to scientific sources [11; 27; 28; 34] interprets it as a state of protection of the economic potential of the entity and the interests of its owners and stakeholders from possible dangers, threats and stresses, as well as ensures stable and sustainable operation and effective development in accordance with its strategic goals. To implement compliance strategy, we will decompose the SG economic security system by security objects *(Figure 2).*

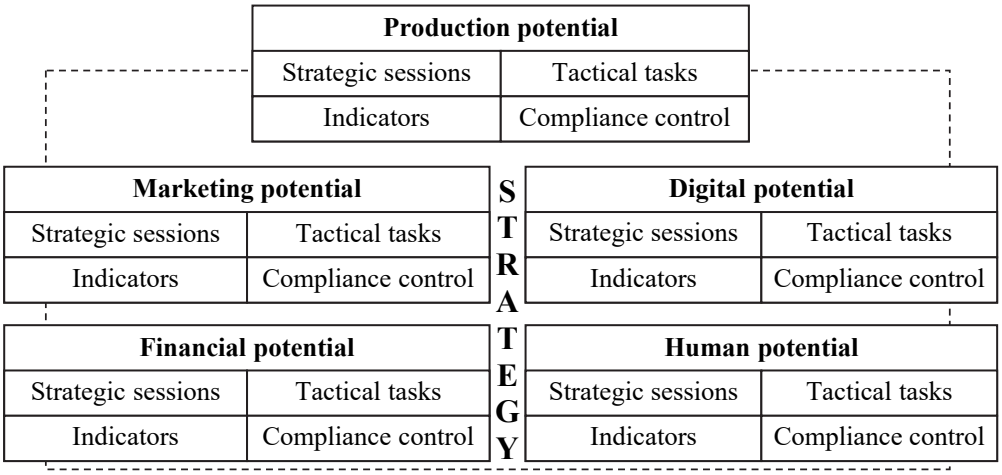

Figure 2. Compliance-strategizing decomposition of the economic security system of the hospitality entity

Source: developed by the authors according to [8; 33; 35].

Within the framework of compliance-strategic economic security*, the production and operational potential* includes diagnostics of material and technical resources usage of HE from the standpoint of creating preconditions for strategic development: technical, technological and physical conditions for service provision, quality of service and facility facilitation. At the same time, tactical tasks include work on assessing the condition of facilities, operational characteristics, service delivery processes, usage of material and technical base, property and equipment, level of service quality and their compliance with regulatory and consumer requirements, and include effectometry of business processes and individual production operations.

Marketing and digital (analytical and informational) potential is formed at the area of non-material assets of the HE. The marketing potential will serve to the commercial sphere, wheree strategic decision are focused on the formation of positive reactions of consumers and partners to environmental challenges. It forms a sales system provided by distribution; marketing activities; relationship management, consumer behavior and impressions; creating a positive image and corporate brand.

In turn, *digital (information-analytical) potential* is associated with the accumulation of positive experience (partnerships, regular customers, analytical findings, customers and partners databases) and intellectual property. Strategic sessions in this perspective are aimed at information protection, implementation of digital technologies, development of information systems and ensuring a positive reputation of HE, its customer orientation. Tactical tasks determine management decisions to ensure the interests of management, owners and stakeholders.

Financial potential plays a key role, because the capabilities of all other potentials depend on its capacity. Strategic sessions focus on the formation and development of unique internal capital, developmental organizational competencies, effective human capital and investment usage. It was thanks to the financial reserves that most HE were able to overcome the global financial crises and the consequences of the coronavirus pandemic. Tactical tasks in this case are financial flows management, monitoring of threshold values of financial state indicators and reducing the likelihood of bankruptcy.

Human potential has become the central object of management attention, as its competence characteristics and devotion define competitiveness and prospects of the HE. Strategic sessions are focused on creating favorable working conditions, implementation of team work principles, progressive HR technologies, mentoring, corporate culture and motivation to productive work. At the same time, tactical tasks are focused on identifying stresses and professional burnout, preventing conflicts, low-quality processes and operations, and individualizing staff rewards.

Based on the key elements of economic potential, the policy of economic security can be represented as s a complementary model based on the concept of target coverage of the hospitality entities (*Figure 3*).

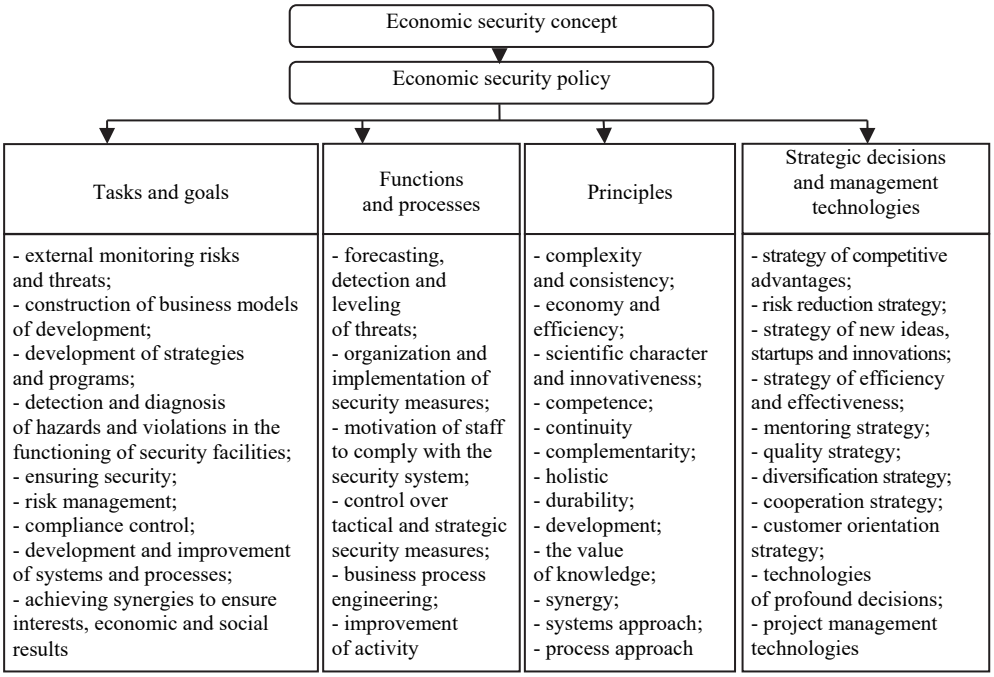

Figure 3. Complementary model of the economic security concept of the hospitality entity

Source: developed by the authors according [8; 20; 33; 35; 36].

The main task is to anticipate and rehabilitate risks and possible threats that cause a crisis, as well as the implementation of anti-crisis actions based on the development and implementation of organizational, technical, economic, legal, environmental and social measures.

Thus, compliance strategizing will be aimed at diagnosing economic security according to the following *parameters:*

- assessment of threats and potentials of the external environment. The evaluation methodology contains the tools of strategic management and marketing, in particular: SWOT-analysis, PEST-analysis, SPACE-analysis, SNW-analysis, VMOST-analysis, etc. [37];
- analysis of the marketing environment and potential: diagnostics of the sales system, distribution and its separate channels; website, brand book, mobile applications, social pages and blogs; loyalty systems; customer orientation and competitiveness, etc., using a multi-vector resource-functional model of economic security, assessment of the competitive status of the firm, an integrated assessment of compliance with the company's interests [11; 34];
- study of the internal environment and its potentials (probability of bankruptcy, financial condition and investment and innovation development, management quality, facilitation level and ajilization of business processes, quality of material and technical base and processes, information security and protection of intellectual property, HR-security, etc.) through indicators of efficiency, effectiveness, achievement of goals, business activity, probability of bankruptcy according to the Altman model, etc.; application

of the three-dimensional diagnostics model of economic security [16], as well as the use of a balanced scorecard (BSC), a system of responsibility indicators (Associability Scorecard – *ASC*), a model of business advantage (Business Excellence Model – *BEM*);

• the effectiveness of security costs (return on investment, reputational costs, level of risk protection, impact on the overall financial condition, etc.).

Diagnostic compliance allows the management of economic security to rely on permissible safety criteria (standards of normality) – threshold values of indicators and achievement of the expectations of personnel and stakeholders, as well as the interests of owners and management.

Analytical studies of today's realities mark the external environment of Ukrainian HE as quite unstable. Thus, the results of surveys of service entities [36] processed in accordance with the Methodology for calculating indicators of business expectations [38] show radical negative changes in the business situation for development prospects in the second half of 2014 – first half of 2021 from the standpoint of these entities. In the study, with the maximum possible score of 100 points for Ukrainian hotel business entities, the highest risk assessment was in the first half of 2017 and the lowest in 2020; in general, the average score for the period is negative – "–5 points" (*Figure 4*).

Changes in the business situation for strategic development are negatively characterized by restaurant business entities.

Another area of surveys of service entities [31] demonstrates the dynamics of the change in demand for services (sales volume of services) (*Figure 5*).

In general, we note a fairly low level of expectations of hotel and restaurant business entities (HRBE) in Ukraine regarding the positive and rapid change of the business situation in the field of Horek and the growth of demand for services. Thus, the average expectation of changes in demand for hotel services in this period is 4 points, and in the restaurant business –16 points. Moreover, if in the hotel business in the middle of 2021 expectations about the development prospects have already gained positive trends: "+24 points", for the restaurant business still remain negative: "–24 points".

Deterministic indicators of expectations still remain at a relatively low level, therefore, the high relevance and the need to expand the mechanisms for ensuring the economic security of the HRBE are argued. Accordingly, at the macro-, mega- levels, it manifests itself through:

• development of hotel and restaurant product branding, destinations, tourist facilities and business;

• ensuring customer orientation of the hotel and restaurant business;

• their predominant functioning in the format of integrated structures of business networks with the consolidation of processes and resources;

• multifaceted cooperation and involvement of stakeholders in business processes (including partners, suppliers, consumers, etc.);

• establishing institutional support through the formation of public-private partnership projects, cooperation with local communities and public organizations;

• performance of social, ecological functions in regions and destinations by subjects, etc.

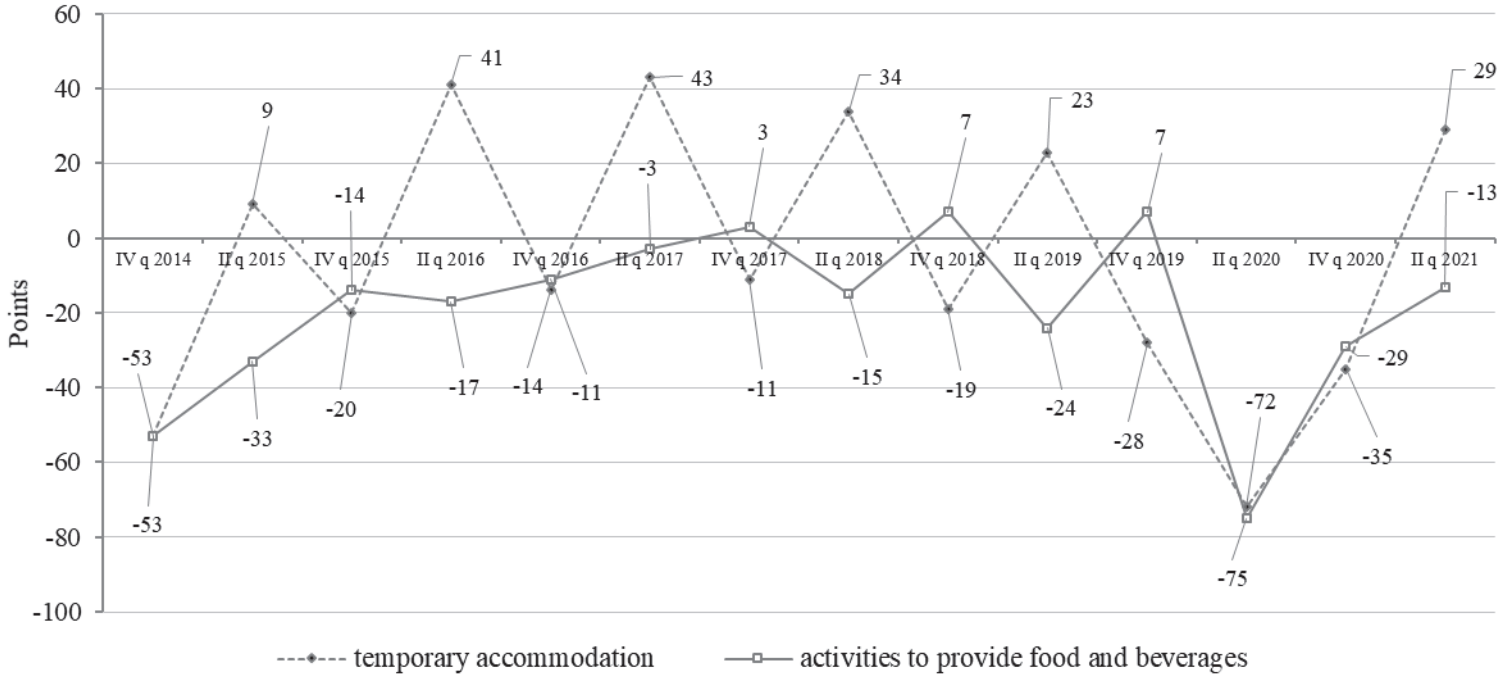

Figure 4. Dynamics of the sustainability indicator of the business situation for the hotel and restaurant business in Ukraine in the second half of 2014 – first half of 2021 (according to sociological surveys)

Source: developed by the authors according to [36].

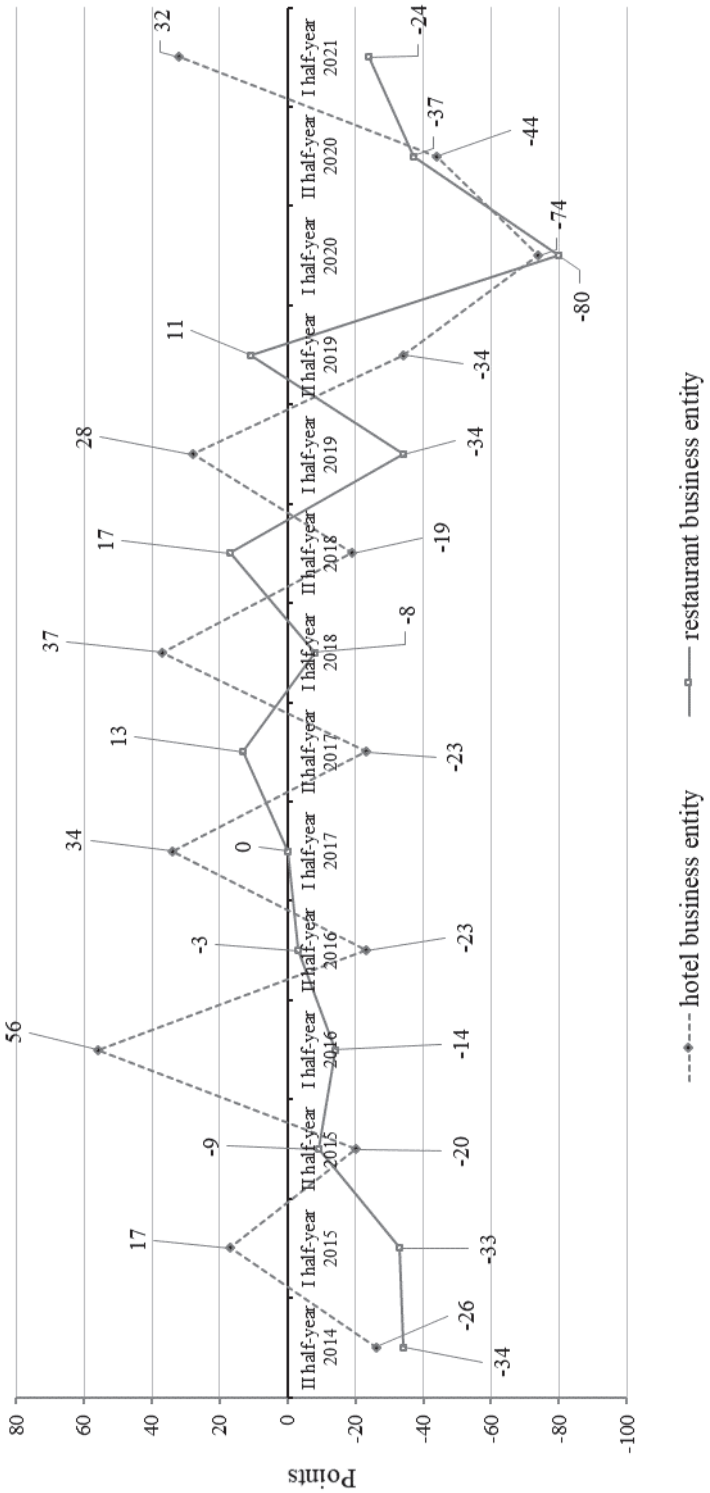

Figure 5. Dynamics of change in demand for services (sales volume of services) of hotel and restaurant business entities in Ukraine, second half of 2014 – first half of 2021 (according to the results of surveys)

Source: developed by the authors according to [36].

Therefore, we propose for practical testing a binary reference model of economic security management, which forms two levels of compliance strategizing (*Figure 6*).

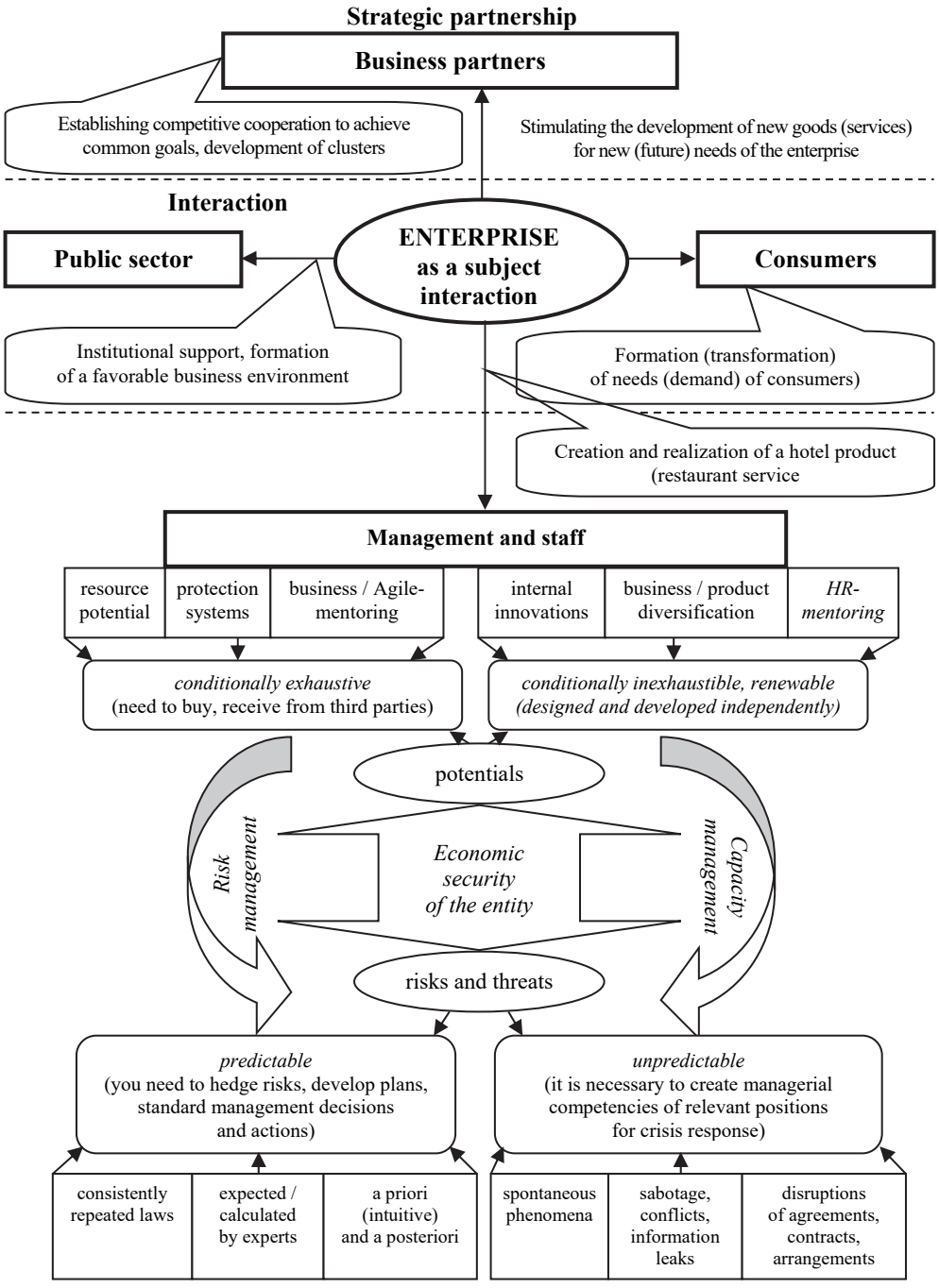

Figure 6. Binary reference model of economic security management of the hospitality entity

Source: developed by the authors.

The external level includes external participants that form the environment of the hotel business entity (partners, government, consumers) and require mechanisms of cooperation on the basis of strategic partnership. *The internal level* reveals the content of the management activities of HRBE, contains the mechanisms of formation of management influences and a set of tasks for economic security management, is implemented through the functions and processes of compliance based on the reference model.

The reference model (see *Figure 6*) allows us to consider economic security management from the standpoint of structural-systemic, process and situational approaches as a trajectory of economic entities interaction based on the transformation of development parameters and through the reflection of business processes.

To implement the binary reference model of economic security management, it is advisable to follow the principles of the situational approach by applying the method of paired molecular docking – defining the architectonics of economic security landmarks (immanent components, molecules): potentials and risks with regard to others. The main purpose of docking is to obtain optimal (according to the established criteria) spatial structures [39], namely, the result is a molecular modeling of the economic security management system as a purposeful structure modification of immanent elements in dynamics to establish "structure-property" dependencies.

In our study, the application of this methodology is due to the need to study the internal potential and resources of the business entity and security elements management ("molecules") – potentials and risks, threats to opportunities, modification of management influences on objects under new environmental conditions. When building a model of economic security compliance, it is important to be guided by the situation: strategic guidelines are fixed as positive (potentials) and negative (risks and threats) elements, and their characteristics are modified around them, forming a comprehensive model of economic security management. The proposed model best reflects the theoretical essence of economic security of the HE and its ability to function effectively in an unstable economic environment.

Thus, compliance-strategy of economic security allows SG to focus on the most important objects of management, which are modified to take into account changing environmental conditions, promising digital innovations and consumers behavior, partners, investors, the public sector.

Thus, the compliance strategizing of economic security allows the HE to focus on the most important management objects that are modified taking into account changing environmental conditions, promising digital innovations and consumers behavior, partners, investors, and the public sector.

Conclusion. The conceptualization of compliance-strateging of economic security of HE in the conditions of digitalization is especially actualized in difficult conditions of instability and uncertainty of external environment increasing owing to influence of epidemiological crisis. Compliance-strategizing of economic security is considered from the standpoint of transformation of the HE management system to ensure risk resilience in an

unfavorable economic environment by complying with legal and corporate conditions and rules of doing business, opportunities to form mutually beneficial strategic relationships with partners and consumers, balancing internal business processes.

Processing of theoretical aspects of compliance, strateging and economic security makes it possible to model the management system of economic security of the hospitality entity on important internal objects of managerial influences, taking into account strategic guidelines.

Economic and epidemiological crises, which formed external risks associated with business closures, business reorganizations or business process reengineering, have provoked a reset of strategic behavior, the development actualization and implementation of economic security management policies.

The instability and uncertainty of the business environment encourage hospitality market participants to seek unique strategies that form the outposts of economic security.

New challenges of economic realities require modernization of economic security, which is a complementary model for diagnosing the entity environment and its management system, taking into account external aspects – relationship management with partners, consumers, business owners and other stakeholders to protect interests based on capacity management, risks and threats in operational activities and strategic perspective, taking into account digital trends and tendencies.

The binary reference model of HE economic security management allowed to form strategic guidelines of economic security management through compliance-strategizing, which are subject to compliance and require additional professional competencies of managers.

Compliance-based economic security strategizing involves the implementation of a certain configuration of managerial influences on external and internal objects of economic HRBE (security elements ("molecules") – potential, risks, threats to opportunities), which is the key to successful crisis management.

Thus, compliance-strategizing is an effective concept of economic security management, which takes into account the opportunities and prospects of economic development, forms an effective mechanism for confronting risks and threats, radical digital transformations. Deepening of diagnostics level of hospitality entities economic security and concept development of change management as a direction of anti-crisis compliance strategy in a pandemic plateau and digital relations are promising for future research .

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Бовш Л., Босовська М., Охріменко А. Комплаєнс-стратегування економічної безпеки бізнесу в умовах цифровізації.

***Постановка проблеми**. Тривала криза вітчизняної економіки, поглиблена пандемією, спричинила економічну депресію, що негативно позначається на фінансових результатах суб'єктів господарювання. Нестабільні та невизначені умови бізнес-середовища потребують створення економічними суб'єктами стратегічних форпостів, які орієнтуються на розвиток діяльності відповідно до певних норм, процедур, правил та стандартів. Тому актуальним завданням є концептуалізація теоретичних основ комплаєнс-стратегування в умовах кризи для забезпечення економічної безпеки суб'єктів, зокрема у сфері гостинності.*

***Метою** статті є операціоналізація змісту економічної безпеки суб'єктів гостинності та формування концептуальної моделі реалізації комплаєнс-стратегування як цілісного багаторівневого поліоб'єктного механізму в умовах цифровізації.*

***Матеріали та методи**. Дослідження сутності економічної безпеки бізнесу та її складових здійснювалось із застосуванням загальнонаукових методів: узагальнення, абстрагування та аналізу, що забезпечило обґрунтування теоретичних аспектів та аргументацію комплементарної моделі економічної безпеки суб'єкта гостинності. Інформаційною базою дослідження стали наукові праці у сфері комплаєнсу, стратегічного управління, економічної безпеки; онлайн-аналітика та офіційні статистичні джерела.*

***Результати дослідження**. Теоретичний аналіз наукових джерел дав змогу сформулювати операційні дефініції й функції комплаєнсу, які є маркерами стратегування. Здійснено декомпозицію комплаєнс-стратегування системи економічної безпеки, що складає діагностичний базис суб'єкта гостинності. За елементами економічного потенціалу охарактеризовано політику економічної безпеки та запропоновано концептуальну модель. Надано методичні та практичні рекомендації щодо впровадження бінарної референтної моделі управління економічною безпекою суб'єктів гостинності.*

Результати дослідження свідчать про необхідність системного та безперервного управління економічною безпекою, а запропонована методологія спрощує розуміння цього процесу до конкретних цілей і дій.

***Висновки**. В умовах повторюваних криз та ескалації пандемії комплаєнс-стратегування економічної безпеки є важливим інструментом прогнозування. Дослідження охоплює науково обґрунтовані результати, які комплексно вирішують важливу теоретико-прикладну проблему ефективного управління економічною безпекою суб'єктів гостинності.*

Ключові слова: комплаєнс, стратегування, економічна безпека, комплаєнс-ризики, модель економічної безпеки, цифровізація, цифрові технології, суб'єкт гостинності.

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STATE AND CIVIL SOCIETY: DIGITAL REALITY

There are analysed the modern tendencies of changes of communicative processes under the influence of digitalization in the interaction of institutes of civil society and the state. Based on the analysis of the interaction between the state and civil society in digital reality, there has been studied the process of transformation of public authorities. There are determined main directions and problems of transformation. There is emphasis on identifying more effective forms of feedback between public authorities and civil society.

Keywords: state, civil society institutions, information and communication technologies, digital reality, public authority.

Background. Digital reality is changing not only civil society and its institutions, but also public authorities, especially in the face of its state bodies, and also forms new models of interaction between these organisations and civil society. In international documents, it is the national, regional and local authorities that play a leading role in the development of e-government, the analysis of challenges (risks) and the measures developed [1].

The basis of the information and communication mechanism of interaction between the state and civil society are the followings: the system of information support for cooperation of the main actors in this field, technology transfer; introduction of informative Internet resources of the relevant content, which allows government entities to receive up-to-date information online, contributes to the formation of a positive image of Ukraine in the international arena.

Accordingly, the application of the information and communication mechanism of interaction between the state and civil society is aimed at improving the efficiency of public administration, ensuring open government, negotiating process in communication within public authorities, local governments, the public and the private sector using interactive methods of interaction and social networks.

One of the ways to optimize the communicative space of public authorities is to use virtual forms of publicity and the introduction of e-democracy, which will help to involve citizens in public administration.

Implementation of communicative actions is done with the use of electronic means of communication, namely political Internet communicators, channels and technical means of information, e-government tools.

E-government is a way of organizing public authority through systems of local information networks and segments of the global information network, which ensures the functioning of certain bodies in real time and makes the most simple and accessible daily communication of citizens with the authorities. Hence, it provides that any person via the Internet can request public authorities to obtain the necessary information, and most importantly – to obtain administrative services [2].

Active implementation of information technologies in recent years has led to "digitalization" of administrative processes to improve quality (especially in terms of reducing the time of service and increasing the transparency of relevant processes, as well as involving customers in assessing the quality of services using Internet resources) [3, p. 15].

Analysis of recent research and publications. There are reflected problems of developing communicative processes of the mechanism of interaction between the state and civil society institutions, and understanding the process of institutionalization of the latter in the works of the following foreign and domestic scientists: T. Belskaya, D. Bilokopitova, N. Dragomiretskaya, O. Kachny, D. Kislov, V. Korzhenko, A. Matiychik, L. Melnyk, O. Parkhomenko-Kutsevil, I. Parubchak, V. Yeganov, N. Shoturma, D. Fedorkin [2–15] and others.

However, there requires further research the creation of the necessary conditions for more effective public participation in decision-making and state and regional policy improvement in the field of social services in various areas such as: unemployment, improving of the education system; developing an enabling environment for sustainable civil society; formation of a comprehensive mechanism for ensuring the interaction of the state and civil society.

The **aim** of this article is a systematic analysis, theoretical justification and development of proposals for improving communication processes in the mechanism of interaction between the state and civil society institutions in the context of digitalization.

Materials and methods. The empirical basis of the study consists of laws and regulations, statistical collections, materials of the State Statistics Service of Ukraine, publications of domestic and foreign scholars on public administration, philosophy, history, law, economics and political science.

Theoretical and methodological basis for the implementation of the research goal were general and special methods: abstract-logical (during the analysis of scientific sources), search and bibliographic (during theoretical analysis, systematization of printed and electronic sources on this type of interaction), analysis and synthesis (for definition of the essence of the main categories), comparative analysis (to summarize the experience of effective interaction between the state and civil society in developed countries and

identify opportunities for its implementation in Ukraine), prognostic (in the process of forecasting, generalization of independent characteristics of processed materials to formulate conclusions, proposals improvement of communicative processes in the mechanism of interaction between the state and civil society institutions in the context of digitalization).

Results. The most relevant topics in the world are the following: the introduction of information and communication technologies (ICT) in the activities of public authorities, the transition of humanity to new levels of obtaining and storing information, electronic document management, and other related topics. They are the subject of research of domestic and foreign experts. Interest concerning them does not decrease over time, nor does the further development of technologies that provide new and new opportunities, in particular, to minimize obstacles to society's interaction with government [4, p. 25].

Today, ICT has become a vital stimulus for the development of not only the world economy very quickly – now it is almost impossible to find an area where information technology is not used. Modern society is simply overflowing with streams of information that need to be processed. In the world civilization there is an information revolution caused by explosive development of information and telecommunication technologies. Already today in information and communication networks such arrays of information circulate, which exceed all available traditional resources in many times. Information technologies, especially networks, act as a catalyst for social processes, accelerating communication between individuals and groups, social institutions both within one country and internationally. They are able not only to change social processes, but also to transform their essence and create new ones. Modern media form a kind of global information space, which is not divided by national borders. This aspect is very important because it provides an expanded form of human communication, being a non-traditional institution of direct communication with the public [5, p. 125].

New ICTs have enabled scientists to expand this list with so-called virtual decentralization, the essence of which is to use the Internet to create information and provide access to various services to the public and businesses. The research shows that virtual decentralization is the most effective tool for controlling corruption and the shadow economy over other types of decentralization. Provision of public services on the basis of the Internet can be much cheaper, will be able to adapt very quickly to changes (increasing the scale of supply of services), as well as have a greater geographical coverage [6, p. 23]. Among the many options for communication technologies, the Internet has become the undisputed leader in recent years. It is an important element of the information infrastructure of the world community and today is a democratic and fast-growing system of access to the electorate. From the point of view of Western and some domestic experts, it will really become the main means of ensuring the openness of government

to the general public in the coming years [7, p. 59–62]. Networks related to human influence on social processes are social networks. In the network society, the role and importance of public organizations, local communities, which have the opportunity to address a much wider range of vital issues and, at the same time, enter the global network of Internet communications with other communities to develop and implement socially significant solutions. This issue has become especially relevant right now – during the implementation of decentralization reform in Ukraine.

Other important activities are implemented in the information and network environment, in particular, the search for opportunities to improve the quality of human life without harming the environment, the formation of new reasonable human needs, finding ways and directions to implement them, discussion and online voting on certain design decisions, etc. [8].

Improving the information and communication mechanism of interaction between the state and civil society in the context of digitalization requires the introduction of modern information technologies by establishing internal organizational communications and control over official information flows through online components (online mediation, online surveys, research, etc.) and such innovative "public funding" instruments, such as crowdfunding and crowdsourcing, which meet modern European requirements as well as help ensure public access to solve all kinds of problems faced by the state, business, and society as a whole with the assistance of the latest information technologies.

One of the effective tools in the interaction of the state with civil society is an electronic mechanism of consultative interaction, including e-consultation, which increases public confidence in the decisions and actions of the government [9, p. 22–27]. The content of this tool, designed to implement problem-oriented interactions, is that public authorities involve representatives of professional communities and reputable professionals in the non-governmental sector, i.e. public organizations. To implement such a tool, at the authorities there are created permanent or temporary public advisory and expert councils or commissions specializing in the most important problematic areas of activity in the area of responsibility of these bodies. Such consultative structures are usually formed on a tripartite basis from responsible government officials, representatives of non-governmental professional associations and scientific organizations, and reputable experts. The work of the consultative tool of interaction can positively influence the achievement of mutual understanding and partnership between public authorities and civil society in solving difficult to understand professionally oriented problems only in case such work is open and informationally transparent, and its results are objectively publicly covered.

Another potentially useful way of improving citizen participation in influencing policy-making is electronic petitions (e-petitions) – appeals – a form of collective expression of will and influence on other actors

in public relations (eg, political leaders, government agencies and NGOs), which is able to perform the function of regulation (soft law), lobbying, promotion of ideas and interests.

An effective tool for electronic petitions has been working in Ukraine since August 28, 2015. Initially, the portal of electronic petitions was launched on the website of the President of Ukraine, and today this form can be found on the websites of local councils of the vast majority of settlements in Ukraine. Berdyansk became one of the first cities where this project was launched as a pilot one. Analysis of its use shows the effectiveness at the local community level. For example, among the electronic appeals to the Kyiv City Council, the majority concerns the organization of local transport, renaming of streets, landscaping, etc., i.e. exactly what the local authorities should do [10, p. 119–124].

High efficiency, communication, strengthening the influence of state authorities and local self-government by civil society will have a combination of several tools – *e-petitions*, creating an appropriate information campaign on the websites of NGOs and their social media accounts and direct actions to support the need to make a decision at a certain defined area.

E-decision making is one aspect of the advisory model of involving citizens in making important strategic decisions on state and local development through the possibility of discussing the decisions of the city council, parliament through forums, blogs and chats.

E-rulemaking allows citizens to influence the adoption of regulations. This e-government tool combines key elements of democratic influence in decision-making that are inherent in e-consultation and e-voting. The tool of e-rule-making within the procedural model performs a number of functions [11, p. 6–11]:

strengthening democratic legitimacy, which can be achieved through:

- better public understanding of the rule-making process;
- increasing the quality and quantity of public comments in the process of rule-making;
- making the commenting process more interactive and improving its wide discussion;
- increasing the capacity of more democratic controlled institutions to oversee the regulatory process;
- improving decisions taken in terms of assessing the impact of the regulatory act on problem solving and improving the financial efficiency of regulatory policy;

reduction of administrative costs;

strengthening the level of compliance with established rules.

Online mediation expands the possibilities of mediators in disputes between individuals and organizations that are distant from each other, or due to other reasons (such as disability) can not participate directly in mediation procedures, as well as in situations where the significance

of the dispute does not justify personal presence mediator. Mediation is a form of alternative dispute resolution (ADR) that allows you to resolve conflicts in various spheres of human life. There are a number of Regional Mediation Groups in Ukraine, which have merged into the Association of Mediation Groups of Ukraine and the Ukrainian Institute for Peace and Understanding, as well as the National Mediation and Conciliation Service, established to resolve labor disputes and resolve conflicts [12].

The next modern tool of interaction between the state and civil society is the *electronic parliament* – a legislature that adheres to the rules and standards of transparency, openness, accessibility, accountability, quality of its functions through the use of modern ICT. The main task of the e-parliament is to provide citizens with free access to the documents considered by parliamentarians and their opinion on a particular issue, which will show the openness and transparency of the legislature.

One of the forms of public activity is the so-called "public financing" (*crowdfunding*) – mass fundraising via the Internet for a local high-tech production project, which has already passed network marketing and gained a sufficient number of consumer votes. The use of information networks by civil society creates public electronic monitoring of the state of the environment in a given territory, the results of which are available to every citizen. The method of crowdfunding can, for example, seek the removal from office of officials who do not respond to collective appeals. For Ukraine, the use of network information resources opens the possibility for public monitoring to combat corruption, to create a system of permanent public control over the transparent activities of the state apparatus, which should be a legal and legitimate information and network control superstructure created by social construction [13, p. 239–249].

Crowdsourcing is a tool of the e-democracy advisory model. Today, it is actively developing as a model for solving any kind of problems and challenges facing both the state and society as a whole. There are many ways to use crowdsourcing, which differ both in subject and type of result, and in the category of involvement of people. Of course, crowdsourcing would not be possible without the Internet – it is through the network that people can coordinate their actions, discuss ways to solve problems and gather in communities. No one can force you to do what you don't want to do. At the same time, it is thanks to volunteers that the largest projects are usually implemented. And only when the work is divided into clear stages, the community will be able to implement the project [14].

Thus, ICTs disseminate information, discuss political issues, involve individuals and groups more widely, increase the transparency and accounttability of democratic institutions and processes, and engage citizens in ways that benefit democracy and society. It is important to remember that for e-democracy, it is democracy that is primary, not the electronic component, while the essence of e-government is in the use of ICT in optimizing the interaction of public authorities and providing administrative services to consumers.

However, the use of ICT is not enough to optimize the existing mechanisms of citizen participation in the management of public affairs. This means that it is not enough to limit e-democracy by enshrining in law the principle of technological neutrality in the implementation of citizens' rights to participate in the management of public affairs with appropriate state guarantees for its provision. Instead, it is necessary to review the list of mechanisms provided by law for participation in the management of public affairs and expand it, adding maximum benefit, efficiency and reliability with the help of advanced modern technologies.

Despite the measures taken by the state, the problems of interaction between civil society and public authorities in the digital reality (and not only) remained:

- the introduction of digital ICT does not go hand in hand with the development of digital democracy; officially adopted measures for its development are largely declarative in nature and are implemented formally;
- the e-state emphasizes the provision of public services, not the development of e-democracy;
- there is no systematic interaction of public authorities and civil society institutions, effective mechanisms for such interaction are not created, and existing in many cases are ineffective [15, p. 356–362].

However, the use of ICT is not enough to optimize the existing mechanisms of citizen participation in the management of public affairs. This means that it is not enough to limit e-democracy by enshrining in law the principle of technological neutrality in the implementation of citizens' rights to participate in the management of public affairs with appropriate state guarantees for its provision. Instead, it is necessary to review the list of mechanisms provided by law for participation in the management of public affairs and expand it, adding maximum benefit, efficiency and reliability with the help of advanced modern technologies.

Conclusion. The concept of the e-state should be considered not as a technocratic project, but as a project aimed at further development of the principles of democracy, in which electronic technologies are aimed at the fullest implementation of these principles; it is impossible to reduce the electronic state only to the processes of digitalization of state and municipal services – this is only one of the forms of interaction between public authorities and citizens, civil society. In assessing the quality of public administration, it is advisable to include indicators of the practice of interaction between public authorities and civil society institutions in the digital environment. It should be noted that digital technologies themselves open up great opportunities for the implementation of e-government on the principles of democracy. But whether public authorities and civil society will take advantage of such opportunities depends not on the ICTs themselves, but on the political decisions made, the development of this society. However, it can be argued that with the development of ICT, horizontal links are becoming increasingly important, able to effectively influence the functioning and further development of government.

Given that the problem of e-participation is a cornerstone of information democracy, the interaction between government and the public is an important indicator of democracy and the legitimacy of governance. Today, ICT is one of the most important factors in stimulating economic growth and development of civil society, employment, increasing competition and, as a result, helping to bridge the "digital divide". However, it can already be stated that the level of technological development determines the economic potential of a country and the quality of life of its citizens, as well as the role and place of this country in global society, the scale and prospects of its economic and political integration with the world.

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Динник І. Держава та громадянське суспільство: цифрова реальність.

Постановка проблеми. *Цифрова реальність змінює не лише громадянське суспільство та його інститути, а й державну владу, насамперед, в особі органів державної влади, а також формує нові моделі взаємодії цих структур із громадянським суспільством.*

Метою *статті є системний аналіз, теоретичне обґрунтування та розробка пропозицій щодо вдосконалення комунікаційних процесів у механізмі взаємодії держави та інститутів громадянського суспільства в умовах сучасної цифровізації.*

Матеріали та методи*. Емпіричну основу дослідження становили законодавчі та нормативні акти, статистичні збірники та матеріали Державної служби статистики України, публікації вітчизняних та зарубіжних науковців з питань державного управління, філософії, історії, права, економіки та політології. Теоретико-методологічною базою для реалізації мети дослідження були загальні та спеціальні методи: абстрактно-логічний, пошуково-бібліографічний, аналізу і синтезу, порівняльний аналіз; прогностичний.*

Результати дослідження. *Інформаційно-комунікаційні технології сприяють поширенню інформації, обговоренню політичних питань, широкій демократичній участі окремих осіб і груп, більшій прозорості та підзвітності демократичних інституцій і процесів, залучають громадян у спосіб, що приносить користь демократії та суспільству. Важливо пам'ятати, що для електронної демократії первинною є демократія, тоді як суть електронного урядування полягає у використанні ІКТ для оптимізації взаємодії органів державної влади та надання адміністративних послуг споживачам.*

Висновки*. Концепцію електронної держави слід розглядати не як технократичний проєкт, а як проєкт, спрямований на подальший розвиток принципів демократії, в якому електронні технології спрямовані на якнайповнішу реалізацію цих принципів. Електронну державу неможливо звести лише до процесів цифровізації державних та комунальних послуг – це лише одна з форм взаємодії органів державної влади та громадян, громадянського суспільства.*

Ключові слова: держава, інститути громадянського суспільства, інформаційно-комунікаційні технології (ІКТ), цифрова реальність, публічна влада.

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PROCEDURAL AND ACCOUNTING TRANSFORMATION AS AN IMPERATIVE STAGE OF DIGITAL AUDIT

The greatest success is achieved by the one
who has the best information
Benjamin Disraeli

The current state and prospects of digital audit implementation are studied. The content and specifics of the process of accounting transformation, its stages, features of implementation in terms of exchange of large arrays of information are highlighted. The main problems that create microprocesses of manual accounting and administration in the framework of outdated methods of transmission of accounting data are revealed. It is proved that the implemented automation of microprocesses, starting from the level of information exchange, is the primary but imperative stage of the transition to digital audit.

Keywords: audit, digital audit, accounting, transformation, Big data, Big 4.

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Background. The transformation of digital audit is a gradual, evolutionary transition from the traditional performance of audit procedures to a comprehensive analysis and evaluation of relevant information using software that allows you to visualize the necessary data. It is on the basis of visualized information that the auditor identifies problematic, high-risk, dangerous areas of accounting and information support of the entity and performs a set of actions in accordance with International Standards for Quality Control, Auditing, Review, Other Assurance and Related Services of the International Federation of Accountants and Methodology of Auditing firms [1].

Modern implementation of audit procedures in practice is carried out in Microsoft Office software (Excel, Word, PowerPoint, Access, etc.). Like any other MS Office software, it has its own clearly defined limitations. Modern auditing is characterized by a significant, much larger quantitative increase in the amount of information that requires appropriate changes in the methods of its processing. The concept of digital audit provides for the procedural support of the auditor in a rapid (with a different order of numbers) growth of accounting information: such an increase in information will occur from 33 zetabytes* in 2018 to estimated 175 zetabytes in 2025 [2], i.e. 5.3 times. For example, research by the SAAS Scout portal shows that the basis for information growth is the online segment (*Figure 1*).

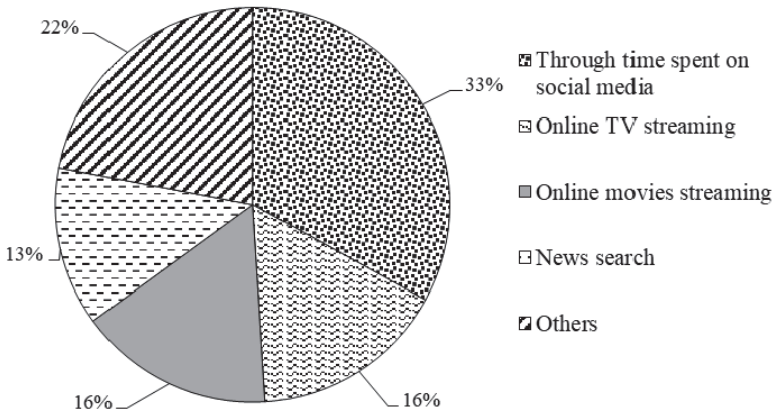

Figure 1. The reasons for the growth of Big data in the economy

Source: compiled by the authors on the basis of [3].

The increase in the amount of non-financial information in all categories leads to an increase in the amount of financial accounting data both in general and at the level of microtransactions. If in the past decades the phenomenon was unique to banks, now a comparable amount of credentials

* *zetabyte = 1024 exabytes, 1 exabyte = 1024 petabytes, 1 petabyte = 1024 terabytes. 175 zetabytes = ~ 188 billion terabytes*

is transferred to non-banking institutions, as the number of accounts, accounts, bonus programs, zones and types of monetization on streaming services, etc. increases. All such non-financial innovations are reflected in the accounting systems and data tested by auditors.

From the auditor's point of view, all segments, except "Other" (see *Figure 1*), form the basis for billing systems, which include audit procedures and IT control testing procedures, and financial accounting data are included in the "Other" category, which is 22 % of the total growth of Big data.

These trends in practice form a significant problem, which significantly reduces the key indicator of the audit – its quality. Due to the progressive increase in the amount of information during the audit procedures in this traditional software package, the effectiveness of the work of a particular auditor, and, consequently, the audit in general, is gradually decreesing. The efficiency and quality of the audit directly depends on the procedural optimization of processes. For example, one MS Excel sheet contains 1 048 576 rows. This clearly limits the amount of information on a single sheet. According to these restrictions, it is logical to place information on the second, third and subsequent sheets. This approach can be used in cases where the client of the audit company provides information in the amount of 5-6 million lines. Despite the large volume of one excel file, in the future it can be actively used, in particular, to transfer via MS Outlook, process and more. At the same time, in cases where a larger amount of information is provided, it is no longer possible to use this software, which creates the problem of choosing other programs for receiving and processing data.

It is important to emphasize that companies that meet the criteria of "large", and especially those whose activities are in the public interest, in accordance with the amendments to the Law of Ukraine "On Accounting" [4], must order *a mandatory audit*. Such companies can generate an extremely large amount of accounting information – Big data. This can be seen, for example, by analyzing the EY Transparency Report for 2018-2019 in Ukraine [5; 6], including information on large companies that have ordered audit services from EY. According to the latest trends of the world and national economies, such companies are in the focus of interest of information users and, as a result, auditors. Exclusively from this list, the companies that can generate large amounts of data should include banks, JSC "Ukrainian Railways", PJSC "Ukrtelecom", PJSC "Concern Galnaftogaz" and others. These are usually business entities whose activities are in the public interest – and they produce a large amount of accounting data. Thus, JSC "Ukrainian Railways" daily sells a set of services related to the transportation of goods and passengers, PJSC "Ukrtelecom", which provides communication services, has a billing system to account for the package of services, and PJSC "Concern Galnaftogaz" (petrol stations OKKO) sells fuel and related products to retailers on a daily basis, which is equivalent to retail. Based on the nature

of the business of these companies, accounting for inventory, cost, revenue, taxes can number in the tens of millions of lines, so the total database (journal or other data register), depending on the company's accounting system, may consist of 100 and more than a million lines.

Considering the above arguments, audit firms are forced to look for alternative methods of receiving information, accounting and database processing, which allows to clearly identify the problem that requires appropriate research: finding the optimal combination of new software and human resources to perform audit procedures and methods of accounting for documents and customer information.

Analysis of recent research and publications. Despite the fact that a significant number of articles, monographs, etc. are devoted to the issues of general audit methodology of financial statements by scholars and practitioners, the problems of organization and methodology of digital audit are almost not covered today due to its innovation. Thus, the results of the analysis of scientific research of such scientists as N. Petrenko [7], I. Shevchenko [8], D. Dolbneva [9], I. Podik [10] show that the process of transforming auditing into such an innovative type as digital auditing is not fully disclosed. Besides, the researchers did not investigate and, accordingly, did not assess the impact of the growth of accounting information on audit procedures.

Analysis of the fundamental works of leading scientists in the field of audit (R. Adams, M. Bilukha, G. Davydov, F. Defliz, V. Bondar, E. Mnykh, V. Rudnytsky, D. Sushko, F. Defliz, J. Robertson, etc.) does not provide answers to the ways how to solve audit problems associated with working in conditions of Big data. The auditor now needs new audit procedures. At the time of publication of the works of these scientists, the problem of the transition of digital audit using large arrays of information Big data – was irrelevant. However, there is a significant amount of scientific work of Ukrainian and foreign scientists on the methods, principles, classification of Big data, but without reference to the audit.

Thus, the scientific study of Big data issues in auditing, the transition to digital auditing in general and the study of such administrative issues as document accounting and customer information in particular is insufficient. As a result, there is a need to analyze the current practical achievements of commercial companies, which will form the basis for further basic research and the formation of the concept of digital audit.

The **aim** of the study is to analyze and professionally assess the theoretical and practical approaches to the transformation of the method of transmission of accounting data during the transition to digital audit.

The object of analysis is the initial stage of the process of transition from traditional (classic) audit of financial statements to digital audit for companies that work with large amounts of information - Big data.

Materials and methods. The information base of the article is the work of domestic and foreign scientists in the field of accounting, auditing,

Big data, as well as open data of the companies of the Big Four (Big 4) – the leaders of modern auditing. In the process of solving these problems, general scientific and special methods of scientific cognition are used: observation, comparative and complex analysis, induction, synthesis, graphical, generalization.

Results. Well-known international leaders in the field of audit and assurance services are the Big Four. Their tools and methods as leading practices are being implemented around the world. Companies have a large number of branches and representative offices in different countries and the appropriate resources to transform operating activities to maintain a sufficient level of profitability. An additional argument for choosing Big 4 as a research base is their resource base, which allows for the audit of companies that can produce Big data, which is the driving force behind the transition from traditional to digital auditing. In addition, their media activities and publicity allow them to better understand the basic tools they use for conduction both traditional and digital audits, unlike other companies.

Among the Big 4 companies in Ukraine, it is appropriate for the needs of scientific research to choose EY as a company that is a leader in open data, as well as internal systems of audit procedures. The basis is the changes that this company implements in its operating activities in terms of providing assurance services for the company's financial statements.

In general, the process of auditing the company's financial statements is a clear algorithm of actions: establishing business relationships – obtainning information – processing information – providing an audit report (conclusion) and other products. It is important that the transition to digital audit is not limited to changes in the performance of audit procedures, but covers all its imperative stages, starting with the establishment of business relationships. For the needs of research in accordance with the established purpose, it is necessary to emphasize the receipt and processing of information as an imperative component of digital audit.

Procedurally, if we break down the microprocesses of obtaining customer data, we can see that from the moment of gradual receipt of data, there is additional administration of information flow by staff and its subsequent manual accounting, a certain classification and codification. Manual accounting involves maintaining a status file (usually by Excel) for received and unreceived requests for electronic and paper information. To further use the information obtained, you must perform one of *two types of search*:

• the end user of the client's credentials searches for data among the data already existing and sorted in the cloud environment / server and downloads it to the local computer;

• the responsible person receives all electronic correspondence and, in accordance with the audit plan and the distributed responsibilities of the current project, at his / her own discretion, searches for the end user of the information and keeps records in the status file.

Both approaches have significant disadvantages, as the user communicates with the information manually. At the same time, there are significant shortcomings and obstacles to the information processing process.

Disaggregation information. A significant number of received e-mails with files due to the limitations of mail servers (by default, the attachment to the e-mail can not exceed 20 MB), which, in turn, sprays and reduces its quality.

Repeated requests. When occurs the next events like returing of e-mail to sender for clarification, adding of missing documents etc, search for actual versions of necessary documents takes more time.

Time lags. Delay in receiving information due to the search for the final executor or search on the server for the necessary information by the executor.

Generalizing all the process of reception of the information in the block diagram, in the traditional audit it is at the stage of "manual compilation of information on the local disk (for sending to the end user) or on server (for search by the end user)" process variations and these problems begin to occur (*Figure 2*).

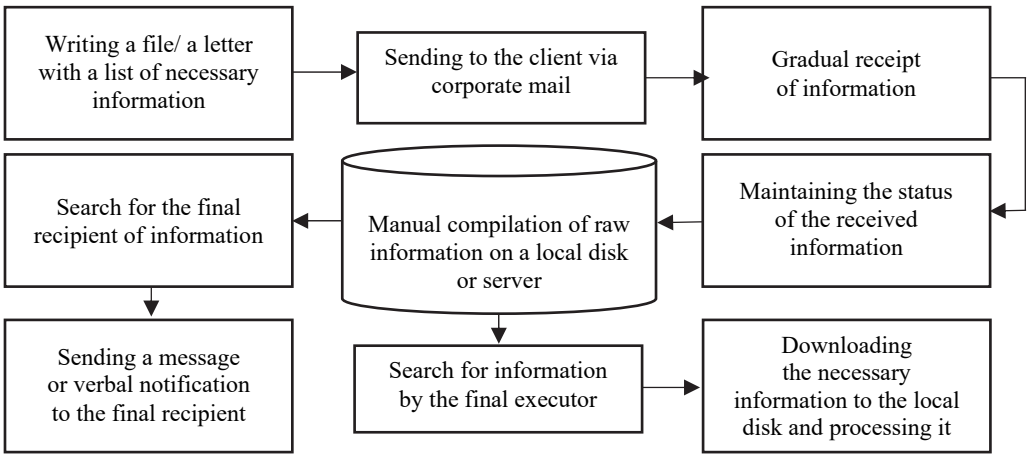

Figure 2. Receipt of information by the auditor from the client under the conditions of traditional audit

Source: developed by the authors.

These problems cause a chain of the following, derivatives, unnecessary actions:

• the client's disaggregation of information for forwarding leads auditors to search for opportunities to reduce the amount of information provided, additional time to collect portions of information in a single register to perform audit procedures, etc.;

• repeated requests may be erroneous, as the responsible person in the electronic flow may skip certain emails (or enter updated data in the status file). Manual sorting and accounting leads to calls from the client with complaints about the effectiveness of the auditors;

• time lags are a consequence of previous problems. Searching for information, repeated inquiries, customer calls and inquiries with complaints and grievances negatively affect the general attitude of accountants on the part of the client to the auditors, delay responses and provide information on current inquiries.

Administering the flow of information in the process of auditing large, socially significant, "large" clients in cases where the audit team has a significant number of people, worsens the client's margins, as increases the time spent on the project. Given that EY has in its business portfolio such large companies, groups, etc., as Ukrainian Railways, Khlibprom, Ukrtelecom, Siemens, Coca Cola, Walmart, Alphabet (Google), Amazon, etc. [11], the issue of microprocesses and accounting is extremely relevant. A similar situation is observed in other companies, both the Big Four and non-Big 4 companies.

The process of transformation is the implementation of IT solutions that cause the departure from the use of MS Outlook as a basic mass software, which involves a large number of micro-operations (see *Figure 2*) to obtain information in other IT solutions, such as internally developed software software or third-party programs written to order that are directly integrated into the software environment where the audit procedures are performed and / or documented.

The transformation of the process of obtaining information in EY took place using two tools My EY – Client Portal and EY Canvas [12; 13]. After the implementation of the client platform and its connection to the electronic database of procedures and document management system, the process covers three main stages (*Figure 3*).

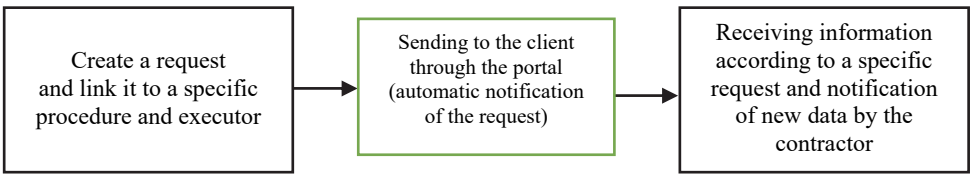

Figure 3. Receiving information from the client through the MY EY portal

Source: developed by the authors based on [13].

Administration and automation of input data and accounting allowed to solve these problems, to avoid small routine operations presented in *Figure 2*. This helps the audit team focus on performing the actual procedures, rather than on ancillary microprocesses that affect the timing of the audit and the relationship with the client. The recipient of the request (on the part of the client) no longer needs to monitor the status and check mail for new requests, decide how to transfer "heavy" files, and the executor of procedures does not need to search for the received information.

The process of obtaining information is built into the operating environment in such a way that the client can send the information himself without waiting for a request from the audit team. An additional feature is to set the connection of a specific audit procedure, such as "Bank confirmation" or "Cut-off on Trade receivables", to a specific request.

The introduction of digital audit without optimizing the process of obtaining information should be considered inappropriate, because conducting a digital audit involves obtaining a comprehensive understanding of the processes, based on visualized in the graphs, tables of information using specialized tools. During the digital audit, the task of the specialist is to study the anomalies in the visualized data, which will consist of a description of the situation, requests for comments from the client, testing primary documents or searching for data in open sources, which will achieve the required level of professional confidence. reflection in the audit report (conclusion). Otherwise, there is a question of efficient use of time for accounting and administration of information that affects the timing of the project, repeated requests for information already provided but not identified by auditors, indicates to the client the disorganization of work, which affects the formation of sustainable business relationships and accountant-auditor relationship.

Other Big 4 companies use resembling platforms. In particular, Deloitte Connect [14], PWC Connect [15; 16], KPMG Clara [17]. At the same time, each of these leading international audit companies is trying to make it convenient to account for and administer audit documents and information for both professionals and clients.

The results of the analysis of Big 4 presentation videos [14–17] and the description of customer interaction systems (see *Figure 3*) show that they all have a similar scheme of operation, but all three differ in that they may or may not have a function that allows you to synchronize documents in accordance with the request with a specific procedure in the operating environment for the performance of audit procedures and visual design. The peculiarity of synchronization makes information accounting systems more convenient, and this allows employees to save more time than specialists in firms-competitors.

An additional factor that influences the construction of a new process of accounting for documents and information, as introduced in the Big Four companies, is the protection of information, avoidance of sending to erroneous recipients, which violates the confidentiality of information, and the ability to transfer large databases, in cases cannot connect to the client's accounting systems.

Conclusion. The common method of transferring work files to auditors via MS Outlook is one that does not meet the needs of either the audit firm's specialists or their clients, as the accounting and administration of the received information in a company without new systems is inefficient. This negatively affects the timing of the audit and the relationship between the performers – the client's accountants who provide information and the auditors who receive it; it also creates an additional burden on staff.

Auditors need to take into account the fact that the growth rate of data will continue to increase, and this requires a response from audit companies

to transform traditional (classical) audit into digital audit. In order for the transformation to be successful, it is necessary to make changes not only in the organization and methodology, but also in the microprocesses that accompany the audit procedures. One of such processes is the processing of electronic correspondence and accounting of documents. An analysis of the current approach from a practical point of view has shown that the administration of data sent by the client is inefficient and needs to be changed. The study selected Big 4 companies, which are key to the audit industry in the global market.

Summarizing the experience of Big 4 companies, non-Big 4 companies should adopt existing practices to improve electronic document management, document and information accounting, and reduce the number of microprocesses, as this is one of the first points of transformation to the digital audit that is coming. to change the audit in its traditional sense.

The results of the analysis indicate the absence of theoretical achievements in fundamental works. Considering this, the current practical steps of digital audit implementation at the lowest level of the transformation process in Big 4 companies are described, further development of digital audit at the level of data exchange between accountants and auditors in the field of information protection and avoidance of operator errors.

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Назарова К., Бондаренко К. Процедурно-облікова трансформація як імперативний етап digital аудиту.

Постановка проблеми. *Поточний обмін даними аудиту здійснюється через MS Office. Аналіз тенденцій розвитку технологій Big data показує значне збільшення обсягів уже зараз та у найближчій перспективі. Зростання нефінансових даних спричиняє збільшення фінансових. Аудиторські компанії, переважно Велика четвірка, переходять від класичного аудиту до digital аудиту. Оскільки процес трансформації має велику кількість рівнів, основою цієї статті обрано найнижчий – рівень рутинних дій обміну даними між аудитором та бухгалтером.*

Метою *дослідження є аналіз та професійна оцінка теоретичних і практичних підходів до трансформації способу передання облікових даних під час переходу до digital аудиту.*

Матеріали та методи. *Інформаційною базою статті є публікації вітчизняних та зарубіжних вчених у галузі бухгалтерського обліку й аудиту та великих даних, а також відкриті дані компаній Великої четвірки. Застосовано методи спостереження, систематизації, графіки, аналізу та синтезу.*

Результати дослідження. *Результати аналізу інформації про компанії Великої четвірки та опис систем взаємодії свідчать, що всі вони виконали трансформацію найнижчого рівня та намагаються інтегрувати вхідні дані від клієнта до інструментів програми аудиту без додаткового адміністрування вручну через MS Office.*

Висновки. *Аудиторам необхідно враховувати, що темпи зростання обсягів даних у найближчі роки збільшаться, що вимагає відповідного реагування аудиторських компаній на перетворення традиційного (класичного) аудиту на цифровий. Для того, щоб трансформація була успішною, необхідно вносити зміни не лише в методологію та підходи, а й у мікропроцеси, які супроводжують аудиторські процедури.*

Ключові слова: аудит, *digital* аудит, облік, трансформація, *Big data*, Велика четвірка (*Big 4*).

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ECONOMIC POTENTIAL OF THE TRADE ENTERPRISE: STRUCTURAL ASPECT

The main approaches to the classification of influencing factors of the enterprise are studied in this article. The most important types of factors that affect the activities of the enterprise are identified. The existing approaches are fully systematized. The authors offer their vision of the environment of interrelation of the main influencing factors on the economic potential.

Keywords: factors, classification of factors, enterprise, economic potential.

Background. The economic potential of the enterprise is a complex system of elements that are inextricably linked with each other, with environmental conditions, certain internal features and the general condition of the enterprise. Therefore, it is important to identify and assess the impact of factors on the development of economic potential, which will create a mechanism for adaptation to both negative and positive factors for the environment of the enterprise. After all, the identification and analysis of factors are the basis of effective risk management of the enterprise. They help to ensure the stability of the enterprise, and identify development opportunities.

Analysis of recent research and publications. Many scientists have been devoted their work to the issue of determining the influence of various factors of the enterprise, for example, K. Vaskivska, L. Lozinska, Yu. Galimuk, O. Yemelyanov, O. Kurinna, Ja. Sekirozh, I. Nagorna, O. Bezruchko [1–6] and others. Because the set of factors for each enterprise is unique. They can be differently classified, structured, and evaluated. This is due to the diversity of scientific views.

The **aim** of the article is to study and systematize approaches to the classification of influencing factors on the economic potential of the enterprise.

Materials and methods. The information base of the study is scientific articles, monographs, thesis and other works, which identify the influencing factors of the company and its economic potential. During the study, methods of analysis and synthesis, generalization, comparison were used, which systematized the main scientific approaches to the classification of influencing factors on the economic potential of the enterprise.

Results. The most common classification of factors in the scientific literature is their division into factors of internal and external environments. But each scientist has his vision of their content and characteristics. Most authors who use this classification, include everything related to the activities of the state and society, their impact on the activities of enterprises and market conditions to the factors of the external environment. Everything related to the activities of the enterprise and regulated by the enterprise is internal [1–3; 7–10].

N. Kashchena and J. Sekirozh have a similar view, proposing to divide the influencing factors of the enterprise into exogenous (external, independent on the enterprise) and endogenous (internal, dependent on the enterprise). Exogenous include general economic, market external and others. While endogenous are organizational, production and technological, financial and economic, social, market internal and investment factors [4, p. 254; 11, p. 272].

Other authors suggest additional structuring of internal and external factors. Thus, there is a division of external factors into factors of micro and macro environments. The factors of the micro environment include the competitive environment, prices, solvency of market participants and others. The factors of the macro environment are known as political, economic, legal, demographic, cultural, technological and natural geographical [12, p. 30; 13, p. 50; 14, p. 296]. However, there is another opinion, according to which micro level factors are factors of the internal environment, and macro level is external [5, p. 55; 15, p. 34; 16, p. 44]. O. Bezruchko also adheres to this position and complements this classification with episodic factors characterized by inconsistency, spontaneity, low level of predictability. They can be both external (natural disasters, wars, terrorist attacks, raids, etc.) and internal (accidents at the enterprise, equipment failure, financial crisis, etc.) [6, p. 104; 15, p. 34].

M. Chorna and S. Glukhova also single out the meso level, namely branch factors [16, p. 45], which is quite appropriate. It is the division of micro level (internal environment), meso level (external environment, industry), and macro level (external environment, state) that should be used to classify factors of economic potential. As it allows to characterize all levels of enterprise more effectively, to reflect the specifics of the individual enterprise.

One of the methods of assessing the external environment is PEST-analysis, based on the study of environmental changes in four areas: political, economic, social and technological. There are similar PESTLE-analysis, which contains two more directions as legal and environmental, and

PESTLIED with international and demographic [17, p. 35]. This technique is taken as a basis by some scientists in determining the factors of influence and adapted by them following the selected objects of study. In particular, N. Kasyanov and others distinguish economic, social, political factors, but instead of technological they distinguish legal [9, p. 38]. However, D. Vasylkivsky shows intellectual and cultural factors [18, p. 151].

I. Nagorna adds financial and demographic factors to the basic grouping (where there are political, social, economic, technological) [5, p. 56]. Although some scientists define the demographic factor as a component of social ones [19, p. 39; 20, p. 80; 21, p. 23], which is quite correct to our point of view.

S. Bonyar and O. Alyabieva add marketing factors and additionally divide them into quantitative and qualitative [20, p. 80]. L. Gerbych, L. Netrebchuk underline economic, political, socio-demographic, natural-climatic, and ecological factors [22, p. 95]. V. Korsak supplemented this list with the following groups of factors: financial, demographic, consumer, institutional, urban planning, innovation, geographical and natural, and intra-industry [23, c. 49]. After analyzing the views of the definition of the elements of this classification (*Figure 1*), we can say that economic factors are fundamental and must be taken into account and analyzed by the enterprise.

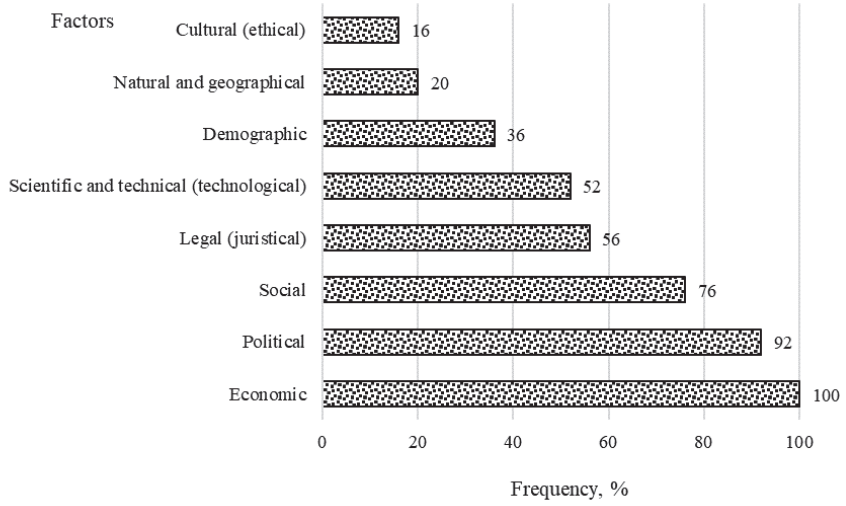

Figure 1. The frequency of mentions of types of influencing factors in the scientific literature

Source: based on [1–25].

Regarding the definition of other types of factors, this classification is quite variable and may vary depending on which area of activity the company belongs to. Therefore, we propose to determine the following classification of influencing factors on the economic potential of trade: economic, social (including demographic), political and legal, scientific and technical (technological, innovative), natural and geographical. The location of the enterprise and the development of the region are also very important influencing

factors on the economic potential of the trade enterprise (TE). A detailed list of possible external influencing factors on the economic potential of TE is presented in the *Table 1*. However, it is not final and may be reduced or supplemented depending on the management policy and strategy of the enterprise and the assessment of the degree of influence of each factors, identifying only the most significant of them.

Table 1

Classification of external influencing factors on the economic potential of the enterprise of trade by types

Classification feature	Factors
Economic	Stage of the life cycle of the socio-economic system GDP dynamics Financial condition of the state Budget deficit Inflation rate Fluctuations in the national currency Discount rate of the National Bank The level of tax burden
Political	Political stability / instability The state of progress of economic reforms Economic, financial, tax policy The level of corruption Strategy of foreign economic relations
Social	Dynamics of the number, density and structure of the population of the state and region Migration trends Unemployment rate Depth of stratification of society Level of education of the population Consumer moods, habits, traditions, consumption norms, fashion trends
Legal	The level of stability of legislation The complexity of licensing and patenting mechanisms Perfection of the regulatory framework The level of compliance with the law Activities of the judiciary, prosecutor's office, law enforcement agencies, justice, arbitration Protection of competition, property rights, including intellectual property rights
Scientific and technical	Investment and innovation climate The level of public funding for new developments The level of technology development and their competitiveness in the international market Scientific and technological progress
Natural and geographical	Infrastructure development in the country and the region The state of the transport network Availability / remoteness of alternative resources, suppliers, etc.

Source: [1–6; 12; 13; 15; 16; 19; 21; 24; 25].

In addition to these, there are many other signs of grouping factors that affect the economic potential. We distinguish:

terms of validity – short-term (valid for up to one year) and long-term (valid for more than one year) [2, p. 95]; or permanent and temporary [4, p. 254];

types of economic resources – material, labor, technical, financial and information resources of the enterprise [2, p. 95];

the nature of the impact – extensive (due to the growth of the relevant types of resources of the enterprise) and intensive (due to the quality improvement of the relevant types of resources of the enterprise*)* [2, p. 95];

degree of influence – primary and secondary [4, p. 254] or generalizing (basic), derived and detailed [5, p. 75];

method of influence – factors of direct and indirect influence [2, p. 95; 13, p. 50];

level of influence – factors of the first, second and third levels. In this case, the first level includes priority factors (consumers). The factors of the second level should include other factors of direct influence (suppliers, competitors, financial institutions, etc.). And the factors of the third level are factors of indirect influence [13, p. 50];

degree of generalization – criterion, key, basic [2, p. 169];

change (immutability) during a certain period – static, dynamic [2, p. 104];

the ability to control factors – controlled, conditionally controlled, uncontrolled [2, p. 104; 22, p. 94];

definition – potential; actual [4, p. 254];

degree of interdependence – independent is determined by certain events or trends; derived is the result of independent factors as the action of causation [4, p. 254];

method of evaluation – quantitative, which can be quantified; qualitative, which is difficult to quantify, and therefore they are measured using qualitative scales [2, p. 109; 22, p. 94].

N. Kasyanova and others note that quantitative factors have an extensive (their impact can be represented as the sum of the corresponding increments) and intensive (the result of the impact is determined by changing the coefficients) nature [9, p. 221].

Summing up, we propose the classification of influencing factors on the economic potential of TE (*Table 2*) and determine the environment of their relationship (*Figure 2*).

Table 2

Classification of influencing factors on the economic potential of the trade enterprise

Classification feature	Group of factors
By its content	External Internal
By level of occurrence	Individual * Local * General * Global *
By level of influence	Direct influence Conditionally direct influence Indirect influence
By the degree of controllability	Managed Conditionally managed Unmanaged

** Proposed by the authors.*

Source: supplemented by authors [1–3; 5–7; 13; 22].

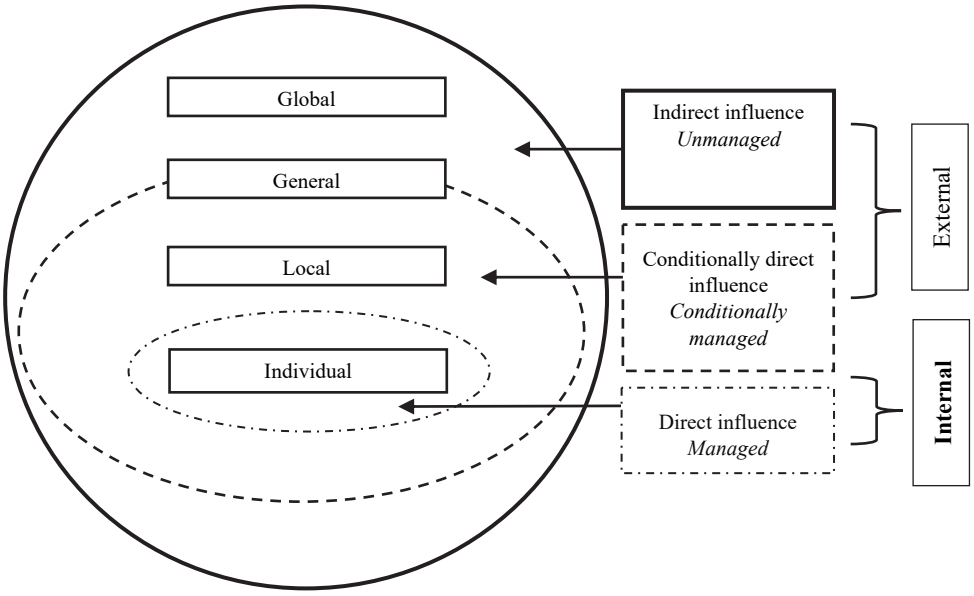

Figure 2. The environment of interaction of influencing factors on the economic potential of the trade enterprise

Source: proposed by the authors.

All factors of influence we divide into internal and external (*Figure 2*). *Internal factors* include individual or micro economic, which directly affect the economic potential of the enterprise. They are created and regulated by the enterprise. *External factors* are local, i.e. sectoral factors (meso economic), which can directly affect the activities of the enterprise. They are conditionally controlled because the enterprise is an integral part of the industry and its activities affect others and create conditions for the development of its activities. Also, external factors include *general*, i.e. the influence of the state on the enterprise (macro economic), which depending on the specific factor can have both direct (tax policy of the state) and indirect (mostly) influence on the economic potential of the enterprise. They are uncontrolled by the enterprise. *Global factors* affect the activities of the state and may have some impact on the activities of the enterprise and its economic potential.

Conclusion. The fundamental place among the factors of the external environment is occupied by economic factors. Other types should be determined and taken into account depending on the significance of their impact and the specifics of the activity.

A single factor can be classified on different grounds. It is a unifying element between different classifications. So it is proposed to reflect the specifics of their relationship and determine the environment of the interaction of influencing factors on the economic potential of trade. This can help to establish the place of the factor in the overall system, which will facilitate the process of assessing the degree of influencing factors on the economic potential of the enterprise.

It also presents its vision of structuring factors depending on the level of occurrence: individual, local, general, global. Determining the factors according to this classification makes it possible to rank the degree of influence of external factors, because the lower the level of occurrence is, the more factor affects the economic potential of the enterprise.

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Лой А., Блакита Г. Економічний потенціал підприємства торгівлі: структурний аспект.

Постановка проблеми. *Виявлення та оцінка впливу факторів на розвиток економічного потенціалу допоможе створити механізм адаптації як до негативних, так і позитивних факторів середовища підприємства, що є основою ефективного управління ризиками, сприяє забезпеченню стабільності діяльності підприємства та визначенню можливостей для його розвитку.*

Аналіз останніх досліджень і публікацій*. Проблемі визначення впливу факторів на економічний потенціал підприємства присвячено багато наукових праць, але для кожного підприємства сукупність факторів унікальна, тому їх можна порізному класифікувати, структурувати та оцінювати.*

Метою *статті є визначення та систематизація підходів до класифікації факторів впливу на економічний потенціал підприємства.*

Матеріали та методи. *Дослідження проведено із застосуванням методів теоретичного узагальнення, порівняння, аналізу та синтезу, що дало змогу систематизувати існуючі теоретичні підходи до класифікації факторів впливу на економічний потенціал підприємства.*

Результати дослідження. *Фактори впливу поділяються на зовнішні, до яких належать усі, що пов'язані з діяльністю держави і суспільства, їх впливом на діяльність підприємств і кон'юнктурою ринку, та внутрішні, що пов'язані з діяльністю підприємства і регулюються підприємством. Основне місце серед факторів зовнішнього середовища займають економічні, а інші види слід визначати та розглядати залежно від значущості їх впливу та специфіки діяльності підприємства. Наукові погляди на структуру внутрішніх і зовнішніх факторів дуже різні. Запропоновано поділяти фактори за рівнем виникнення на: індивідуальні, локальні, загальні та глобальні.*

Висновки. *Визначено та охарактеризовано специфіку взаємозв'язку різних факторів за: змістом, рівнем виникнення, ступенем впливу, контролем та представлено власне бачення структурування факторів залежно від рівня виникнення.*

Ключові слова: фактори, класифікація факторів, підприємство, економічний потенціал.

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OMNICHANNEL IN IMPROVED PROFITABILITY IN RETAIL

The relationship between omnichannel and the profitability of the trading business is substantiated. The expediency of using the omnichannel approach in retail has been proved in view of the current realities caused by the COVID-19 pandemic. Metrics of efficiency of application of the omnichannel approach are given.

Keywords: omnichannel, multichannel, revenues, turnover, conversion, retail.

Background. World realities encourage businesses to diversify their approaches to doing business, in particular, this applies to trade.

The development of e-commerce and research on consumer behavior show that in order to ensure competitiveness, quality satisfaction of customer needs, and thus increase the conversion rate, retail should conduct trading activities on various possible platforms.

The quarantine restrictions caused by the COVID-19 pandemic have significantly affected the ability to purchase goods. It is obvious that a large portion of purchases that were made directly at the store, transferred to online. In order to remain competitive, companies are forced to make strategic decisions about the further organization of trade: to leave stationary objects, to go online or to focus on omnichannel. It has been quite enough time to understand that the latter option in the form of different sales channels combination proved to be a lifeline for global and domestic retail and created an impetus to consider new scientific and practical approaches to diversifying sources of income in trade.

Analysis of recent research and publications. The concept of "omnichannel" is interdisciplinary, as it is widely used in marketing, business analysis etc. Some attempts to systematize the features of the omnichannel approach in retail are found in the works of D. Rigby, N. Beck, D. Rygl, K. Picot-Coupey, E. Huré, L. Piveteau, R. Sousa, C. Voss, A. Hübner, J. Wollenburg, A. Holzapfel, L. Bocklund [1–6] and others. Among domestic scientists who have studied this issue there are O. Zhegus, O. Zozulov, V. Lisitsa, T. Romanchenko, A. Savchuk, O. Trubey, T. Shtal, N. Proskurina [7–13] and others. These scientists studied the essence of omnichannel, identified

trends, problems and prospects for the introduction of this approach to the sale of goods in the performance of domestic retailers. Particular emphasis in research is placed on the marketing aspects of the omnichannel strategy implementation in retail. On the other hand, the issue of omnichannel influence on the income formation in trade, including long-term perspective, has not yet been systematically reflected in the scientific and practical literature, that actualizes research in this area.

Thus, the **aim** of the article is to consider the omnichannel approach to the sale of goods as an objective reality of modern retail and a factor of income growth of trade entities.

Materials and methods. The information basis for the study was the publications of foreign researchers, materials of analytical reports on the development of retail trade. General scientific and special research methods are used, in particular generalization, comparative analysis, systematization, etc.

Results. Based on the definition of trade as a relationship that arises as a result of the act of purchase and sale of goods in the channels of their implementation [14, p. 37], it can be understood that the use of different channels for the sale of goods significantly affects the volume of trade and allows the trading company to gain more market share.

Turnover is the realized consumer demand (*Figure 1*), that was satisfied through the interaction of buyer and seller in different sales channels.

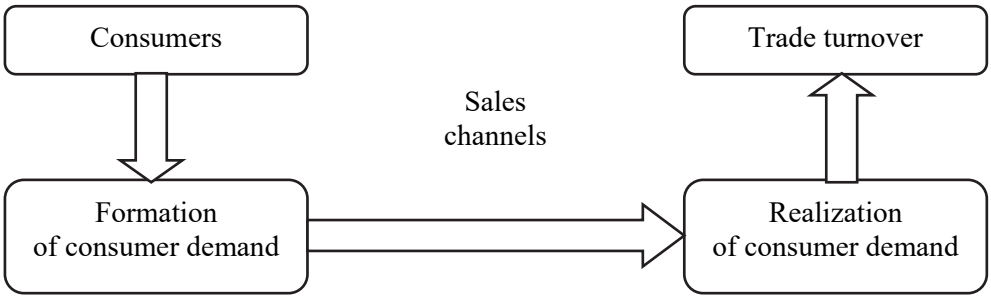

Figure 1. Algorithm of consumer demand formation and its realization

Source: compiled by the authors.

During the analysis and further planning of turnover of the trade enterprise (TE) it is usually considered as a whole on TE, on separate commodity groups, commodity departments, categories of buyers. The object of analysis can be the total turnover, commodity structure and composition of turnover, cashier's checks.

We also propose to consider the classification of trade turnover depending on the used sales channels of goods: trade turnover of the trade stationary object; turnover from the sale of goods through Internet platforms; turnover from the sale of goods through the mobile application; turnover from the sale of goods through social networks, etc., depending on the sales channels that are being used.

O. Zhegus thoroughly considered the definition of omnichannel [7]. *Omnichannel strategy* is an integrated approach to the organization of business processes for customer service, based on a holistic concept, a single platform for all selected channels for the promotion of goods and services. This approach allows the buyer to freely switch from one channel to another, get the necessary information, compare and choose the product, make decisions and make a purchase.

Using a single platform for all sales and communication channels will also allow to accumulate information flows on customer behavior and quickly obtain data on purchases, the use of certain channels, the navigation aspects of the purchase.

Recently, there has been interest in all possible sales channels. Traditional retailers are increasing their online presence, and the first online stores are supplementing their list of services, opening shops and showrooms.

Customers are increasingly using electronic devices to both search for goods and placing orders. Moreover, the sphere of trade is now developing precisely due to the application of the omnichannel approach to sales, where consumers are offered alternative channels to find the goods they need.

In the scientific literature it is not always possible to find a clearly defined definition of the concept of omnichannel. In 2011, in the article "The Future of Shopping" D. Rigby [1] first used the word, defining retail with using all channels as an integrated sales experience that combines the benefits of physical stores with a rich information experience on the Internet.

N. Beck and D. Rigl defined that retail through all channels is "a set of activities related to the sale of goods or services through all widespread channels, due to which the customer can initiate a full interaction between channels and / or the retailer controls full integration of channels" [2].

K. Pico-Coopi and co-authors made a systematic review of the professional literature to describe the omnichannel approach as a holistic and integrated shopping experience through all sales channels, which eliminates the differences between a stationary and online store [3].

According to researchers, to establish a service delivery system it is required:

- company decision related to the choice of omnichannel approach;
- physical elements of the delivery system, namely: equipment and logistics technologies;
- infrastructural choice of programs and sites for work, definition of marketing policy.

In addition, the development of information and communication technologies has increased the number of means by which customers can interact with retailers.

R. Sousa and K. Voss [4] distinguish two types of channels: *virtual*, consisting of means of interaction with the use of modern telecommunications, information and multimedia technologies, and *physical*, consisting of means of communication with the customer using physical infrastructure

(for example, warehouses). Scientists propose to combine these two channels, as both virtual and physical in any case belong to the personal interaction of the customer and the company's representative.

A. Hübner and co-authors confirm this information and add that the transition from single-channel to omnichannel requires the restructuring of logistics structures and, at the same time, optimization of processes related to the sale of goods and services [5]. Consumer participation is extremely important in this process. Process optimization requires coordination of the transition to an omnichannel approach with the customer, as the goals of the company and the client coincide.

The most difficult aspect of the effective implementation of the omnichannel strategy is ensuring the efficiency and interconnection of processes, as well as the purposeful accumulation and management of data. L. Boklund notes that the technology will be effective only when all available resources are effectively interconnected with each other and provide a synthesis of all business processes [6]. Thus, the technological, informational and managerial components of the omnichannel strategy will play an important role.

Changes in purchasing behavior testify to the benefits and necessity of introducing an integrated approach to sales at retail enterprises and the introduction of an omnichannel strategy. Buyers of consumer goods are increasingly using online channels to search for goods, compare alternatives, make choices.

According to the integrated approach, all communication and sales channels are interconnected, that determines the variety of decision-making models for purchasing. The buyer can use all channels at once (start with online and complete the purchase offline and vice versa), thus a comfortable business environment for both customers and sellers is creating [7].

Statistical studies confirm that the omnichannel strategy is indeed the optimal solution for retailers. According to the Adobe Digital Index, the buying probability of an existing consumer is 9 times higher than the probability that a new customer will create a minimum order size [15]. And according to the Harvard Business Review, omnichannel consumers spend 10 % more on online shopping and 4 % more on offline shopping [16].

Under the influence of the development of online sales channels and communication, certain models of customer behavior have already been formed, which can be divided into groups [7]:

- those who prefer online shopping, i.e. finding the necessary product, choice, analysis of alternatives, making the final decision, the transaction takes place in online stores;
- trying to get more information, reduce the time to visit stores and choose the product, search for it, analyze alternatives in online stores, and buy from stationary store;
- first customers visit a stationary store, and then they search for the necessary product, analyze alternatives and buy in online stores;

- customers explore alternatives and choose a product in online stores, then they visit a stationary store to see the product in real performance and buy it in an online store.

In fact, today it is the omnichannel approach that can ensure the effective functioning of retailers. To prove this, we first need to define the "retailer path", which goes from meeting the needs of consumers through the availability of goods, price flexibility and consumer loyalty to brand recognition. At the same time, the "consumer path", which extends to both offline and online platforms, involves viewing products, creating a basket, buying and inspiring future purchases.

So, by this logic, a retailer can assume that in a pandemic it is enough to open an online store or page on social networks and spend money purely on this effective sales channel. In addition, according to Google research, 3 out of 4 people will visit a site that has been advertised on the Internet before [17]. However, in the digital environment, everything is much more complicated than at first glance.

On average, 97 % of online visitors do not buy at all, and 70 % of those who go to the last stage of purchase, eventually leave the product and abandon the basket [18]. Why is this happening? You cannot compensate for the ignorance of who your client is, the friendly staff and the staff who can provide advice.

Also, given the experience of the pandemic beginning, it is really possible to record an increase in sales on the Internet platforms of companies that have been forced to go online.

According to research, omnichannel consumers spend 4 % more on offline visits and 10 % more on online purchases [19]. In the short term (the first 2–3 months), companies really not only managed to survive, but they were also profitable. However, the pandemic continues, and in the long run, those retailers that do not implement an omnichannel approach to sales will not only begin to lose turnover, but will also suffer losses. Very often under such conditions the next step of the retailer is a multi-channel strategy for selling goods (*Table 1*).

Table 1

The main differences between multichannel and omnichannel strategies

Comparison of parameters	Strategy	
	Multichannel	Omnichannel
Sales channels	The brand is represented on various channels	Synchronized
Form of management	Decentralized	Centralized
Brand presentation	Each platform operates separately and is a point of sale	Formation of a holistic image of the company
Purpose	Attract more customers	Provide repurchase

Source: compiled by the authors.

In a multi-channel strategy, the channels operate in parallel, i.e. the brand is represented on different platforms, which are managed independently of each other. With the omnichannel approach, there is a synchronization of channels, which are managed centrally so as to form first a holistic image of the company in the eyes of the consumer, and only then on one of the channels to sell.

Therefore, the level of consumer confidence in it is extremely important for the retailer. The results of the survey, highlighted in the BrandsGetReal report [20], answer the question of why customers trust more brands that are represented on different platforms (*Figure 2*).

Figure 2. Reasons for the success of omnichannel companies

Source: compiled by the authors on the basis of [20].

As follows from *Figure 2*, most responses focus on the fact that consumers seek to feel real interaction, to be contacted, helped, and so on. You should also pay attention to the last two answers. By omnichannel, the company demonstrates its ability to pay for various platforms and thus reveals its leadership position in the market. Consumers have the impression that if a brand is able to maintain all platforms in good condition, it has enough money, so they buy goods from it, i.e. the retailer is in demand.

If we think about the other three key factors mentioned in the survey, we can see the same answer to the question why the consumer comes back and buys again – personalization. It shows customers that the retailer actually knows them: habits, preferences, needs, etc. The ultimate goal of developing an omnichannel strategy is to create a personalized digital journey.

For example, it may be provided with guidance mechanisms designed to display goods or services that customers are more likely to buy, or to display related products (cross sell). This personalization exists due to certain technologies and algorithms and it cannot be created manually. An alternative solution is the well-known loyalty program. These are not just bonus programs that everyone is used to and that exist not so much to attract customers with their "loyalty" as to analyze and segment.

Together with the omnichannel approach, the retailer can quickly track and explore the consumer's digital journey. Thanks to constant authorization, the customer receives more adaptive recommendations for him, and retail gets access to one of the most important data for him: how the consumer made the purchase decision. Due to the fact that the company is omnichannel, you can understand where and how many times the client entered, added, viewed, compared etc. This analytics provides an opportunity to investigate actions and do everything possible to not only increase conversion, but also the share of sales of goods and services. It is difficult to disagree that every retailer dreams of buying from him as much as possible, and not that his store was one of the platforms for comparing prices and reviews.

Metrics for the effectiveness of the omnichannel approach are often associated with monthly revenue growth, marketing costs, gross profit, average cost of customer involvement, and so on. In addition to the standard metrics, you should pay attention to the *conversion* to recommended products and the *duration of the visit* with links to them. This indicator is the key goal of loyalty. *Cross-conversion* is also defined as how our authorized customer travels digitally between all integrated channels.

Customer Retention Rate (CRR) reflects the loyalty of our customer and his loyalty. This simple calculation makes it possible to assess how existing customers are willing to return to the retailer:

$$\frac{\text{Consumers}_{\text{end of period}} - \text{Consumers}_{\text{new}}}{\text{Consumers}_{\text{beginning of the period}}} 100\ \%\ . \qquad (1)$$

Lifetime Value (LTV) is the measurable amount of money a customer will spend on purchases over his life cycle. There are different approaches to its definition: someone relies on the money spent so far, someone on the projected values. There are four key performance indicators (KPI) that determine LTV [21]:

$$\textit{average order price (AOV)} = \frac{\text{Total sales revenue}}{\text{Total number of orders}}\ ; \qquad (2)$$

$$\textit{frequency of purchases (F)} = \frac{\text{Number of orders}}{\text{The total number of unique customers}}\ ; \qquad (3)$$

$$\textit{gross margin (GM)} = \frac{\text{Total sales revenue} - \text{The cost of goods sold}}{\text{Total sales revenue}} \cdot 100\ \%; \qquad (4)$$

$$\textit{outflow factor (OF)} = \frac{\text{Consumers}_{\text{end of period}} - \text{Consumers}_{\text{beginning of the period}}}{\text{Consumers}_{\text{beginning of the period}}} \cdot 100\ \%\ . \qquad (5)$$

Another important indicator is the *customer acquisition cost (CAC).* This is the amount that the business will spend on one new customer. Another name: *user acquisition cost* – the cost of a new user:

$$\frac{\text{The amount of costs to attract consumers for the period}}{\text{Number of new consumers for the period}} \qquad (6)$$

Together, the vital value of consumers and the cost of attracting them allow you to segment customers. *LTV* means "vital value" for each client, and *CAC* means "cost of attracting a client". The *LTV / CAC* ratio allows you to compare the value of the consumer throughout its life cycle with the

cost of its involvement. If the *LTV / CAC* ratio is less than 1.0, the company loses value, if more than 1.0, it creates value. As a result, 4 groups of consumers are formed (*Table 2*).

The strategy of promotion of goods and services should be adjusted according to the predominant category of buyers.

Table 2

Consumer segmentation by "profitability-value" ratio

Group	Characteristic	Recommendations
High-margin, high-value	The most profitable consumers. Followers of the brand as it is	–
High-margin, low-value	Consumers buy goods at full price, but not so often	Personalized advertising should be used
Low-margin, high-value	Those customers who often buy goods at a discount	A well-designed discount system will replace advertising, as consumers are already tracking your promotions
Low-margin, low-value	Unprofitable customers who rarely buy goods	Companies should avoid targeting this group of consumers

Source: compiled by the authors on the basis of [20].

It is very important to define the considered metrics, because a more detailed understanding of the processes that occur simultaneously, before and after the purchase, can be analyzed in more depth. As a result, the retailer becomes more flexible to the effects of the crisis due to the pandemic and other circumstances that always accompany the changing retail market. Thus the retailer can prevent the manifestation of negative consequences before they occur.

Conclusion. The future of the omnichannel approach to sales and its implications are still uncertain, but it is promising. Such transition usually requires reengineering of business processes and, thus, forces business representatives to focus more on the issues of accurate and appropriate combination of several sales channels. In today's world, this moment is important for retail, as businesses try to identify and develop new trends that may be relevant to consumers, based on which to gain a competitive advantage. The timely introduction of new sales channels significantly affects the position of the trading company in the market, where there is a fierce struggle for the consumer.

Thus, omnichannel is not only a means of surviving retail in a pandemic, but also a modern business model that aims to overcome the effects of quarantine restrictions and is a powerful tool for revenue growth and business scaling in general.

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Височин І., Хмара А. Омніканальність у підвищенні дохідності в ритейлі.

Постановка проблеми. *В умовах карантинних обмежень, спричинених пандемією COVID-19, поєднання різних каналів реалізації товарів виявилося рятівним засобом для світового та вітчизняного ритейлу і створило поштовх для розгляду нових науково-практичних підходів до диверсифікації джерел формування доходів у торгівлі.*

Аналіз останніх досліджень і публікацій. *Можна констатувати, що проблема стратегічного управління доходами підприємств торгівлі не достатньо розкрита в сучасній вітчизняній економічній літературі, а питання впливу омніканальності на формування доходів в торгівлі, в тому числі у довгостроковій перспективі, поки що не знайшло системного відображення у науковій та практичній літературі.*

Метою *статті є розгляд омніканального підходу до реалізації товарів як об'єктивної реальності сучасного ритейлу та фактору зростання доходів суб'єктів торговельної діяльності.*

Матеріали та методи. *Інформаційним підґрунтям для проведення дослідження слугували публікації зарубіжних дослідників, матеріали аналітичних звітів щодо розвитку роздрібної торгівлі. Використано ряд загальнонаукових та спеціальних методів досліджень, зокрема узагальнення, порівняльного аналізу, систематизації та ін.*

Результати дослідження. *Останнім часом сфера торгівлі розвивається внаслідок застосування омніканального підходу до продажів, де споживачам пропонують альтернативні канали для пошуку необхідних їм товарів. При омніканальному підході відбувається синхронізація каналів, які управляються централізовано таким чином, щоб спочатку сформувати цілісний образ компанії в очах споживача, а вже потім на одному з каналів здійснити продаж. Головною метою цієї стратегії є забезпечення повторної покупки.*

Висновки. *Омніканальність – це засіб виживання ритейлу в умовах пандемії, сучасна бізнес-модель, яка має на меті не тільки сприяти подоланню наслідків впливу карантинних обмежень, потужний інструмент для нарощення обсягу доходів та масштабування бізнесу в цілому.*

Ключові слова: омніканальність, багатоканальність, доходи, товарооборот, конверсія, ритейл.

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DIGITAL FUNCTIONALITY OF COMPLEMENTATION OF BUSINESS PROCESSES OF THE HOTEL INDUSTRY*

It has been determined that intensive digitalization of service processes is a condition for the effective functioning of the hotel industry under the influence of the COVID-19 pandemic. One of its important directions, namely the use of a process approach to management, has been specified. The article proves that the improvement of business processes on the basis of their complementation and defining its digital functionality will enable to improve the quantitative and qualitative performance, will help to increase competitiveness and to maintain market share.

Keywords: hotel industry enterprise, hotel business, digitalization, complementation, business processes, *CRM*-systems.

Background. Modern trends in the hotel business development, which are characterized by fluctuations of economic conditions, shortening of the life cycle of services, and intensification of competition, encourage companies to introduce innovative technologies into management process as a dominant factor in achieving effective goals in conditions of digital economy.

It is an open fact that hotel business is an investment-attractive economic activity, is characterized by a high degree of internationalization of capital and the international context of providing services through the system of integration, is important for attracting investment in the real sector of the economy, is an essential factor of domestic and inbound tourism, of a country's brand building, and of providing revenues to the budgets of different levels.

* The article was prepared as part of the research work "Digital Transformation of Trade, Economic and Tourist Systems of Ukraine" (state registration number 0121U112231).

The results of the analysis of hotel business trends (number of people provided with hotel services during 2011–2020) show that unstable development trends are due to: the impact of the COVID-19 pandemic; seasonal fluctuations in demand; impossibility to create stocks of a specific product (hotel service); rising service prices; insufficient level of service quality with low price flexibility of demand; organizational conservatism of the management process (*Figure 1*).

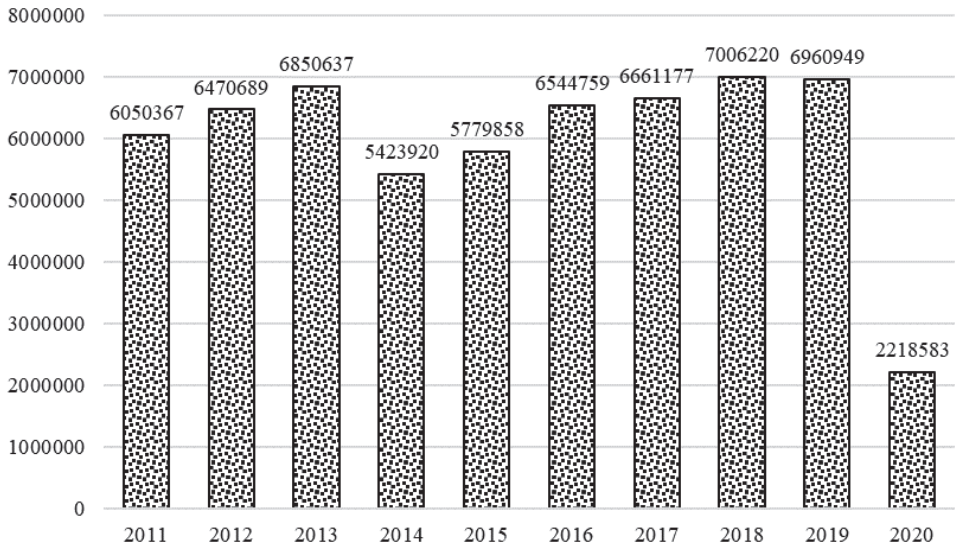

Figure 1. Number of people who were provided with hotel services in 2011–2020 [3]

Non-network hotels operate in particularly difficult conditions, which, in addition to the above-mentioned factors of adverse impact, are experiencing competitive pressure from the side of powerful international hotel operators considering the scale of the hotel business. An important direction of effective functioning of hotel business entities is the use of a process approach to management for improving business processes on the basis of their complementation, taking into account the trend of speed of information dissemination, which determines the relevance of the chosen topic.

Analysis of recent researches and publications. Research of the directions concerning the increase of the competitive potential, activization of development, preservation of the market share of the enterprise through studying the questions of business process management occupies a priority place in researches of the leading domestic and foreign scientists.

The comparative analysis of innovative theories and scientific substantiation of directions as regards transformation of enterprises' management business processes in tourist sphere is represented by researchers of

KNUTE scientific school [4], who proved that transformation of business processes is based on innovation of operational performance which is important not only for making strategic decisions, but also for its adjustment with the help of the effectively constructed system of tactical actions management that gives the chance to increase efficiency of operational activity of business subjects.

The works of such authors as I. Segeda [5], O. Lupych [6], I. Biletska [7], S. Buryak [8], A. Kaplina [9] etc. are devoted to various aspects of business processes improvement at hotel industry enterprises.

Such scientists as A. Lemańska-Majdzik and M. Okręglicka [10] emphasize the importance and necessity of multifaceted study of the business process management phenomenon as a comprehensive approach to reaching the goals of the organization. In their study they prove the scientific point that the optimization of business processes in organizations is a marker of efficiency within the organization, which is formed on the basis of a process approach to enterprise management.

The problem of implementing the philosophy of business process management, which is supported by a portfolio of methods, techniques and instruments concerning modeling, design, coordination and compatibility of business processes, model management, production of new business process technologies, is presented by such researcher as H. Reijers [11].

In-depth methodological principles of building a prototype of the business process improvement plan based on an evidence-based approach are given in the scientific work by P. Delias and G. Nguyen [12], who in particular have developed a methodology for prioritizing business process improvement through a step-by-step procedure which enables to assess their versatility and to justify areas for their improvement with the use of business processes comparison.

The team of researchers in the work "Using business process models to specify the production of operations" actualize the feasibility of studying the problem as to complementation of business processes of the enterprise, arguing that business process management is used as a driver of integration, formulating business processes that cross particular business functions [13].

Determining the importance of theoretical and practical achievements of scientists who study the diversity of business process management, we can state that the scientific issues as regards complementation of business processes in conditions of intensive digitalization of economic activity, which will stipulate singling out of functionalities of information systems allowing to receive additional competitive benefits as to increasing profits and reducing costs for one customer together with attracting new ones and maintaining the existing customer base, demand further analysis. Improvement of business process management on a complementary basis is determined by the fact that the description and analysis of business processes and

their interaction is important for reducing the costs of financial and time resources of the enterprise through streamlining and consistent improvement of business processes.

The **aim** of this article is to study the theoretical basis and praxeological principles of the process of complementation of business processes of the hotel industry enterprise, which will contribute to development of scientific approaches to business process management taking into account their intensive digitalization and in the context of highlighting those that create added value for the enterprise and consumer value of hotel services, and those that take into account the discreteness of business processes, provide socio-economic effect of economic activity.

Materials and methods. The research is based on the use of such methods of scientific knowledge as theoretical generalization concerning generalization of the definition of "business processes"; systematic approach concerning the definition and classification of business processes of the hotel industry; bibliographic analysis.

Results. In the changing conditions of external and internal environments, an effective way to improve the business processes of the enterprise is their complementation, namely the coordination and interdependence of actions. This allows us to quickly restructure the company's operations in response to market demands, especially in a global pandemic.

Taking into account the results of the systematic generalization of scientific views on the essence of the definition of "business process" (*Table*), their common characteristics are singled out.

Table

Conceptual field of the essence of the definition of "business process"

Author	Business process essence
D. Kozenkov	The sequence of actions aimed at achieving final and particular results
B. Andersen	A chain of logically related, repetitive actions that result in the use of enterprise resources (physically or virtually) to achieve certain measurable results or products to satisfy internal or external consumers
A. Bolshakov	Economic process that begins with one or more inputs and ends with the creation of the result (product) needed by the consumer
Yu. Lipuntsov	One or more related works or procedures that collectively implement the purpose of production activities within a particular organizational structure
P. Kutelev	Grouped and interacting functions of economic activity, focused on a specific consumer
E. Deming	Type of activity for the functioning of the organization
M. Porter	A set of different activities in which one or more types of resources are used at the "input", and as a result of this activity a product that has value for the consumer is created at the "output"
M. Robson	Workflow that passes from one person to another or from one department to another
M. Laguna, D. Markland	A significant number of microprocesses types, consisting of a set of tasks that can be defined as an algorithm that goes through different activities and finally leaves the process as a finished result
M. Fisher, F. Imgrund	System-closed process at all stages of the life cycle, starting from the creation of a conceptual idea through design to implementation and result

Source: summarized by the authors according to [14–23].

The results of a comparative analysis of the essence of "business process" concept show that researchers understand the business process as a structured sequence of actions to perform the relevant activity.

Due to the fact that business processes in the organization are heterogeneous, as they reflect the implementation of certain functions of the organization, we can note their following features:

- they have internal and external users;
- they take place within the divisions of the hotel enterprise, between them, as well as between different organizations;
- they are based on the method of work inherent in a particular organization.

Thus, by the business process *firstly* we understand the orderliness of actions to perform operational activities at all stages of the life cycle: from the origin of the idea to its implementation and obtaining the result; *secondly*, we identify it as business procedures that consume resources (financial, production, material, intellectual), resulting in services that form a supply for consumers; *thirdly*, business process management, in contrast to function management, determines the goal of achieving effectiveness. Correlating the analyzed theoretical approaches as regards understanding the essence of the concept of "business process" with the managerial orientation of its essence in the hotel business, we can emphasize that business processes should be considered from the standpoint of complementation, which determines the degree of interdependence of individual tasks creating a certain operation or interdependence of operations that shape the business process.

Business process *complementation* reveals itself in functional, consistent, informational, procedural, and temporal interconnectedness, thus providing a flexible and pragmatic decomposition of business processes. *Functional* interconnectedness means that the set of production operations of the enterprise reflects a specific function; *consistent* interconnectedness reflects the production functions in such a way that the output of one business process is the input of the next one; *informational* interconnectedness is revealed in the fact that business processes are performed in parallel, and all of them have a common input and/or output; *procedural* interconnectedness means that after the first business process of the production chain, the status of its completion is checked and, if it performs the task set, the following one is performed according to the procedure; *temporal* interconnectedness aims to minimize the information flow, i.e. the next business process of the production chain is performed without taking into account the completion status of the previous one.

Thus, from the standpoint of achieving complementation, *business process* should be understood as a structured, measurable set of actions, consistently performed by structural divisions of the enterprise to achieve the goal of its activities, namely to meet the needs of consumers of hotel

services. In this context, business process management should be considered as a set (combination) of business processes that form the service cycle and are a condition for an efficient production chain of hotel services. It should also be noted that from the standpoint of digitalization, it is difficult to automate unstable and disordered business processes.

Due to the fact that the hotel industry enterprise is a business entity with a supporting information and management system, the business processes of the hotel industry enterprises include actions and operations related to:

- customer service;
- maintenance of internal processes to ensure the functioning of the enterprise;
- organization of supply processes;
- organization of marketing activities;
- organization of accounting and financial work;
- organization of the top management of the hotel;
- interaction with tour operators [24].

The expediency of business processes complementation is stipulated by the need to build a flexible system of all business processes in order to form and implement hotel services of high consumer value, as business processes are the "core" of the economic system of the enterprise. This corresponds to the methodological principles of the concept of the enterprise process management. Taking these standpoints into account, we offer a model of business processes complementation of the hotel industry (*Figure 2*). Based on the viewpoint that the formation of high consumer value of hotel services forms the imperatives of business process complementation, we agree with the standpoint of scientists who have developed the scientific view that business process management is directed to improve and to control organizational processes in order to ensure maximum value for consumers, which can be achieved by stimulating complementation through end-to-end business process optimization. This approach has a number of advantages, because *firstly*, it has the potential to create a sustainable competitive advantage; *secondly*, the level of integration increases as it focuses business processes on the consumer; *thirdly*, it improves business processes through innovation. We state this by saying that today the most significant transformations of the hotel services market are primarily related to changes in preferences and expectations of potential tourists, who are becoming increasingly demanding and require a personalized approach. Achieving a high degree of the modern consumers' satisfaction is a difficult task, as they are well acquainted with various price offers, loyalty programs, and preferences provided by the hotel industry.

Researchers N. Langviniene and I. Daunoravisinute in a study that identifies the factors influencing the success of the business model in the hospitality industry emphasized *critical parameters* for the hotel industry enterprise, just: innovation, skilled staff, application of CRM, technology, internal marketing, special offer [25].

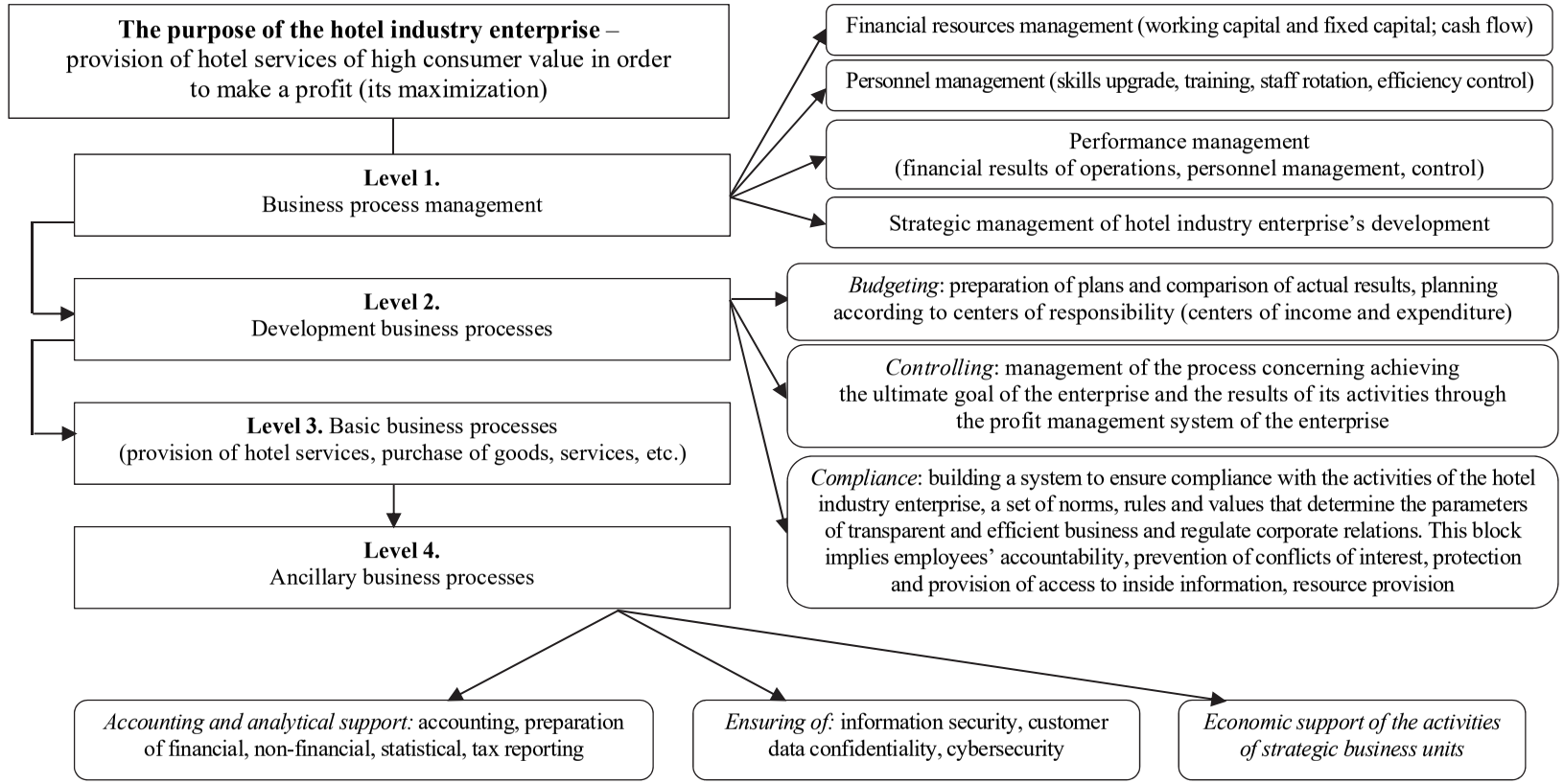

Figure 2. Multilevel model of complementation of the hotel industry enterprise's business processes

Source: developed by the authors.

One of the priority options for business process complementation is to determine the digital functionality of the automated CRM system, which is a digital technology for modeling business processes, improvement of the operating model based on a dynamic portfolio of business models, introduction of digital service technologies. With the help of functionalities, the *CRM*-systems fulfil the analysis of statistical data as regards sales and their management, interaction of consumers and staff, management of staff performance and management of the enterprise's subsystems interaction. The use of the information *CRM*-system in the field of hospitality is mostly defined as an instrument for interconnecting sales with the effectiveness of relationship with the customer. However, hospitality is an area in which business processes should be aimed at systematic monitoring of the needs and expectations of consumers. Personalization of needs helps to create consumer value and to increase the competitiveness of hotel services, so an important digital feature of the *CRM*-system is the ability to organize the interconnection of staff functions via internal communications, chats (Bpm'online and amoCRM, operational task distribution, messaging, etc.).

Shown in *Figure 2* multilevel model of complementation marks the typical business processes of the hotel industry enterprise, respectively, the digital functionality of complementation should reflect information processing procedures and should be aimed at providing automated solutions for management, marketing, service processes, communication with consumers and stakeholders, corporate culture. This necessitates the inclusion of business process management (*BPM*) functionality in the *CRM* software modules, practically integrating the means of complex business automation. This implies that the *CRM* carries out the complementation of marketing, accounting, and logistics. The *CRM*-systems also accumulate the history of consumer interaction with the enterprise. Thus, the *CRM*-system is the basic digital functionality for optimizing business processes of the enterprise. The results of the study by A. Inversini, M. De Carlo, L. Masiero prove the relationship and direct impact of the use of CRM software products on the growth of hotel ratings among consumers, resulting in increased profits, identifying new revenue centers, maintaining and increasing market share [26].

The results of a study by a team of scientists who proved the systematic complementation of financial, marketing and service business processes in the online environment which ensures the effectiveness of the value chain and consumer value of the hotel product and has a positive effect on business results are indicative as to positive impact of complementation of business processes in the format of revenue management and the *CRM* [27]. That is, the definition of digital functionality of the hotel industry business processes complementation in the format of revenue management and the CRM is targeted at creating an information environment for planning, monitoring, performance analysis, and formation of relationships between departments.

Defining the features of business process complementation, we agree with scientists who in the study *"Ten Principles of Good Business Process Management"* identified factors that reveal the *principles* of achieving business process effectiveness, namely: awareness of the business specific character, continuity, activation, integrity, institutionalization, involvement, interaction, use of information technologies [28].

These principles ensure the feasibility of considering the implementation of business processes in the framework of innovative development of enterprises, which will help build a consistent mechanism for managing and coordinating business processes in the formation of strategic capital; operating activities of the hotel; ensuring service processes and financial efficiency. This is connected with the fact that, for example, innovations in the field of digitalization relate not only to operational activities, but also to the processes inherent in management. The application of such an approach will create preconditions for the completion of business processes of the hotel industry enterprise as a perfect business model. Innovations in the organization of business processes of the hotel industry enterprise are associated with a change in management model through the development of the ability to take into account the impact of environmental factors and to quickly solve problems that arise.

According to researchers T. Bediaeva and A. Barlova [29], innovations in the organization of business processes in the management of the hotel business enterprise should be based on the following principles and grounds:

- flexibility (speed of adaptation to changes in the operating environment with minimal costs, which in the future will become an instrument to reduce the likelihood of financial and non-financial risks);
- compliance with the law;
- management structure, in particular senior management, should be built in accordance with the needs of the enterprise;
- interaction of levels of management structure (clarity of powers and mutual relations at all levels of management of each corresponding model of the hotel industry enterprise's management);
- application of new tools and objects of management policy, as well as the development of new channels to attract additional funding directed at expanding the activities of the enterprise.

The Hub Spot CRM functionality, which provides the ability to create, track, develop and maintain interactive, mutually beneficial processes between the subject and consumer of hotel services driven by economic goals and aimed at multiple transactions, is the innovative digital functionality of the automated CRM-system for the hotel business, which takes into account the above-mentioned principles. This means that by managing relationships through the digital CRM functionality, there is a real opportunity to ensure the complementation of business processes in order to quickly meet customer demands and respond to changing requirements. From this point of view, the scientific attitude that relationship marketing is the basis for the formation of complementation of business processes in the hotel business,

which allows to perceive this concept of marketing as a specific management function and mechanism for realizing the economic interests of enterprises and consumers of hotel services.

Conclusion. The interdependence and interconnection of business processes can be measured by correlating the indicator of the hotel services consumer value, which are created by an information system for optimizing business processes, and this significantly increases the effectiveness of their management. The argument for this conclusion is seen in a proven standpoint that the lack of relationship between the business processes and the business model of the enterprise does not allow to concentrate economic activity around a specific goal, to plan, organize, stimulate, control, and to preventively regulate the identified deviations in the service cycle consumers.

Defining the digital functionality of the hotel business processes through the *CRM*, *BPM* systems reflects the intensive digitalization of the hotel business and the understanding that its praxeological basis is based on the concepts of information society, network economy, relationships, strategic management and others. Accordingly, the digital functionality of business process implementation, *firstly*, provides a targeted focus, namely: strategical (focused on interaction with the external environment and flexibility of the enterprise); tactical (improves increase of management effectiveness), operational (focused on the formation of consumer value, which will satisfy the needs of the consumer), which will form a consistent mechanism for managing business activities; *secondly*, allows to form appropriate information support that will provide synergy in the management of business processes to increase sales, to develop "active" ones and to increase re-sales of hotel services, *thirdly*, forms an analytical basis in a situation of necessity concerning formation of the activity prognostic results.

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Стопченко Є., Бойко М., Кулик М. Цифровий функціонал комплементації бізнес-процесів підприємства готельного господарства.

Постановка проблеми. *Сучасні тенденції розвитку готельного бізнесу спонукають підприємства до впровадження інноваційних технологій в управлінський процес як домінантного фактору досягнення цілей ефективної діяльності в умовах цифрової економіки.*

Аналіз останніх досліджень і публікацій *показав, що попри наявність окремих наукових доробок, залишається невирішеною важлива науково-практична проблема щодо комплементації (взаємодоповнюваності) бізнес-процесів в умовах інтенсивної диджиталізації господарської діяльності, що обумовює виокремлення функціоналів*

інформаційних систем, які сприятимуть отриманню додаткових конкурентних вигод щодо збільшення прибутку та скорочення витрат для одного клієнта, залученню нових клієнтів та утриманню існуючої клієнтської бази.

***Мета** статті – визначити теоретичну основу та праксеологічні засади концептуалізації процесу комплементації (взаємодоповнюваності) бізнес-процесів підприємства готельного господарства, що забезпечить розвиток наукових підходів до управління бізнес-процесами з урахуванням інтенсивної їх диджиталізації.*

***Матеріали та методи.** Дослідження базується на використанні таких методів наукового пізнання, як теоретичне узагальнення – узагальнення дефініції "бізнес-процеси"; системний підхід – визначення та класифікація бізнес-процесів підприємств готельного господарства; бібліографічний аналіз.*

***Результати дослідження.** Визначено, що бізнес-процеси суб'єкта готельного бізнесу доцільно досліджувати з позиції комплементації, яка визначає ступінь взаємозалежності окремих робіт, що утворюють окрему операцію, або взаємозалежність операцій, що формують бізнес-процес. Встановлено, що пріоритетним варіантом комплементації бізнес-процесів є цифровий функціонал автоматизованої CRM-системи – цифрова технологія моделювання бізнес-процесів, удосконалення операційної моделі на основі динамічного портфеля бізнес-моделей, впровадження цифрових технологій обслуговування. Зазначено, що важливим цифровим функціоналом CRM-системи є можливість організації взаємопов'язаності функцій персоналу через внутрішні комунікації, чати (Bpm'online та amoCRM, оперативний розподіл завдань, розсилка повідомлень тощо). Доведено, що основою компліментарності бізнес-процесів у готельному бізнесі є маркетинг взаємовідносин.*

***Висновки.** На відміну від існуючих публікацій, сформульовано наукову позицію, що визначення цифрового функціонала комплементації бізнес-процесів підприємства готельного господарства через CRM, BPM системи відображає інтенсивну диджиталізацію готельного бізнесу та розуміння того, що його праксеологічна основа базується на концепціях інформаційного суспільства, мережевої економіки, взаємовідносин, стратегічного менеджменту. Це потребує подальших наукових досліджень комплементації у контексті зростання обсягів продажів, розвитку "активних" та забезпечення збільшення повторних продажів готельних послуг.*

Ключові слова: підприємство готельного господарства, готельний бізнес, цифровізація, комплементація, бізнес-процеси, *CRM*-системи.

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BALANCE BUDGETING OF AGRIBUSINESS ENTERPRISES

Approaches to defining the essence of budgeting and budgets classification are generalized, the importance of the budget balance for agribusiness enterprises is characterized. The peculiarities of drawing up balance budgets at agribusiness enterprises, methods of determining budget indicators, the relationship of budgets with management balance sheet items, which will effectively organize balance budgeting and coordinate balance indicators to manage the financial condition of the enterprise are analyzed.

Keywords: budget, balance budgeting, agribusiness enterprise.

Background. Budgeting is the process of budgeting and control over their implementation, and quite often the concept of budget is identified with the budget, and budgeting with planning. Budgeting should be considered more systematically as the formation of an indicators vision of the state and the enterprise development for the future, in relation to available resources, taking into account the strengths and weaknesses, external and internal factors, risks, necessary measures. At the same time, balance budgeting plays a key role in achieving the desired financial condition and compliance of all other types of budgets.

In the general interpretation balance budgeting (BB) is considered as the coordination of the need for resources with the sources of their receiving, financing. However, this approach is too simplistic. Using the right organization, budgeting may be one of the effective tools for developing and implementing financial and economic strategy of the enterprise. So BB may ensure quality planning of changes in the enterprise assets, especially for those that as a result of biological transformations that bring agricultural products and multiply existing biological assets. BB also allows to plan the need to upgrade fixed assets, make capital investments and identify sources of funding. The balance budget coordinates the calculations for all other types of budget and provides information on the growth sources of assets and profits. All this can help improve the agribusiness management of enterprises and help them raise the industry to a new level, which emphasizes the relevance and practical importance of the chosen research topic.

Analysis of the last researches and publications. Essence of budgeting and its value for enterprises was examined by different scientists-economists that were offered own interpretations and approach to budgeting. Budgeting performs the important duty of present charges optimization and directions of use of the received incomes for improvement of financially-economic activity of enterprise in current and future periods (O. Moshkovska, S. Luchyk, Y. Manachynska, M. Kuzub) [1]. The budget of an agribusiness enterprise is an estimate of revenues (income), costs and profits associated with the production of agricultural products (A. Reza, S. Shim, S. Kim, S. Ahn, S. Won, C. Ra) [2].

The information that contained in the budgets of enterprises is used by farmers, professionals of financial services, financial institutions, government agencies and other decision-makers in the food industry (J. Harper, S. Cornelisse, L. Kime, J. Hyde) [3]. Budgeting as a management mechanism contains elements of planning, analysis, accounting and control of the enterprise (O. Moshkovskaya) [4].

Corporate budgeting is studied in combination with flexible project management (C. Ploder, T. Dilger, R. Bernsteiner) [5]. The managerial essence of budgeting is expressed mainly in cost indicators and benchmarks, time horizon of planning, interaction of resources and control, functions of planning of operations, coordination of activity of divisions, information, stimulating, modeling, control and estimation (V. Zinchenko) [6].

Drawing up a balance sheet budget requires the use of various valuation techniques that significantly affect the nature of the presentation of information. Authors O. Moshkovska, O. Prokopova, N. Nikolenko and others [7] propose a methodology for selecting the optimal types of valuation for different objects of accounting depending on the static or dynamic concept of balance sheets, and identify the main cost-oriented approaches to estimating balance sheet indicators, in particular, cover the use of actuarial accounting in management. The development of budgeting is associated with the use of a balanced system of indexes (O. Shpyrko) [8], which is especially important for agribusiness enterprises, where such characteristics as ecofriendlyness of products, quality, customer commitment play an important role.

O. Strelchenko defines budgeting as an integral part of forming and making management decisions for an agricultural enterprise, which will contribute to the implementation of sustainable development concept. The advantage is given to flexible budgeting based on a modeling mechanism for rapid response to changes in the volume of the production portfolio and possible risks [9]. However, these development proposals relate to the budget of costs for agricultural production, balance budgeting it is not exposed practically.

In the EU countries, the budgeting process of agribusiness enterprises is devoted a lot of attention. F. Filippis, R. Henke, L. Salvatici and R. Sardone assert that budgeting is one of the effective means of overcoming the problems related to reform of the Common Agricultural Policy (*the Common Agricultural Policy reform*) [10]. However, this study very superficially highlights the role of balance budgeting for a particular agricultural enterprise.

For agricultural enterprises, the introduction of budgeting has got a number of features, including land as the main limiting factor, seasonality of production, dependence on climatic conditions, the presence of biological assets. Current challenges for budgeting the financial performance of economic systems related to the global COVID-19 pandemic. According to research (G. Grossi, A. Ho, P. Joyce) [11], budgeting of balance indicators in 2020–2021 at the macro and micro levels has changed significantly due to the impact of the negative effects of the pandemic, which must be taken into account and search the methods of their softening and removal in the future.

Agribusiness enterprises need support from the state and non-governmental organizations, loans, compensation for losses, tax holidays and relief from tax pressure. For example, it was in the Netherlands in spring 2020, when in a the conditions of pandemic, the state provided support to the enterprises that grow seedlings and not able to realize their products, in order to avoid bankruptcy and decline of this industry. Thus, agribusiness enterprises play an important role in meeting the needs of the population with quality products, while they need effective management methods that will help in the forming of development targets and their achievement through balance budgeting.

The **aim** of the article is to determine the features of balance budgeting for agribusiness enterprises, systematization of budget types on the basis of different classification features, substantiation of the budgets relationship with the articles of the management balance of agro-industrial enterprises.

Materials and methods. The methodological basis of the study is general and special methods of cognition: to determine the nature and systematization of the budgets classification – comparison, grouping, abstraction and generalization; in establishing the relationship of budgets with balance sheet items – analysis, synthesis, induction, comparison, abstract-logical and systematic approaches.

Results. Agribusiness enterprises operate in specific conditions, which are characterized by seasonality and cyclical production, significant risks and dependence on weather conditions, fluctuations in yield, the difficulty of initial recognition of biological assets and evaluation of agricultural products that based on professional judgment in determining fair value. All this significantly complicates the process of balance budgeting for agribusiness enterprises and requires the development of an adapted approach in accordance with the specifics of their work and clear understanding of the relationship between budget indicators.

The main tasks of budgeting at the enterprise are planning key performance indicators for a certain period, cost optimization, finding ways to maximize profits, coordination and concordance of structural subdivisions activity, business areas. Another important task is communication between departments, agencies, managers and executors, subordinates. Budgeting strengthens the motivation to achieve goals. Budgeting is a tool for monitoring and evaluating the effectiveness of activities, identifying resource needs.

BB is important because it allows to plan and evaluate the future development of the company in terms of growth of the book value of assets in relation to profits. This takes into account the indicators that are assessed of the balance sheet basis: the composition of resources, the efficiency of their use and the liabilities structure to control financial stability and the level of the enterprise solvency.

The budgeting process as a relatively new technology of planning, accounting and control is insufficiently formalized. In view of this, business leaders refuse to implement this management technology, without knowledge of its specific characteristics, scope, objectives and possible benefits of use. Analysis of practical information shows that in Ukraine there are only medium and most successful large agribusinesses that carry out budgeting, but they are mostly limited to the budget of revenues and expenditures, less often – the payment calendar, and very rarely – the balance sheet and adjusting functional budgets [4].

The goals of implementing an internal budgeting system depend on the company. Thus, for fast-growing enterprises it is control over accounts payable and receivable, maintaining the liquidity of assets; for enterprises with diversified agribusiness it is profitability control of certain areas of activity, business processes, distribution optimization of available resources. For holding companies or companies that are related parties and have a divisional structure, budgeting makes it possible to assess the effectiveness of the transfer pricing system. However, for most companies the main purpose of implementing a budgeting system is to ensure "financial transparency", the ability to control, predict indicators [4].

Balance budgeting connects and reconciles almost all types of enterprise budgets, so it is necessary to consider their classification. Systematization of types of budgets on the basis of various classification features is presented in *Table 1*.

Table 1

Enterprises budgets classification on various features

Classification features	Budgets types	Brief description
By approach (forming method)	Flexible	Depending on the amount of costs and planned financial results in accordance with changes in the volume of enterprise activity or the influence of factors and risks. The flexible budget indicates the value of variable costs per unit of output and the increase of mixed costs per unit of activity growth. Creating flexible budgets is advisable when to plan relevant costs
	Fixed	Does not change due to changes in business activity of the enterprise. Such budgets are mainly used for fixed costs of the enterprise, the value of which remains unchanged or conditionally unchanged with increasing or decreasing activity. Fixed budgets are appropriate for partially regulated costs, such as R&D costs, advertising and administrative costs
By method of formation	"Bottom up"approach	Provides collection and filtering of budget information from executors to lower-level managers and further to the company's management. Such budgets are characterized by aggregation of indicators, and the higher the level of management, the more aggregated (generalized) the budget will be

End of the Table 1

Classification features	Budgets types	Brief description
By method of formation	"Top to bottom" approach	Requires from the company's management to understand the basic rules and the ability to form a realistic budget (forecast) for a certain period. "Top-down" budgeting ensures consistency of budgets of individual units and allows to set benchmarks for income, expenses, profits, to assess the effectiveness of responsibility centers
According to the term for which the budget is drawn up	Long-term	The "forecasting horizon" is from one to three years, with a more strategic budgeting period of 5–10 years
	Medium-term	It consists of a period of from six months to year
	Short-term	It consists of a period – a quarter and a shorter period
	On a certain date	Balance sheet draws up at the according to forecast reporting date
By content (purpose)	Marketing budget	Within the budget of marketing the financial planning of marketing activity is carried out. This budget is actually a connecting link between various plans of the management, first of all between marketing and the production plan
	Financial budget	Financial planning is carried out within the financial budget. Planned performance indicators of the enterprise in value terms are measured according to generally accepted standards and classifications in accordance with the accounting documentation
By method of taking into account the influence of statistical factors on the enterprise activities	Static budgets	The indicators depend on the production volume, we may say that if they change, it is mainly under the influence of changes in prices, rather than the level of enterprise business activity
	Dynamic budgets	Compiled taking into account changes in all costs based on the time factor, under the influence of prices for fixed resources. Costs are planned depending on any basic parameter. Most often, this parameter is the volume of production and salilng of the enterprise
Depending on the method	Zero-base-budget	Used for start-ups, development and opening of new markets, products, activities
	Budget from achieved	Method of budgeting based on extrapolation (or incremental method) of previous sufficiently successful indicators for future periods in case of stability of external and internal environment
	Alternative budgets	Additional budgets or general budget with ahead development scenarios to anticipate possible alternatives and choose the most advantageous option
Depending on the budget object	Revenue and expenditure budget	Financial results budget by types of income and elements of expenses, with details by divisions, types of products, directions of activity
	Cash flow budget	Cash flow budget or budget in the form of a planned statement of cash flows in terms of operating, investing and financing activities for the relevant periods with the addition in the form of a payment calendar
	Balance budget	Budget in the form of a balance sheet, a form of financial statements – balance sheet, statement of financial position on the planned dates, usually for each month for relevant year, which agrees on data for all types of budgets. This budget is also a financial budget, which evaluates the level of solvency and financial stability of the enterprise

Source: updated on the basis of processing [4; 6; 10; 12; 13].

In Ukraine, agribusiness enterprises prefer flexible, medium-term budgets, set on the principle of "top down", as well as static budgets, which are formed from the achieved (see *Table 1*) and take into account mostly changes in prices for agricultural products and fuels and lubricants.

Research shows that in many Ukrainian holding companies that are engaged in agro-industrial production, the budget regulation replaces the order, which is incorrect, as the regulation is a document in which the budgeting process can be described more clearly, in detail and consistently. For example, for agribusiness enterprises it is advisable to approve regulations that would contain sections:

- goals, objectives and principles of budgeting;
- description of responsibility centers;

- budget period and schedule;
- analysis of performance indicators and their adjustment, system of motivation and responsibility.

The introduction of budgeting optimizes the management decision-making process as it minimizes costs, analyzes not only the achieved results, but also deviations from the planned indicators and their causes. If the description of the financial model is small in volume, it can be placed in the "Regulations of the budgeting system", which should define [4; 14]: *budget period*, or horizon of budget planning (the term for which the budget is drawn up), and the planning step (periodicity with which the horizon of budget planning is formed within the planning horizon – quarter, month); *terms (schedule)* and *procedure* for development, approval, submission, consolidation and approval of budgets of different levels:

- goals and objectives of the budget management system;
- identification of financial responsibility centers and construction of the company financial structure;
- development of the enterprise budget model, namely types of budgets for the centers of financial reporting. The regulations should reflect the logic of the relationship between budgets, as well as the methodology for building top-level budgets;
- list of responsible persons, procedure for budget analysis.

Indicators of budgets for the centers of financial responsibility for agribusiness enterprises should be formed in terms of: *revenue center* (sales, marketing, logistics – account 70), *costs* (procurement, production units, crop production, animal husbandry, processing of agricultural products – account 23, 26, 27, 91), *profit* (by divisions, types and areas of activity – account 79), *investments* (by types and objects of investment – account 15, 44).

The balance model is the most progressive method of budgeting. The idea of the balance model of budgets is based on the method of accounting, balance generalization of data on the relevant accounts. Changes in the budget are in kind, changes in the budget of cash flows reflect the turnover and balance of cash accounts, funds in bank accounts, other funds and their equivalents.The budget of revenues and expenditures is based on data on the turnover of accounts of income by type, and expenditure by elements. It is important to understand the effect of the double-entry method, which underlies the relationship between all types of enterprise budgets and the systematic approach to its compilation. For example, the employee budget is closely linked to the expenditure budget and the cash flow budget. The sales budget is related to the revenue budget, the settlement budget (receivables) and the cash flow budget (cash flows).

Construction task to *the model on the principle of double entry* is to compare each of the budgets with another, balancing budget. Visually, this construction can be represented as follows: a table with a set of budgets horizontally and vertically, and at the intersection there are paired relationships between budgets at the posting level: the debit turnover of one budget is reflected in the credit turnover of another, and vice versa [4; 9; 14].

As a result of structuring budgets on a balance sheet basis, managers of large companies receive a management tool according to the profile of their activities: departments engaged in production activities have got production costs budget, financial services have got financial investment budget, corporate governance departments have got balance sheet budget and capital movement budget, etc. [4]. Complex business activities become transparent and more manageable, and the procedure for compiling the most important final report is management balance sheet. It is quite simple and unambiguous: accumulated by the end of the period balances on the functional budget will form the relevant balance sheet items (*Table 2*).

The balance sheet is compiled in the form of a balance sheet (in the literature is quite common concept of balance sheet is used) – the first form of financial reporting. It shows aggregated data and reconciles information on the budget of revenues, expenditures, cash flows and other detailed budgets (for example, availability budget and stocks movement, availability budget and use of biological assets, agricultural production, budget of capital investments, etc.) [11; 13].

Table 2

Relationship between budgets and agribusiness balance sheet items

Functional budget	Balance type	Management balance sheet item
Budget for agricultural production	Debit	Agricultural production (crop, livestock), agricultural products (Asset)
Budget of purchases of raw material and supplies		Stocks of raw materials (Asset)
Budget of acquisition(growing) of current biological assets		Cost of current biological assets (Asset)
Budget of acquisition(growing) of long-term biological assets		Cost of long-term biological assets, capital investments (Asset)
Budget calculations with customers		Accounts receivable of buyers, consumers, customers (Asset)
Budget calculations with suppliers	Credit	Accounts payable to suppliers (Liabilities)
Budget calculations with staff and costs of social activities		Accounts payable to employees and the single social contribution (Liabilities)
Budget of income from the sale of agricultural products		Profit from operating activities (Liabilities)

Source: updated on the basis [1; 4; 8].

It should be noted that the balance model of budgets and its internal relationships is somewhat more complex than the "classical" budgeting scheme (as, probably, any more perfect system compared with historical predecessors). However, it has advantages and the necessary elements aimed at effective management of complex business activities, especially in large agro-industrial companies of the holding type, which must have a number of developed to the implemented budgets.

Balance budget supplementing of agribusiness with important analytical indicators to assess the capitalization of assets, assets, liquidity and solvency, financial stability will allow more comprehensive and reasonable approach to the process of developing balance budget indicators and assess their implementation, the consequences for the financial condition.

Thus, balance budgeting has a number of advantages. It allows to coordinate the system of budgets planned indicators of different levels and functional tasks; promotes coordination and interaction between participants in business processes, managers and executors; forms an understanding of targets, tasks and stages of their achievement; allows to compare the results achieved with the desired, to establish the causes of the detected deviations. In addition, it provides an improvement in the motivational component, more efficient use of resources and well-thought-out financing of needs, as well as the accumulation of experience in building and implementing previous budgets.

Conclusion. Budgeting is an important tool for effective management of any activity, as it helps to plan the expected results of management, formalize goals and prescribe ways to achieve them. The balance budget coordinates and complements the budgets of revenues and expenditures together with the budget of cash flows, which allows comprehensive planning of financial and economic activities and effectively monitor their implementation to achieve the desired level of economic development and prosperity.

Peculiarities of BB for agribusiness enterprises are related with the forecast estimates complexity, especially in achieving the desired indicators of financial condition and assets capitalization, as it is difficult to predict the fair value of future harvests, which are affected by numerous factors, take into account significant risks and weather yield, seasonality and cyclical production processes, the complexity of the initial recognition of biological assets and valuation of agricultural products.

Balance budgeting in agribusiness is implemented on the principle of indicators consolidation for biological assets, other current and non-current assets, current liabilities, other liabilities and collateral, components of equity. BB combines the functions of accounting, analysis and control. However, with the right organization, it can also perform a motivating function, if you provide appropriate levels of remuneration for achieving the goals of the enterprise and departments. Balance budgeting allows to effectively forecast and manage financial condition, solvency, financial stability, resources, book value and capital structure in search of the necessary sources of funding, which have got a great importance for agribusiness.

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Фоміна О., Семенова С. Балансове бюджетування підприємств агробізнесу.

Постановка проблеми. *У практичній діяльності бюджетування розглядають як процес планування та складання кошторисів. Балансове бюджетування дає змогу узгоджувати потреби в ресурсах з джерелами їх фінансуванням, а при правильній організації може виступати ефективним інструментом розробки і впровадження фінансово-економічної стратегії підприємства. Балансове бюджетування може забезпечити якісне планування змін в активах, які приносять сільськогосподарську продукцію та примножують наявні біологічні активи, оптимізацію складу пасивів для досягнення цільових значень показників фінансового стану підприємства.*

Аналіз останніх досліджень і публікацій *показав, що тема бюджетування є актуальною, проте важливість і особливості саме балансового бюджетування для підприємств агробізнесу висвітлені недостатньо.*

Метою *статті є визначення особливостей балансового бюджетування, виділення класифікаційних ознак та обґрунтування взаємозв'язку бюджетів зі статтями управлінського балансу агропромислових підприємств.*

Матеріали та методи. *Методологічною основою дослідження є загальнонаукові методи пізнання: аналіз, синтез, індукція, дедукція, порівняння, абстрактно-логічний і системний підходи.*

Результати дослідження. *Для агропідприємств балансове бюджетування має ряд особливостей, серед яких: земля як основний обмежуючий фактор, сезонність виробництва, залежність від природно-кліматичних умов, врахування ризиків, складність первісного визнання біологічних активів і сільськогосподарської продукції, яка базується на застосуванні професійного судження у визначенні справедливої вартості. Серед шести основних класифікаційних ознак балансового бюджетування безпосередньо виділяють ознаку за об'єктом складання бюджету. У свою чергу балансові бюджети можуть поділятись залежно від строків складання, принципів побудови, підходів, методики, цільовим призначенням. Балансовий бюджет визначає статичні показники на відповідну дату, узгоджує між собою розрахунки по всіх інших видах бюджетів і надає інформацію про джерела зростання вартості активів та прибутків.*

Висновки*. Балансове бюджетування на підприємствах агробізнесу реалізується за принципом консолідації показників по біологічних активах, інших оборотних та необоротних активах, поточних зобов'язаннях, інших зобов'язаннях і забезпеченнях, складових власного капіталу. Балансове бюджетування поєднує функції обліку, аналізу та контролю. Балансове бюджетування дає змогу ефективно прогнозувати й управляти біологічними активами, ресурсами, балансовою вартістю та структурою капіталу, фінансовим станом загалом у пошуку необхідних джерел фінансування, що має велике значення для підприємств агробізнесу.*

Ключові слова: бюджет, балансове бюджетування, підприємство агробізнесу.

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CLUSTERING OF BANKS ACCORDING TO THEIR BUSINESS MODELS

The business models of banks were identified according to previously formed parameters. The authors distinguished business models of Ukrainian banks such as retail, universal, corporate, corporate with retail financing. The paper studies ranking method to analyze and compare banks business models in terms of financial and risk indicators.

Keywords: bank business model, clustering, k-means method, risk and financial performance indicators, ranking method, indicator rank.

Background. Banks of Ukraine differ especially in the composition of assets, liabilities, income, and expenses, the level of risk and profitability, etc. In its general form, the structure of assets, liabilities, and income of a bank reflects the business model. According to the SREP (Supervisory review and evaluation process), banks and supervisors should identify and analyze the business model. Different business models may affect the behavior of banks differently and have differences in their level of profitability and risk. The choice of business of the bank depends on the efficiency and stability of its operation, as well as its competitiveness in the market.

Analysis of recent research and publications. Scientific views on the interpretation of the term "bank business model", the choice of criteria and systems of indicators for the selection of business models types are identified in the works of L. Sachynska [1], I. Movchanenko [2], I. Kasatonova [3], P. Kutsyk [4], P. Alakozova [5], O. Lyubich, G. Bortnikov, G. Panasenko [6] etc. Ukrainian scientists and foreign scientists, among whom are the most famous A. Derkachenko and Y. Khudoliy [7], V. Rashkovan and D. Pokidin [8] R. Lug, M. Tomkus, K. Schmalz [9], M. Farne, and A. Vuldis [10], R. Roengpitya, N. Tarashev, K. Tsatsaronis, A. Villegas [11], M. Tsernov, T. Urbano [12], F. Mergaerts, R. Vennet [13] and others study theoretical and practical issues of using the tools of clustering and analysis of banks according to different business models.

The normative documents of the NBU consider the issues of business models identification, evaluation, and decision-making on the provision of emergency financing based on the results of their analysis. The regulator emphasizes the need to assess the business model, which should be consistent with the general risk appetite of a bank [14]. This issue remains debatable and unresolved, determines the relevance of the chosen research topic and its purpose.

The **aim** of the paper is to find out the essence of methodological approaches to the identification of business models of Ukrainian banks, as well as to give suggestions for their improvement.

Materials and methods. The theoretical and methodological basis of the study is the scientific works of foreign and domestic scientists. General scientific and special methods of cognition such as abstract-logical, grouping (theoretical generalization and formation of conclusions on the identification of business models), statistical (absolute and average values, clustering method) for distinguishing business models of Ukrainian banks were used in the paper.

Results. Today banks, like other businesses, operate in a highly turbulent economic environment, which is characterized by, on the one hand, an increase in the level of risk, on the other hand a decrease in margins. In such conditions, banks are looking for the most optimal option for managing assets and liabilities, which forces them to constantly improve their business models and strengthen the competitive position in the market and increase the market value.

There are different definitions of the term "business model" of a bank in the economic literature. For example, the business model is considered as a set of banking activities in the works of M. Farne and A. Vuldis) [10]. R. Lug, M. Tomkus and K. Schmalz [9] define this term a set of components (somewhat broader) used to overcome competition and achieve optimal profits in the financial market, where a similar product strategy is used, F. Mergaerts, R. Vennet [13] think that "business model" is the structure of assets, liabilities, capital and income.

We believe that in general, the business model is a systematization of assets and liabilities of a bank by their structure and volume, currencies, maturities, types of business, and banking products, types of customers and other criteria, the choice of which depends on the in-depth of the study. The background reflection of the bank's business model is its risk indicators and financial indicators.

We analysed existing scientific achievements and highlighted that the methodological approaches to the identification of business models differed in the list of indicators based on the public financial statements of banks and the qualitative characteristics of banks, expert assessments. Thus, the *cluster analysis* is often used for processing the received information.

The nature of the *cluster* is revealed in the etymology of this word. The English word *cluster* means a bunch, a bush. The meaning of the verb form is to grow in bundles, to form clots. The essence of the statistical interpretation of clustering is as follows: the data matrix $n \cdot m$ is fed to the input, where n is the number of banks; m is the number of variables by which they are grouped into separate clusters. Variables are the characteristics of banks, and the cluster of several of them is determined by the smallest distance between their values. Each cluster is a separate business model of the bank.

There are numerous studies on the identification of business models of banks based on cluster analysis in the domestic and foreign scientific studies. Scientists use neural networks and *k*-means methods to build clusters of banks on business models. L. Dolinsky, I. Miroshnychenko, V. Korchynsky [15], V. Rashkovan, D. Pokidin use self-organizing maps Kahonen, which are based on artificial neural networks [8] for the identification of banks business models. Clustering of banks by business models based on the method of *k*-means and construction of the dendrogram (hierarchical clustering) is considered in the papers of O. Primerov, G. Kiselyov [16].

This study is based on the use of the most common method of cluster analysis – *k*-means, which is a non-hierarchical and iterative method, which was proposed in the 1950s of the twentieth century mathematician G. Steinhaus and Stuart Lloyd. This method was very popular due to its simplicity, clarity of implementation, and fairly high quality of the results [17].

The clustering algorithm using the k-means method is traditionally performed in a certain *sequence*.

At the first stage, the choice of the number of k clusters is made, based on the method of the elbow (*Figure 1*), which calculates the Euclidean distance for any number of clusters from 1 to 10. The number of clusters is chosen, the difference between the previous number and the next is the largest.

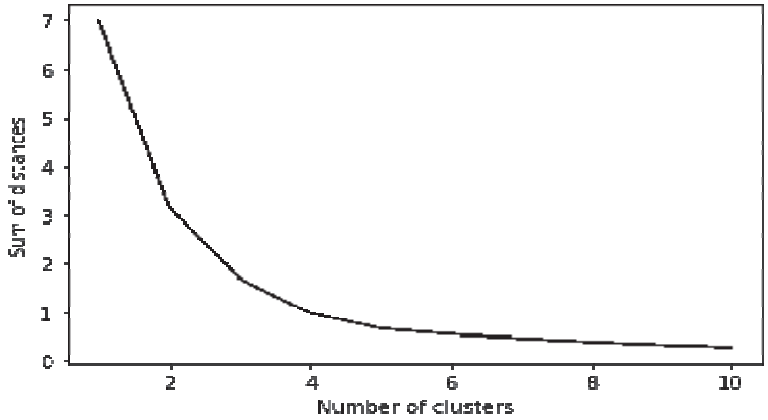

Figure 1. Elbow Method

Source: [17].

k centroid points which have an arbitrary location are formed at the second stage. Assignment of points to the centroid occurs by determining the Euclidean distance based on the formula:

$$p(x, y) = ||x - y|| = \sqrt{\sum_{p=1}^{n}(x_p - y_p)^2},$$

where $x, y \epsilon R^n$;

x_p – *x is axis value,* y_p – *y is axis value.*

The distance of all points to the centroids is calculated, new centroids are formed and the old ones are removed until the minimum distance of the points to the centroids is determined at the third stage.

In the course of this study, the clustering of Ukrainian banks was carried out as follows – parameters for cluster construction were selected; banks were grouped into clusters using the Python programming language and based on their description of business models; the indicators of business models were clarified, upon which the distribution of banks was adjusted.

The focus group has been formed to cluster Ukrainian banks, represented by 70 operating Ukrainian banks. The calculations of the coefficients are based on the data of the supervisory statistics of the NBU as of July 1, 2021.

It is necessary to form a system of indicators to identify bank business model. The review results of domestic and foreign studies show that scientists offer different approaches to the choice of indicators for building clusters of bank business models. For example, V. Rashkovan and D. Pokidin use the following indicators in the process of business model identification: assets/branches (UAH); average loan repayment period (in years); average loan amount (thousand UAH); share of equity and subordinated debt (shows the share of borrowed funds of the bank); the share of retail loans in income-generating assets; the share of retail financing in total liabilities without subordinated debt; the share of loans in assets [8]. Some of these indicators cannot be calculated based on public financial statements of individual banks, for example, the average maturity of loans (years), the average loan amount (thousand UAH).

A. Sinyuk identifies the following indicators (% of assets): bank loans, bank liabilities, loans to legal entities, liabilities to legal entities, loans to individuals, liabilities to individuals, trade assets [18] to form clusters of business models. This list is too cumbersome to identify business models. In addition, there is a close relationship between some of these indicators, leading to duplication of information.

O. Primerova, G. Kiselyova cluster banks by the following financial indicators:

return per unit of assets (ROA) – indicates how much net profit per unit of bank assets;

instant liquidity of the bank (H4) – reflects the ability of the bank to ensure the timeliness, completeness and continuity of all its monetary obligations;

capital adequacy (H2) – reflects the bank's ability to timely and fully pay its liabilities;

interest margin – determines how successfully the bank acts as an intermediary between bank depositors and borrowers [16].

M. Tsernov and T. Urbano propose to use a hybrid approach to highlight business models that uses both qualitative and quantitative indicators [12].

The National Bank of Ukraine provided the following list of indicators: loans to businesses; loans to individuals; funds placed in other banks; funds of business entities; funds of individuals; funds of other banks and international financial organizations [19] to identify bank business models. However, the NBU methodology does not specify exactly how the indicators are calculated (relative to the balance sheet currency or the share in the total volume of loans/deposits).

We considered the following provisions in research: calculations should be based purely on public financial statements; the indicator should be significant for the identification of business models; information should not be duplicated in determining individual indicators.

The article provides to use only two indicators to identify the Ukrainian bank's business models – deposits of individuals / total liabilities, loans to legal entities / total loans. The choice of these indicators is based on the following considerations: deposits of individuals are the largest in terms of both volume and share in the liabilities of banks, as well as a stable source of formation of the resource base of banks; the share of loans to legal entities in their total volume in the banking system of Ukraine is almost 80%, so this indicator is important for characteristic of the banks activities.

The article offers the calculations based on these indicators, the results of which are the basis for the separation of four clusters of banks in Ukraine. The authors calculated the average values of the parameters, as well as their range for each business model to determine which cluster the business models belong to.

The *first cluster* "Corporate Business Model with Retail Financing" is characterized by the average share of loans to legal entities in the loan portfolios of Ukrainian banks which is 94.2 %, the main share in liabilities is deposits to individuals, the average of which is 43.12 %. The *second cluster* "Universal Business Model" with average values of corporate loans/ total loans is 60.88 % and deposits of individuals/total liabilities are 38.97 %. The *third cluster* "Corporate Business Model" with average values of loans to legal entities/total loans is 93.94 % and deposits of individuals/total liabilities are 13.66 %. The *fourth cluster* is the Retail Business Model with 12.28 % of the average share of corporate loans/total loans and an average share of retail deposits/total liabilities is 76.77 %.

The results indicate that there are four business models, in contrast to the NBU methodology, which identifies five business models: *universal* – significant shares in assets and liabilities belong to transactions with legal

entities, individuals, other banks and non-banking financial institutions; *retail* – assets and liabilities are dominated by transactions with individuals; *corporate* – a significant share in assets are loans to legal entities, in liabilities – funds raised from legal entities; *corporate with retail financing* – the main share in assets belongs to loans granted to legal entities, in liabilities – funds raised from individuals; limited credit intermediation – the share of loans granted to legal entities and individuals is insignificant (less than 30 %) or the main share of loans granted to a limited number of persons, or active operations are financed with own funds [19].

The business model "limited credit intermediation" is inappropriate. Banks, which belonged to the business model "limited credit intermediation" according to the NBU classification, according to the author's methodological approach are classified into different business models according to the share of their credit operations with legal entities in the loan portfolio and deposits of individuals in total liabilities.

Author's clustering of Ukrainian banks according to four business models is presented in *Figure 2.*

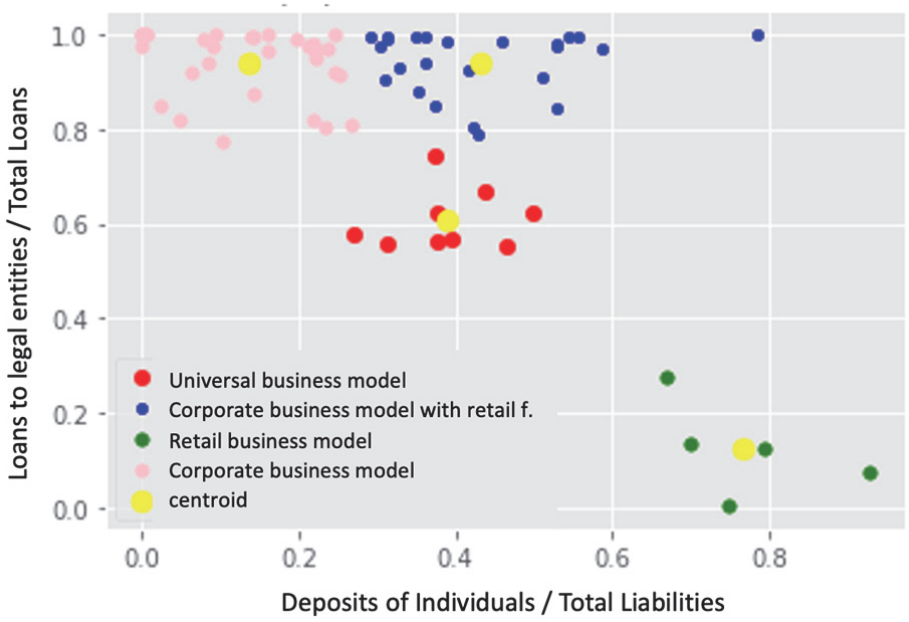

Figure 2. Clustering of Ukrainian banks according to business models as of July 1, 2021

Source: compiled by the authors on the basis of the supervisory statistics of the NBU [20].

The results of the clustering of Ukrainian banks show that 9 banks choose the universal business model (for example, JSC "ALFA-BANK", JSC "PUMB", JSC "KREDOBANK"); 26 banks prefer corporate models with retail financing (including JSC Oschadbank, JSC Raiffeisen Bank Aval, JSC UKRSIBBANK, JSC PROCREDIT BANK); 5 banks choose retail models

(JSC "UNIVERSAL BANK", JSC CB "PrivatBank", JSC "A – BANK" and others); 30 banks prefer corporate models (among them JSC "Ukreximbank", JSB "UKRGASBANK", JSC "CREDIT AGRICOLE BANK", JSC "ING Bank Ukraine", JSC "CITIBANK").

The authors offer methodological approach and conclude that the structure of the loan portfolio by type of borrowers significantly affects the formation of the bank's business model. The asymmetry of the location of banks by business models is presented in *Figure 3*.

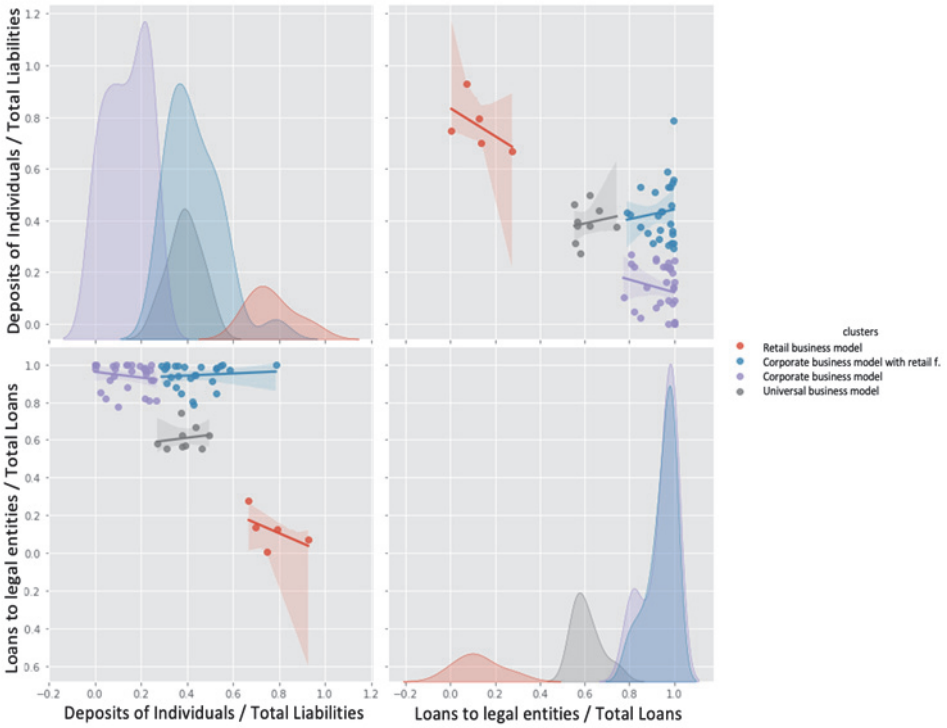

Figure 3. Clustering of Ukrainian banks according to business models and their asymmetry as of July 1, 2021

Source: compiled by the authors on the basis of the supervisory statistics of the NBU [20].

Another situation with asymmetry is in *Figure 3*, as for banks that belong to a corporate or retail business model, the share of loans granted to corporate and retail customers can reach 100 %. Such banks include ING Bank, JSC Deutsche Bank DBU, or JSC SEB CORPORATE BANK. Usually, a special asymmetry is formed in the direction of increasing the share of loans granted to the relevant types of customers in the loan portfolio of banks.

Each business model is characterized by a certain level of risk and financial performance [18]. To analyze them, it is important to select indicators of risk and financial performance of banks, which could be calculated on official financial statements. Such indicators should include authorized capital and reserves to the balance sheet currency, the share of cash and cash

equivalents in total assets, the ratio of loans to deposits, the ratio of loans to total assets, the ratio of operating expenses to total assets, return on assets, return on capital, rate of return (net profit / total income), measure of risk appetite (risk-weighted assets/total assets), the share of problem loans in the loan portfolio.

The average values on each business model are calculated according to the given list of indicators (*Table 1*).

Table 1

Average value on risk indicators and financial indicators on business models of the banks of Ukraine as of July 1, 2021

Business model	Authorized capital and reserves to total assets	The share of cash and cash equivalents in total assets	The ratio of loans and deposits	The ratio of loans to total assets	Share of non-performing loans	Measure of risk appetite	ROA	ROE	Rate of return	The ratio of operating expenses to total assets	Number of banks
Retail	0.2111	0.0367	0.7516	0.4818	0.29	0.7	0.0189	0.1869	0.284	0.0187	5
Corporate	0.2396	0.0617	4.4748	0.2357	0.2296	0.33	0.0068	0.0618	0.2447	0.0095	30
Universal	0.1848	0.0702	0.5768	0.3905	0.117	0.524	0.0048	0.0482	0.091	0.0098	9
Corporate with retail funding	0.1844	0.0758	0.7518	0.4413	0.178	0.584	0.0035	0.0302	0.0754	0.0123	26

Source: compiled by the authors based on the supervisory statistics of the NBU [20].

Data from *Table 1* (the deeper color, the better) show that the retail and corporate business model with retail financing, which specializes in serving mainly one type of customer, is characterized by the highest level of credit risk, the numerical value of which is 0.4818 and 0.4413, respectively.

The comparison of banks' business models in terms of risk and financial performance is based on the ranking method, the results of which are presented in *Table 2.*

Table 2

Ranks on financial indicators and risk indicators on business models of Ukrainian banks as of July 1, 2021

Business model	Authorized capital and reserves to total assets	The share of cash and cash equivalents in total assets	The ratio of loans and deposits	The ratio of loans to total assets	Share of non-performing loans	Measure of risk appetite	ROA	ROE	Rate of return	The ratio of operating expenses to total assets	Number of banks
Retail	3	1	3	1	1	1	4	4	4	1	5
Corporate	4	2	1	4	2	4	3	3	3	4	30
Universal	2	3	4	3	4	3	2	2	2	3	9
Corporate with retail funding	1	4	2	2	3	2	1	1	1	2	26

Source: compiled by the authors based on the supervisory statistics of the NBU [20].

The ranks of indicators are given in the *Table 2* (the deeper color, the better), which are determined in descending order (the better value of the indicator, the higher its rank). The amount of ranks is calculated separately for indicators of risk and financial performance.

Data from *Tables 1, 2* illustrate the following pattern: a riskier business model of banks generates higher financial performance.

Conclusion. The highest rank of *risk* (its lowest level) is observed in the *universal* business model, followed by *corporate*, *corporate with retail financing*, and *retail* business models, ranked from lower to a higher level of risk.

A similar ranking of banks' business models is based on *financial performance* indicators (the higher the rank, the better). The retail and corporate business models have the highest rank of financial efficiency. Lower ranks of financial performance are inherent in the corporate business model with retail financing (in 4th place) and the universal business model (in 3rd place). The most attractive is the corporate business model of the bank with an *integrated assessment* of the business model (considering both financial performance and risk).

The research results can be used by the National Bank of Ukraine for improving the methodology of banks' business models identification, as well as for deciding on the differentiation of regulatory instruments by the NBU, based not only on the size of a bank but also on the level of risk of its business model; when banks analyze their business models in terms of not only their risks and financial performance, but also a comprehensive assessment.

Banks' business models are not static due to the influence of exogenous and endogenous economic variables, such as the evolution of the banking system, macroeconomic and prudential restrictions, the competitive environment, financial and technological innovation, customer demand and business goals.

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Шульга Н., Омеленчук В. Кластеризація банків за бізнес-моделями.

Постановка проблеми. *Банки України суттєво різняться за складом активів, пасивів, джерел отримання доходів та витрат, рівнем ризиків та прибутковості діяльності тощо. В узагальненому вигляді структура активів, пасивів та доходів банку відображає його бізнес-модель. Відповідно до наглядового підходу – SREP (Supervisory review and evaluation process) банки та наглядові органи повинні проводити ідентифікацію та аналіз бізнес-моделей. Різні бізнес-моделі неоднаково можуть впливати на поведінку банків і мають відмінності в рівні їх прибутковості та ризиків. Від вибору бізнес-моделі банку залежить ефективність та стабільність функціонування, а також його конкурентоспроможність на ринку.*

Аналіз останніх досліджень і публікацій *показав, що попри наявність суттєвих напрацювань з цієї проблематики, вона залишається дискусійною та до кінця не вирішеною. Це обумовило актуальність обраної теми дослідження та визначило його мету.*

Метою *дослідження є розкриття сутності методичних підходів до ідентифікації бізнес-моделей банків України, а також надання пропозицій щодо їх удосконалення.*

Матеріали та методи. *Теоретико-методологічну базу дослідження становлять наукові праці зарубіжних та вітчизняних учених. В основу дослідження покладено загальнонаукові та спеціальні методи пізнання: абстрактно-логічний, групування; статистичні.*

Інформаційною базою дослідження є матеріали НБУ щодо деяких показників ризиків та фінансових показників банків України; фінансова звітність окремих банків; наукові публікації з досліджуваної теми.

Результати дослідження. *За результатами дослідження виокремлено чотири бізнес-моделі, на відміну від методики НБУ, згідно з якою ідентифіковано п'ять бізнес-моделей. Кожну бізнес-модель можна оцінити за показниками ризику та ефективності.*

Висновки. *Найменш ризиковою є універсальна бізнес-модель, за якою слідують корпоративна, корпоративна з роздрібним фінансуванням та роздрібна бізнес-моделі, що проранжовані від нижчого до вищого рівня ризику. При інтегрованій оцінці бізнес-моделі (з одночасним урахуванням як показників фінансової результативності, так і ризиків) найбільш привабливою є корпоративна бізнес-модель банку.*

Ключові слова: бізнес-модель банку, кластеризація, метод *k*-середніх, показники ризиків та фінансової результативності, метод ранжування, ранг показника.

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BANKING DIGITALIZATION DURING THE COVID-19 PANDEMIC*

This article studies the impact of the COVID-19 pandemic on the processes of innovative development and digital transformation of the banking sector. The authors analyze the COVID-19 pandemic as a factor in accelerating the introduction of innovative digital banking technologies. The key changes that took place in the banking sector under the influence of the coronavirus pandemic were considered, which allowed to identify main vectors of digitalization of banking processes in Ukraine and to develop criteria for classifying banks according to their digital development.

Keywords: digitalization, digital economy, distance services, digital sales channels.

Background. The financial market has changed dramatically in recent decades. It has transformed from a model of traditional corporate business of banks to entire ecosystems of banking and non-banking markets during this time. New challenges also dictate transformations that stimulate the active growth of digital transactions and form the demand for digital products and services in the financial sector. Domestic digital banking could still develop as a classic banking for a long time, but the COVID-19 pandemic changed all plans and became an impulse for the accelerated digital transformation of the banking business. The research "COVID-19. Sustainable" by the consulting group One Philosophy shows that the pandemic has become a catalyst for launching new products or services in 71 %

* The article was prepared as part of the research work "Digital Transformation of Trade, Economic and Tourist Systems of Ukraine" (state registration number 0121U112231).

of organizations, and 55 % have attracted new partners to create joint initiatives [1]. Therefore, the issue of digitalization in the domestic banking sector is quite relevant today and needs further investigation.

Analysis of recent research and publications. The study of the impact of the COVID-19 pandemic on the development of banking sector and the level of its digitalization is interesting for both domestic and foreign scientists and practitioners. J. Dovhan identified the main problematic aspects of the banking sector in the context of the COVID-19 pandemic and proposed measures to avoid the consequences of the crisis for banking institutions [2]; A. Zaverbny, N. Sokulsky studied the current state of the banking system digitalization and society experience of using banking services during the pandemic, and also considered the prospects for the future of the banking business [3]; L. Marichak, I. Masyk considered the accelerated development of electronic and mobile banking in the face of restrictions and the emergence of new opportunities for banks and their customers in connection with the transition to remote service in many areas of society in their work [4]; Lai Cao Mai Phuong studied the response of the banking sector to lockdown / blocking reports to prevent the COVID-19 epidemic in Vietnam [5]; V. Varzaba, T. Boru, N. Mosteanu, A. Faccia, L. Cavaliere, S. Bhatia, Z. Korzeb, P. Niedziolka and others also considered this issue.

It should be noted that scientists study the impact of the COVID-19 pandemic in the context of negative consequences for the financial condition of banks and their clients, deteriorating indicators of financial stability and the need to rethink the policy of state banking regulation and supervision. The research of the impact of the pandemic on digital processes in the banking sector deals with some papers of domestic authors who state only some facts of introduction of certain technologies. At the same time foreign scientists and large professional audit and consulting companies focus on European and American experience on digital transformation and its global aspect. It is necessary to study systematically the impact of the COVID-19 pandemic on the digital transformation of the banking sector of Ukraine and the development of criteria for classifying banks according to their level of digital development, taking into account national characteristics, experience and practice.

The **aim** of the article is to study the impact of the COVID-19 pandemic on the digitalization processes of domestic banks.

The tasks of the article are:

- to study the impact of the COVID-19 pandemic as a catalyst for the implementation of the digital banking technologies;
- to identify key vectors of the digitalization processes in Ukrainian banks;
- to develop a system of classification features for grouping banks according to the level of their digital development.

Materials and methods. Scientific methods of theoretical generalization, analysis and synthesis, grouping, system approach were used in the paper. The information and analytical base of the research included materials

of the National Bank of Ukraine, reports of the USAID project "Financial Sector Transformation", scientific articles, etc.

Results. It should be noted that the use of advanced innovative technologies in all spheres of human activity, including finance, is a modern trend in the world. Such technologies in the financial sphere have a positive effect on the development of the country's economy and on the general welfare of society. Many countries of the world are gradually and dynamically implementing the tools of the "digital economy", which is based on the introduction of the latest computer technology, because of its obvious competitive advantages of long-term innovation and economic development.

Digital transformation or digitalization is a process that an organization goes through when it changes from an outdated approach to new ways of working and thinking by using digital, social, mobile, and new technologies [6]. Moreover, digital transformation takes a customer-driven, digital-first approach to all aspects of a business, from its business models to customer experiences to processes and operations. It uses AI, automation, hybrid cloud and other digital technologies to use data and drive intelligent workflows, faster and smarter decision-making and real-time response to market disruptions [7]. Digital transformation is considered a driving factor that offers a solution to the challenges that banks currently face. According to the KPMG study "Digitalization in banking beyondCOVID-19", digitalization is about the use of technology and innovative tools to improve the efficiency and efficacy of a given process; whether by building in-house capabilities or partnering with third-parties to do so [8].

The authors of the study emphasized that digitalization is used as a broad term, which covers various dimensions and value chain activities of a bank, and other businesses, but there are digital specific tools for banks which enable to solve concrete problems.

Digitalization can have a meaningful impact on banking sector, tools and strategic themes which include:

- simplifying journeys and using digital partners to drive customer centricity;
- strengthening cyber security to manage increased digital traffic and control IT risks;
- rationalizing the application landscape to drive cost reductions and control IT risks;
- using cloud technology to increase flexibility while lowering costs;
- strategic IT outsourcing to increase operational resilience and flexibility;
- using blockchain to facilitate ESG-reporting and practices [8].

The development of the banking system is a key part of the financial system of any country in modern conditions; it is characterized by digitalization of all banking processes. The results of the banks in 2020 showed that the COVID-19 pandemic became a significant factor in intensifying the digital transformation of the banking business as a whole. During the pandemic period and quarantine restrictions, all participants in the banking business were able to appreciate the benefits of the updated customer service

format. The necessity to reduce physical contacts between people, transport restrictions encouraged banks to restructure the work of offices and branches very quickly, to organize remote work of staff, to develop mobile applications and other remote service channels.

In general, the consequences of the pandemic and the effect of quarantine restrictions and anti-epidemiological measures in Ukraine were manifested in the strengthening of the certain trends.

Firstly, such sales channels as Internet banking, SMS-banking, mobile applications, chatbots, mobile bankers, self-service areas 24/7, fully automated offices were used for all clients groups as a transition to remote and online service format.

The largest leaders in digital banking by number of users are Privat24 from JSC "Privat Bank" (over 12 million), Oshchad 24/7 from JSC "Oshchadbank" (4 million), Monobank from Universal Bank (3 million) in the domestic market. It should be noted that online banking Privat24 is considered as the best digital banking in Ukraine more than 5 years, which is recognized not only in Ukraine, but also abroad.

Research Institute Capgemini carried out the survey, 11 200 consumers from 11 countries participated in it. The Institute made the report "COVID-19 and the financial services consumer" and 45 % of respondents said that they used mobile banking, which was the most convenient for them since the start of the pandemic [9].

Secondly, reorganization of the bank's branches network, staff reduction is the part of optimization.

Ukrainian banks have reduced the number of existing structural units in recent years to optimize their own network and focus on remote service (*Figure 1*). In general, the number of banking branches is decreasing for the ninth year in a row. State and foreign banks closed their branches more actively than others.

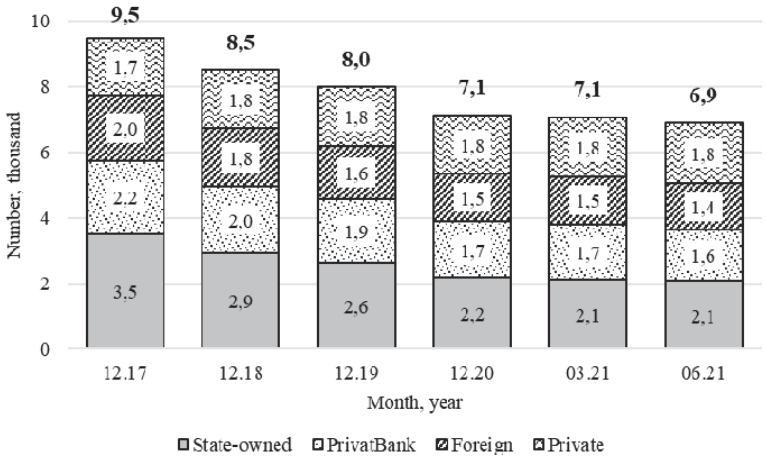

Figure 1. Separate structural branches and head offices of Ukrainian banks

Source: [10].

According to the survey research by the Capgemini Research Institute, one-fifth of consumers before the pandemic frequently visited the branch and the same number said that they would continue to visit them. However, most consumers have announced the transition to remote banking via the Internet, mobile banking, messengers and chat bots.

The staff reduction was also the result of increased digitalization and the closure of bank branches. The trend of changing the number of staff is shown in *Figure 2*. For the 6 months of 2021, a total of 1.1 thousand employees were laid off, the largest staff reductions were made by state and foreign banks. At the same time, private banks hired almost 1.7 thousand people [10].

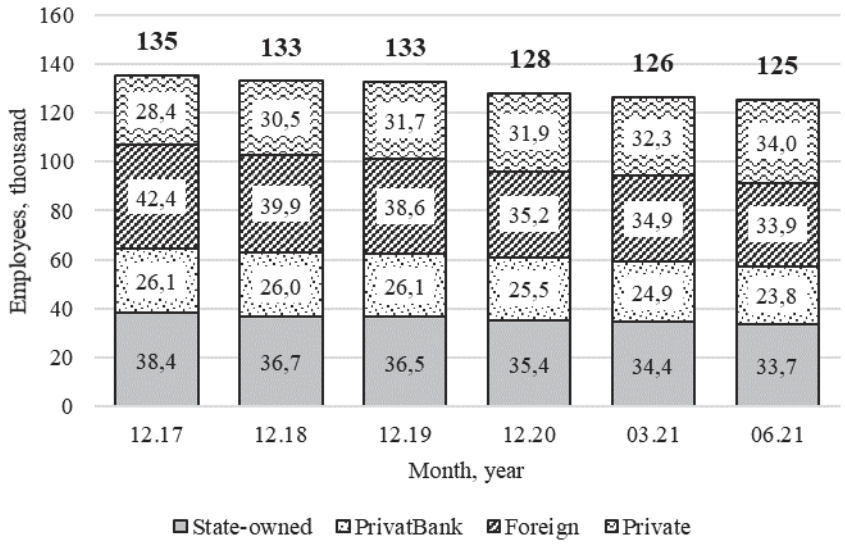

Figure 2. The level of staff in banks, thousand employees

Source: [10].

Thirdly, transformation of the payment infrastructure through increasing the number of banks payment terminals reduces the number of ATMs.

The constant expansion of the payment infrastructure for non-cash payments continues in 2021. The number of sale points that accept payment cards has increased by 2 % since the beginning of 2021 up to 333.5 thousand. The network of trade pos-terminals in Ukraine has also grown by 2 %. Almost 87 % of trade payment terminals provide the possibility of contactless payment. The number of payment terminals (contact and contactless) per 1 million permanent population of Ukraine was 9.6 thousand on April 1, 2021 (8.3 thousands on April 1, 2020).

It should be noted that with the growth of the payment terminals network (*Figure 3*), the number of ATMs of banks is reduced (*Figure 4*), which was caused by the global cashless trend, so it provides decreasing cash payments and total amount of cash in circulation.

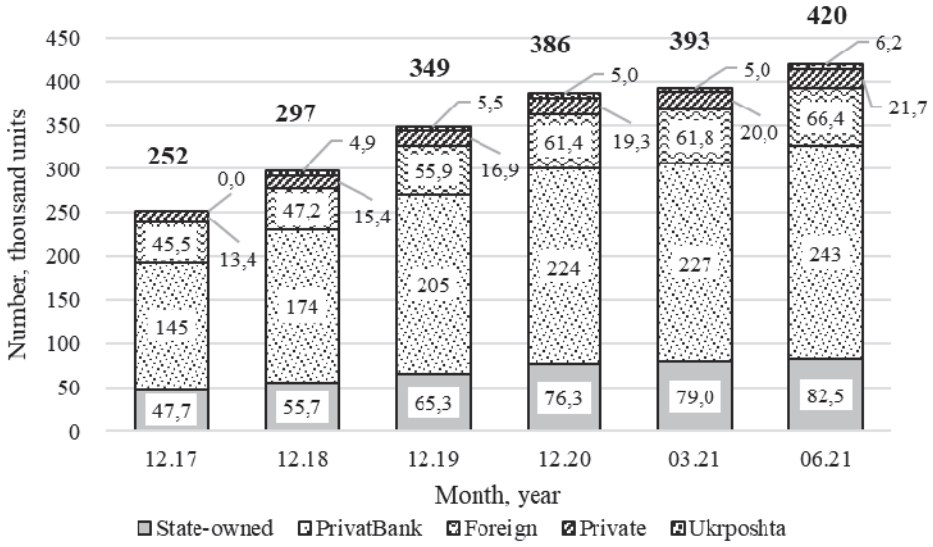

Figure 3. Number of POS terminals, thousand units

Source: [10].

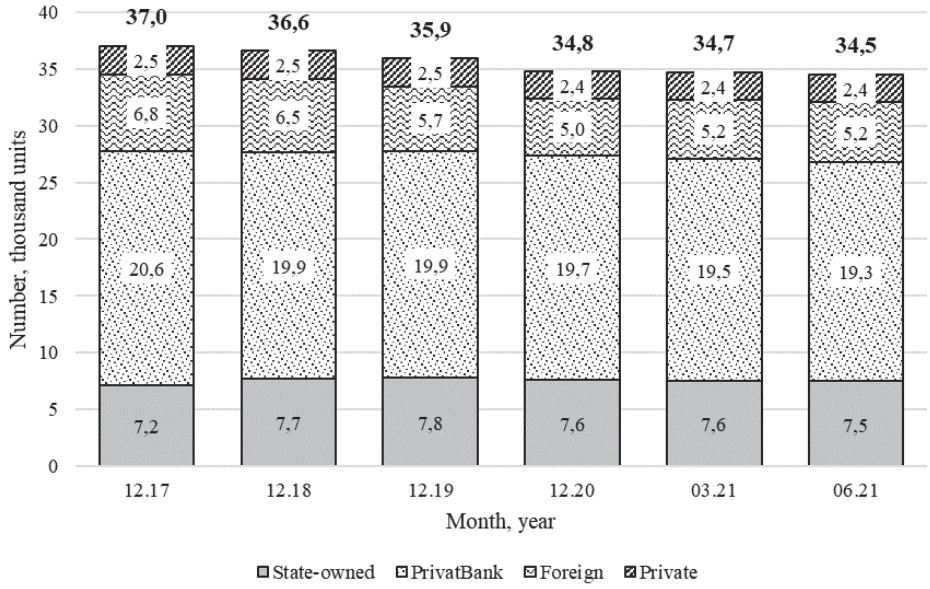

Figure 4. Number of self-service bank machines (ATMs, deposit ATMs, self-service points)

Source: [10].

The growth of non-cash transactions and contactless payments is the fourth trend.

The consumers' habits of financial services have changed quite dramatically during the pandemic. Consumers are increasingly using contactless payment methods using smartphones and Apple Pay and Google Pay technologies (during the pandemic, the number of such transactions has increased almost in 2 times). The popularity of contactless and tokenized cards is due to the high level of security, speed and convenience of operations with their using. According to the NBU, the number of contactless cards used by consumers to carry out transactions has increased by almost 10 % to 14.1 million cards since the beginning of 2021. The volume of contactless transactions (transactions with a contactless card or with the help of smartphones and other gadgets) in the first quarter of 2021 amounted to 119.0 billion UAH. By the way, Ukraine is in the TOP-10 countries in Europe for payment using devices worn on the body or clothing (so-called wearables), such as watches, rings and more [11].

The smart phonization of population is growing every year and smartphones are becoming one of the main gadgets for Internet access (accounting for 53.3 % of all web requests) and online banking, respectively [12]. That is why banks mobile applications have become the most popular tool to access to online banking. The research carried out by Fidelity National Information Services (FIS) shows that at the beginning of the pandemic mobile banking traffic increased by 85 % in April 2020, a new digital registration increased by 200 % [13].

The total number of transactions (non-cash and cash) with payment cards issued by Ukrainian banks during January-March 2021 amounted to 1691 million units, and their value was UAH 1089.1 billion. The number of these transactions increased by 22.1 % in comparison with the same period last year, and the amount increased by 18.3 %. Also non-cash transactions prevailed among payment card transactions by number and value in the first quarter of 2021. Thus, in the first quarter of the current year 9 out of 10 transactions were non-cash (almost 90 % of the total number of payment card transactions) [14].

The share of non-cash transactions (*Figure 5*) amounted to 61 % of all card transactions. In the first quarter of 2020 these indicators were 85.4 % and 54.6 %, respectively. In general, during January-March 2021, in comparison with the same period last year, the number of non-cash transactions with payment cards increased by more than a quarter (28 %) and amounted to 1 512.8 million units, and the value comprised a third (32 %) and reached UAH 664.3 billion. In general, more than a third of the number of non-cash transactions with a payment card in the first quarter of 2021 were carried out on the Internet (36.7 %). This amounted to almost UAH 202.3 billion during January-March 2021. The volume of contactless transactions (transactions with a contactless card or with smartphones and other gadgets) amounted to UAH 119.0 billion in the first quarter of 2021[14].

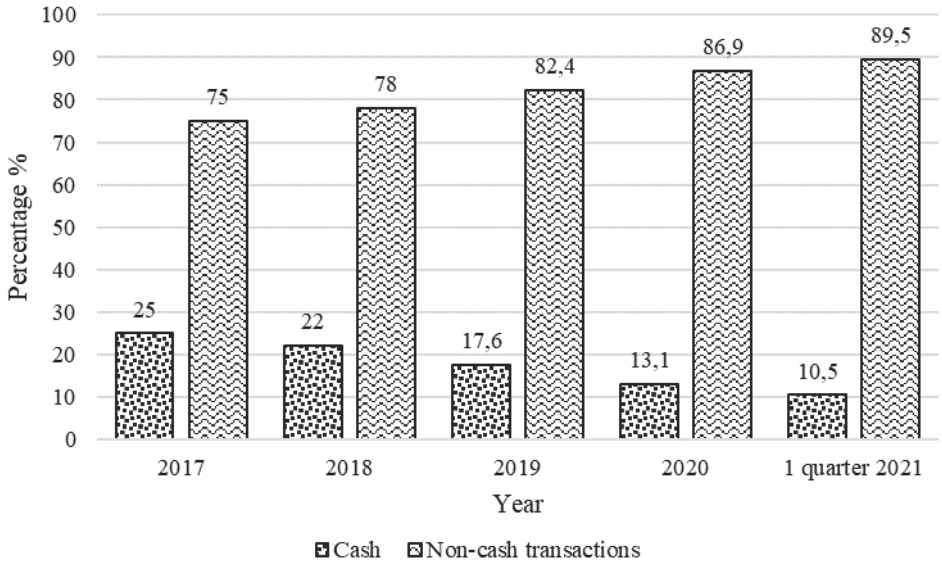

Figure 5. The growth of the share of non-cash transactions in number, percentage %

Source: [14].

Development of digital services and products is the fifth trend. Such new banking products as alternative types of payments (contactless and mobile payments, B2B payments, QR-payments, payments through mini-payment terminals, fast transfers by drag'n'drop, electronic and digital wallets), digitized credit and deposit cards, online collection, online services for brokers, algorithmic stock trading, etc. are very popular in Ukraine at present.

In general, the improvement of the range of banking products and services under the influence of digitalization proceeds is in two directions. The first is a change in the form of providing existing products and services, including the addition of advanced electronic capabilities, greater availability and convenience of online account management. The second direction involves the development of new products and services, such as virtual cards or cash registers in smartphones and other automated payments through the interaction of the customer's and bank's ERP systems, which became possible by digital technologies and alternative business models. The second direction also includes the emergence of additional support services for providing round-the-clock communication and timely service support by the bank to its customers in real time. To do this, banks are introducing chatbots, SMS-assistants and other online consulting tools.

An important role in the development of digital services and products of banks is played by the desire and opportunities gained through new technologies to respond more quickly to requirements of clients and accurately meet their needs. As a result, banks with a high level of digital deve-

lopment offer personalized cashback services with a choice of purchase categories, as well as use intelligent analytics to create individual offers for their customers. A high level of personalization is also achieved through the ability of customers to adapt the interface and customize personal accounts to their needs. This allows customers to spend a minimum of time managing their finances.

A special place in the range of new digital services belongs to the electronic authorization and authentication of citizens using their data in the bank where they are served. In particular, there are the BankID system of the National Bank of Ukraine and SmartID: Qualified electronic signature from Privatbank in Ukraine. Bank ID is a state system of remote identification ensuring transfer of the consumers' personal data from the bank where the account is opened to the entity that provides administrative and other services to consumer. As of August 30, 2021, 37 Ukrainian banks were participants in the BankID System of the National Bank. Today the most popular are BankID from Oschadbank and Privatbank [15]. SmartID from Privatbank is a qualified electronic signature, which is analogous to a handwritten signature that can be used to sign documents and reports, verify identity and receive services online using a smartphone. SmartID is stored in a secure cloud storage and does not require the use of additional devices and applications to store e-signatures [16].

An important step towards a new level of digital service is the integration of banks with cryptocurrency services. Thus, in January 2020, the largest cryptocurrency exchange Binance with the assistance of the Ministry of Digital Transformation of Ukraine for the first time opened an account in a Ukrainian bank – IBOX BANK. This makes transactions with cryptocurrencies and other virtual assets even more available to Ukrainians.

Improving the mechanism of banking security and data protection is the sixth trend.

Due to the fact that bank customers provide their personal and financial data using electronic banking services, it is extremely important to ensure the confidentiality and protection of such data. At the same time, customers prefer the identification and verification processes to be as simple and fast as possible. Therefore, domestic banks are actively implementing biometric security technologies such as fingerprint scanner systems, face scanning, etc. in order to quickly and efficiently identify customers, verify their data and ensure the security of banking information. Video chat identification is also becoming popular in Ukraine. In particular, Alfa-Bank was the first in Ukraine to launch full-fledged video identification for remote opening an account in 10 minutes [17].

Much attention in ensuring security and data protection is paid to the possibility of using blockchain technology. The blockchain is used to build databases with joint decentralized ownership for the bank and its customers

based on the formation of data registers in banking business. Blockchain provides complete data confidentiality, increases the level of cybersecurity of banks' information space. In addition, this technology provides a complete data register and the formation of the history of transactions, at the same time any banking transaction on the blockchain is possible only if a compromise between all participants in the chain is reached. Today, blockchain is used in tokenization of payments, smart contracts in banks; in addition, the National Bank of Ukraine is considering the issuance of electronic currency e-hryvnia based on blockchain technology.

Cooperation with fintech companies is the seventh trend.

The global banking system is progressively engaging outsourcing to reduce costs and increase the experience of software infrastructure upgrades as a basis for digital transformation. In Ukraine, this trend appears, but there are already results that indicate effective cooperation between banks and fintech companies. According to the results of the Survey of Ukrainian Banks and Fintech Companies 2019 "USAID Financial Sector Transformation Project" Ukrainian banks mostly perform this work independently yet. However, almost every second fintech company that participated in the survey has experience in providing at least one service or product of the bank. The most popular services provided by fintech companies to banks are electronic invoicing (22 % of respondents), other types of payments except for card and cross-border payments (17 %) and cross-border payments (14.6 %). Another 12.2 % of surveyed fintech companies issue electronic money together with banks [18].

This trend is confirmed in the Fintech Catalog 2019, a study of the Ukrainian financial technology market and analysis of trends in its development, prepared by the Ukrainian Association of Fintech and Innovation Companies with the support of the National Bank of Ukraine and Visa [19]. Of the eleven banks that participated in the survey (Privatbank, Oschadbank, Ukrgasbank, Raiffeisen Bank Ukraine, Alfa-Bank, Ukrsibbank, FUIB, Credit Agricole, OTP Bank Ukraine, TasComBank, Megabank), eight have already had experience in implementing joint projects with fintech companies and the other two plan to launch such cooperation in the near future. PrivatBank has its own powerful IT potential.

Banks are also developing incubation programs to support fintech startups in the context of developing cooperation with Fintech companies. Thus, OTP Bank and the NBU launched the Open Banking Lab mentoring program, which focuses on solving the national fintech challenge of Ukrainian clients and businesses through the paradigm of banking problems, using the bank's corporate infrastructure, ARI and open corporate data [20]. Among the areas of projects that can receive funding and mentoring are banking solutions for SMEs (digital lending, cash management, invoicing, factoring), Big Data analytics (credit rating, forecast and behavioral analytics, data security and privacy), RegTech (customer verification services (KYC),

antimoney laundering, optical character recognition), payments and transactions (peer to peer payments, transaction processing, biometrics), investment technologies and trading operations (crowdfunding, artificial intelligence).

The change in the format of customer service has led to a powerful impulse for banks to improve and transform existing digital channels for providing services, or even create them. Thus, there is an objective need to classify banks operating in the domestic market in accordance with the level of their digitalization. We offer to carry out grouping of banks according to criteria corresponding to the trends that have been identified (*Table*).

Table

Categories of banks according to the level of their digitalization

Criteria	Bank			
	Digital (neobanks)	Technologically advanced	With an average level of digitalization	With a low level of digitalization
Availability of online sales channels				
Internetbanking	yes	yes	yes	yes
SMS banking	yes	yes	yes	no
Mobile applications	yes	yes	yes	no
Chat boots	yes	yes	yes	no
Self-service areas 24/7	no	yes	no	no
Fully automated branches	no	yes	no	no
Optimized network of branches and outlets				
Availability of offline branches	no	yes	yes	yes
Permanent reduction in the number of front office employees	no	yes	no	no
Payment infrastructure for non-cash payments				
Service through ATMs	there is no own network, partner banks are involved	shorten	shorten	unchanged
Service through payment terminals	there is no own network, partner banks are involved	expanded	expanded	unchanged
Possibilities of contactless payment methods				
Issuance of virtual contactless and tokenized cards	yes	yes	yes	no
Partnership with Apple Pay and / or Google Pay	yes	yes	yes	no
Development of digital services and products				
Introduction of 2-3 new digital products and services annually	yes	yes	yes	no
High level of personalization of products and services	yes	yes	no	no
Electronic authorization and authentication services	yes	yes	no	no
Sharing ofdigitaldocuments	yes	yes	no	no
Improved mechanism of banking security and data protection				
Remote customer identification and verification	yes	yes	no	no
Biometricsecuritytechnologies	yes	yes	no	no
Cooperation with fintech companies				
Implementation of own fintech startups	no	yes	no	no
Implementation of joint projects with fintech companies	yes	yes	no	no

Source: developed by the authors.

According to the formulated criteria, group of digital or neobanks in Ukraine consists of Monobank, Sportbank, Izibank, O. Bank, Todobank, NEOBANK, and "Own Account". However, we should remember that these banks are based on and use the licenses of traditional banks. The group of technologically advanced banks should include Privatbank, Raiffeisen Bank Ukraine, Alfa-Bank, Ukrsotsbank, Ukrsibbank, FUIB (PUMB), Credit Agricole, OTP Bank Ukraine, TasComBank, Megabank, Oxy Bank, Idea Bank, Concord Bank. ProCreditBank, Kredobank, Forwardbank, Agroprosperis Bank, Credit Dnipro Bank, Bank Pivdenny, IBOX Bank, Ukreximbank belong to the banks with an average level of digitalization include. All other banks are still banks with a low level of digitalization, but some of its achievements have already been actively implemented, or under the influence of the requirements generated by the COVID-19 pandemic will be implemented in the near future.

Conclusion. The impact of new technologies on the modern financial market today is very difficult to overestimate. The fintech industry is rapidly and steadily developing, penetrating all areas of financial activity and providing customers with new and convenient financial services and tools. The growing number of smart devices users and the distribution of the Internet and mobile technologies are contributing to the rapid adaptation of digital payments around the world. Due to this, the modern consumers radically change their attitude to financial services. They strive for remoteness, ease and security in managing their own finances. Today's events in the context of the global coronavirus pandemic COVID-19 demonstrate the rapid rise in remote services and demand for online financial market products.

Due to the influence of the COVID-19 pandemic, digitalization trends have intensified in the following areas in Ukraine – improvement of remote and online service format for all customer groups with the use of innovative sales channels; reorganization of the network of branches and outlets of banks, staff reduction; increase in the number of payment terminals of banks, decrease in the number of ATMs; growth of non-cash transactions and contactless payments; development of digital services and products; improving the mechanism of banking security and data protection; intensification of cooperation with fintech companies.

As a result of the study of these trends, a system of classification features was formed, which allows to group banks according to their level of digital development, in particular, digital banks (neobanks), technologically advanced banks, banks with average and low level of digitalization were identified. The developed classification approach will allow tracking the transition of banks from one group to another and assess the scale of the digital transformation of the banking system of Ukraine under the influence of the COVID-19 pandemic.

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Еркес О., Калита О., Гордієнко Т. Диджиталізація банківського сектора під час пандемії COVID-19.

Постановка проблеми. *Фінансовий ринок зазнав кардинальних змін упродовж останнього десятиріччя. За цей час він трансформувався з моделі традиційного корпоративного бізнесу банків до цілих екосистем банківського та небанківського ринків. Трансформації продиктовані й новими викликами, що стимулюють активне зростання диджитал-операцій та формують попит на цифрові продукти і сервіси у фінансовій сфері. Пандемія COVID-19 стала своєрідним імпульсом для прискореної диджитал-трансформації банківського бізнесу.*

Аналіз останніх досліджень і публікацій *показав, що попри наявність окремих наукових доробок, залишається невирішеною важлива науково-практична проблема щодо впливу пандемії COVID-19 на цифрову трансформацію банківського сектора України та розробки критеріїв для класифікації банків за рівнем їх цифрового розвитку з урахуванням національних особливостей, досвіду та практики.*

Метою *статті є дослідження впливу пандемії COVID-19 на процеси диджиталізації вітчизняних банків.*

Матеріали та методи. *У процесі дослідження використано методи теоретичного узагальнення, аналізу та синтезу, групування, системного підходу.*

Результати дослідження. *Визначено ключові вектори диджиталізації банківських процесів в Україні, зокрема: перехід на дистанційний та онлайн-формат обслуговування всіх груп клієнтів; реорганізація мережі філій та відділень банків, скорочення персоналу; трансформація платіжної інфраструктури через збільшення кількості платіжних терміналів банків та зменшення кількості банкоматів; зростання обсягів безготівкових операцій та безконтактних оплат; розвиток цифрових сервісів та продуктів; удосконалення механізму банківської безпеки та захисту даних; співпраця з Fintech-компаніями тощо.*

Висновки. *У результаті дослідження ключових змін, що відбулись у банківському секторі під впливом пандемії коронавірусу, запропоновано систему класифікаційних ознак для групування банків за рівнем їх цифрового розвитку. Розроблений класифікаційний підхід передбачає групування банків на: цифрові банки (необанки), технологічно просунуті банки, банки з середнім та низьким рівнем диджиталізації. Запропонована система дає змогу відслідковувати ступінь цифрового розвитку окремих банків та загалом оцінити масштаби цифрової трансформації банківської системи України.*

Ключові слова: диджиталізація, цифровізація, цифрова економіка, дистанційне обслуговування, цифрові канали збуту.

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DIGITAL TRANSFORMATION OF HIGHER EDUCATIONAL ESTABLISHMENTS OF UKRAINE*

The dynamics of digital transformation of the world economy is described. Current status of innovative activity and factors that reduce digital transformation in Ukraine are considered. The necessity of digital transformation of of Higher Education Establishments (HEEs) for strengthening of innovative development of country is given. Key trends in which digital transformation of higher education of Ukraine must be offered.

Keywords: digital economy, digital transformation, higher education, higher educational establishments, educational process.

Background. The modern world processes of globalization generate the requirement in force digitalization of all spheres of human life and activities. It actively takes place all over the world, and countries, that accumulate enough resources for scientific researches and introduction of innovative developments that stipulates rapid growth of technologies become its leaders. Countries with less financial and research possibilities will search the ways of digitalization by differential principle, realising innovation in separate key trends. It, in its turn, generates disproportions of the development of industries and backlog from the basic players of the digital world. Ukraine is one of such countries, that, though has the considerable intellectual and labour potential, but due to financial instability force to develop the innovative programs and projects of left-over principle. The process of digitalization embraces the wide circle of stakeholders, and its leaders must be research and educational establishments, including Ukrainian

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universities. They must become the key suppliers of new technologies not only for Ukraine but also for the whole world, and realization of this scenario needs effective digital transformation of HEEs and introduction of world trends in their activity.

Now digitalisation of higher education takes place nonsystem, and it is not found only one effective scenario, although its necessity is growing day after day, as well as losses of national economy due to unimproved possibilities. Introduction of world practice and following of trends must take place with the account of position of the country, its cultural and geopolitical features. Creation of methodology and strategy of digital transformation of Ukrainian universities is the challenge and it needs further research and practical study.

Analysis of recent research and publications. Digitalisation is the basic theme of discussions on such global debatable platforms, as: World Economic Forum [1], UNCTAD [2], events and meeting of Organization of Economic Collaboration and Development [3], World Bank [4] and other international organizations during many years. The process of digital transformation of economy is lighted up in the publications of international analytical companies, research institutes and scientists. In Ukraine the problem of passing to the digital epoch is investigated by such scientists, as: S. Koliadenko [5], S. Veretiuk [6], A. Filipenko [7], O. Dzhusov [8], S. Apalkov [8], K. Kraus [9], and other. At the same time, there are problems that remain unsolved, and offered approaches need clarification through permanent development of technologies and change of vectors of the world trends.

The **aim** of the article is the analysis of key tendencies of digital transformation of of higher education establishments and forming of recommendations in relation to efficiency of its realization in Ukraine.

Materials and methods. For the achievement of certain goal the row of scientific and special methods of research: dialectical, scientific abstraction (for generalization and formulation of research conclusions), comparison (comparison of statistical and other data), analysis (exposure the tendencies of global digital transformation process, exposure of progress of higher education establishments of Ukraine trends), graphic (evident presentation of statistical data) is applied. The infobase of research by the analytical and statistical publications of international organizations, data of the State Statistics Service of Ukraine, scientific developments and research and practice publications is presented.

Results. Digitalisation is the integration of digital technologies in all life spheres for the increasing availability, lightness of use and speed of transferrableness of digital data [10]. To digital technologies which are actively got to everyday life, it is possible to take: robotics, internet of things, artificial intelligence, Data science, cloudy services, biometrics and systems of authentication, blockchain, cyberdefense and others like that.

Digitalisation is one of key factors of the economy growth, increasing of productivity and value added of goods manufactured [11; 12]. The results of analysis of the part of digital economy in the world GDP (*Figure*), testify that it grows annually.

Part of digital economy in the structure of world GDP, %

Source: is designed by the author [12].

Thus, the part of digital economy in such highly developed countries, as the USA, is considerably higher from the world's economy (33 % or USD 5.9 trillion) [12]. On the prognoses of experts [13] until 2030 it will grow to 50–60 %. On results of undertaken studies that the row of factors that reduce the process of realization of digital economy model in Ukraine is educed. Among them it is possible to distinguish the key factors: absence of effective national innovative infrastructure [5]; weak mechanism of state-private partnership [6]; relatively low level of providing the research institutes [8].

Analysing the dynamics of charges on innovations and sources of their financing (*Table*), it is possible to see that after reduction in 2017 the volume of charges on innovation grew during the last years, although to attain the highest level in 2016 is not succeeded until now. Although the positive tendency is discemibled for the last few years.

Table

Volumes of charges on innovative activity in Ukraine on financial sourcings, UAH million

Financial sourcing	2015	2016	2017	2018	2019	2020
The state budget	55	179	227	639	556	279
Personal funds of the enterprises	13427	22036	7704	10742	12475	12298
Investors-non-residents	59	23	108	107	43	125
Others	273	991	1078	692	1147	1704

Source: is designed by the author [14].

In the structure of charges on innovation part of the state budget hesitates from 0.4 to 5.2 %. It demonstrates the low level of the state's interest in support of innovative development and weakness of state-private partnership.

Results of analysis of the structure of scientific research-and-development enterprises [14] testifies that 84.3 % scientific and research work come true without the involvement of external contractors. Business objectively expounds mistrust to the research institutes in the direction of innovative activity. Often enough it causes the use of additional funds, unprofitableness of investments, that, in its turn, restrains the development of scientific sector in the country.

Leading players in innovative activity must be scientific and educational establishments. In case of willingness to answer the challengers of digital society, to investigate effectively, to develop and inculcate the innovations of business will be advantageously more actively to involve them to partnership and general commercial projects.

The key element of this process must be HEEs, where the conception of innovative parks and clusters can effectively work due to the synergy of young and progressive ideas, scientific examination and modern logistical support.

According to three basic universally which are recognized by world rating [15–17], what formed on the basis of multivariable analysis and contain innovative performance indicators, in 2020 only one Ukrainian university got these three ranks.

For strengthening the positions of Ukrainian HEEs in the world rating it is necessary to modernize gapproaches to educational activity and management. To approximate their valuable involvment in a global educational environment, digital transformation is a basic task.

In the background of the world pandemic of COVID-19 it is considered that the out-of-date system of education is not ready to the challengers of the digital world and does not have enough mechanisms for rapid transformation. Educational process in universities must test considerable changes in the nearest years. On the prognoses of experts, the traditional form of studies will totally change during 10–15 [9]. The intermediate stage of it is forming of new conceptual approach to higher education.

University 4.0 is ecosystem that consists of physical and digital environment and is a base for innovative activity and commercialization of projects. Within the framework of this conception HEEs must combine such constituents:

- educational center that provides professional and personal development of every participant of educational process;
- scientifically-research part that accumulates fundamental and experimental researches;
- business-accelerator, business-incubator, research cluster;
- space of exchanging opinions and ideas.

Therefore, a new model must be formed according to these three base directions.

The digital co-operating is with the participants of educational process. It envisages the creation of online-platforms and services, providing remote access to the equipment. Greater expanding of exchange information instruments in real-time is becoming more popular. For xample, chatbots are

actively used in communication with students from the first days of studies. It saves time and money, unifying the channels of passed information, allows to get all necessary information about studies, residence in dormitories, leisure by means of smartphone or other device.

Processes optimization. Deep digitalisation gives an opportunity to optimize the charges of time and money. Introduction of artificial intelligence of educational process forming and methodical providing will give an opportunity to work quickly over the large amount of data, find out conformities to law and adapt educational plans and programs to the students' necessities. It will allow to create cross-disciplinary courses that will answer the queries of the young generation, attract new prospective studnts and increase the competitiveness of HEEs at the educational market. Except it, artificial intelligence in combination with the systems of faces recognition and digital personification can form new system of safety on the territory of the universities. Equipage of the territory of educational establishment with touch-controls and software will assist the quality improvement of control and exposure of violations, strengthening the feeling of safety for all participants of educational process. Using the Internet of things is another achievement of digitalization epoch, it is possible to optimize administrative charges. Smart sensors, sensors of the heating systems and illuminations programed after plenty of parameters will allow to determine the rationed volume of necessary resources in real-time, depending on apartments' concentration, character of studies, turned on equipment, weather terms and others like that. It will improve HEEs'infrastructure, energy efficiency and ecofriendlyness.

Change of model of studies. Digital transformation of educational process stipulates the necessity of combination of traditional studies with the elements of dual education, use of online-instruments, cloudy services, and complemented reality. Introduction of cross-disciplinary and practically oriented on-line courses, bootcamp, certification programs will give an opportunity to extend the circle of possibilities for students. This model can not exist only due to the work of HEEs. There is the necessity of collaboration with the representatives of business, other research organizations and creation of modern innovative infrastructure on the base of establishment. Effective steps in realization of this direction are forming of innovative and research parks, business-clusters, incubators and accelerators. With the reduction of distance between education and business the additional channels for investments are opened, private financing of scientific and research work, strengthening of innovative development of the country.

Educational sphere needs digital transformation already now. It, in its turn, will start the mechanism of active digitalization in other industries, giving effective modern approaches and decisions for the different spheres of a person's activity. Due to forming of "digital view of life" at the young generation and country can provide the human and intellectual potential for the unimpeded and rapid introduction to the global digital world.

Conclusion. The necessity of digital economy development on all links is the challenge of present time. Now Ukraine is not ready to it and needs reformation of different branches of industries, strengthening of innovative activity and rethinking of approaches to forming and realization of innovative politics. Educational sphere is a key instrument of realization of this global aim. Digital transformation of Ukrainian HEEs must be based on providing the full-scale digital co-operating with all participants of educational process, optimization of activity due to the use of modern methods and technologies and valuable rethinking of model of studies taking into account the world tendencies. In the case of purposeful work there is the possibility to find digital trends and be ready to the new "digital world" not during 10-15 years, as experts forecast, and considerably quicker.

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Калініченко О. Цифрова трансформація закладів вищої освіти України.

Постановка проблеми. *Сучасні світові глобалізаційні процеси потребують форсованої цифровізації усіх сфер життєдіяльності людини. Українські університети повинні стати ключовими постачальниками нових технологій не лише для України, а й для світу. Для реалізації цього сценарію необхідно здійснити ефективну цифрову трансформацію самих закладів вищої освіти та впровадити у їх діяльність загальносвітові тренди.*

Аналіз останніх досліджень і публікацій. *Цифровізація є основною темою дискусій вже протягом багатьох років на глобальних дискусійних платформах, у публікаціях міжнародних аналітичних компаній, дослідницьких інституцій та вчених. Водночас, існують проблеми, які залишаються невирішеними, а вже запропоновані підходи потребують уточнення через постійний розвиток технологій та зміну векторів світових трендів.*

Метою *статті є аналіз ключових тенденцій цифрової трансформації закладів вищої освіти та надання пропозицій щодо ефективності її проведення.*

Матеріали та методи. *Для досягнення визначеної мети застосовано низку загальнонаукових та спеціальних методів дослідження: діалектичний, наукової абстракції, аналізу, графічний. Інформаційну базу дослідження становлять аналітичні та статистичні публікації міжнародних організацій, дані Державної служби статистики України, наукові розробки та науково-практичні публікації.*

Результати дослідження. *Провідними гравцями у процесі цифрової трансформації економіки України мають виступати заклади вищої освіти. На тлі світової пандемії COVID-19 виявилось, що застаріла система освіти не готова до викликів цифрового світу та не має достатньо механізмів для швидкої трансформації. Освітній процес в університетах у найближчі роки повинен зазнати вагомих змін.*

Університет 4.0 – екосистема, що складається з фізичного та цифрового середовища і є базою для інноваційної діяльності та комерціалізації розробок. Ця нова модель повинна формуватися за трьома базовими напрямами: цифрова взаємодія з учасниками освітнього процесу; оптимізація процесів; зміна моделі навчання.

Загалом освітня сфера потребує цифрової трансформації вже зараз. Це, в свою чергу, запустить механізм активної цифровізації в інших галузях, надаючи дієві сучасні підходи та рішення для різних сфер діяльності людини.

Висновки. *Необхідність розбудови цифрової економіки на всіх ланках є викликом сьогодення. Цифрова трансформація українських закладів вищої освіти повинна базуватись на забезпеченні повномасштабної цифрової взаємодії з усіма учасниками освітнього процесу, оптимізації діяльності завдяки використанню сучасних методів та технологій, повноцінному переосмисленні моделі навчання з урахуванням світових тенденцій.*

Ключові слова: цифрова економіка, цифрова трансформація, вища освіта, заклади вищої освіти, освітній процес.