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# MONITORING OF TAX AND NON-TAX FLOWS

**Abstract.** The filling of budgets at all levels is crucial for the implementation of national and regional programs of socio-economic development. Tax and non-tax revenues are exactly the fillers. A key source of revenue for the budget system was and remains tax revenue. However, the worldwide taxation practice shows that budgetary entities are primarily failing to fulfill their obligations. The fraud of taxpayers makes it necessary to retain special fiscal bodies, which are responsible for controlling the amount and timeliness of taxes, both legal and private persons. The problem of tax revenue is a problem in all countries, but it is very acute in Ukraine. An important component of the problem is identifying tax arrears and ensuring that debtors make payments to the budget system. The solution to this problem should be based on the domestic tax policy and the methods set out therein to ensure tax revenues to the budget system. It is generally accepted that tax compliance requires external control and audit of taxpayers. Control is a necessary tool not only to determine the correctness of tax charges, but also to stimulate their timely implementation. Monitoring has been and remains an important aspect of tax policy implementation, ant it is quite voluminous by its functions. It is stated that in addition to keeping track of planned figures for tax and non-tax payments to budgets, monitoring should also address the effectiveness of taxation methods used. Monitoring will only be effective if researchers and practitioners of the State Fiscal Service (SFS) receive answers to key questions of taxation and budgeting at all levels. Purpose of the work is to study the dynamics of payment of taxes, levies, payments, which is an important result of all tax activities, including the SFS measures to monitor the status of tax and non-tax (financial) flows, first and foremost, the tax additional charges. An analysis of the publications of the results of the research showed that the problem of tax charges is not given enough attention. It is obvious that the flow of additional tax charges, which is not actually too large today, is not so interesting to researchers and, as evidenced by tax practice, also to fiscal practitioners. Instead, given the large size of the shadow economy, tax evasion through optimization schemes, due to the occurrence of tax arrears due to the improper performance of contractual obligations, should be considered as a potentially significant flow of additional tax charges. The above identified the hypothesis of the study of the problem and its solution in the process of monitoring tax and non-tax flows. The research methodology for this hypothesis is to find the reasons that lead to the need to calculate the amount and payment of tax charges by the entity, as well

as to determine the stages of monitoring. The study of the first of the stages of monitoring tax and non-tax flows, including the flow of tax charges, is the content of this publication. The statistical method, as well as the methods of analysis, synthesis and generalization, were used for this purpose. Analysis of tax and non-tax revenues (payments) to ensure the formation of state and local budgets is made. Structure of actual revenues and expenditures of general and special funds of the state budget of Ukraine is calculated and analyzed. An undulating nature of shares of tax flows in the total amount of consolidated budget revenues is noted. Weights of tax and non-tax flows in the consolidated budget of Ukraine for the studied period 2014-2018 are compared. It is recorded that the taxation system in Ukraine is constantly influenced by reform initiatives. Changes in the composition of governments lead to transformations of the taxation system. Tax rates are changed most often and it reflects the interests of those financial and industrial groups that control the government. In addition, from time to time there are requests from the public for introduction or cancellation of certain taxes, changes in preferential taxation regimes, control of accrual correctness, completeness and timeliness of payment by taxes, levies or payments.

**Key words**: monitoring of tax and non-tax (financial) flows, tax and non-tax (financial) flows, tax deduction stream, timing of inspections, optimization of work of the state fiscal service.

## Introduction

The reforms that have been implemented in Ukraine for several decades require considerable financial resources. Since the reforms are initiated and implemented by the government, it is generally recognized that the main financial source is the state budget. Mobilization of funds to the state budget is carried out through tax and non-tax revenues. Pursuant to the current legislation [1; 2; 3; 4; 5; 6], a key aspect of attracting the funds to the state budget is administration of taxes. It is the successful administration of taxes by the bodies of the State Fiscal Service of Ukraine as well as the Customs Service of Ukraine, that allows formation of the necessary revenue of state and local budgets, which is a prerequisite for ensuring the expenditures of budgets of all levels.

However, it is common knowledge that the budget systematically underreports significant tax revenue for a variety of reasons. On the one hand, there is a large part of the shadow economy, the size of which differs from different researchers, but according to Ukrinform, in 2017 it was 46.8 % and grew in 2018 to 47.2 % of GDP [7]. The Kiev International Institute of Sociology (KIIS) conducted research on the shadow economy in 2017 and 2018 and identified certain components of the shadow economy: salary in envelopes – 18.3 % (2017) and 21.4 % (2018), unregistered employees – 21.4 % (2017) and 21.9 % (2018), undeclared business income – 60.2 % (2017) and 56.7 % (2018) [8].

On the other hand, as it is a worldwide practice, businesses seek to pay a minimum of taxes using so-called tax optimization methods [9]. There are consulting companies that provide tax optimization services [10; 11].

Another reason for not receiving tax payments is the temporary inability of businesses to pay their taxes due to financial difficulties. Some companies have already been declared bankrupt, others are in the process of recognizing such status, they are actively functioning, but they have arrears both in payment of wages and in payment of taxes, as evidenced by official data [12, 13]. Also, these aspects of the problem of financial and economic insolvency of enterprises are investigated by scientists, in particular [14].

The monitoring of tax payments aims to identify those businesses that have problems with paying taxes, to identify the causes of these problems, including the exposing of entrepreneurs' intentions to avoid tax. Such monitoring should result in the payment of tax arrears. In doing so, taxpayers should determine the amount of the deduction, given the circumstances of the delay in tax compliance of enterprises. The problem of additional tax charges should be seen as a complex one, part of which is to monitor and the other to determine the amount of additional tax collection as debt or intentionally unpaid tax. The problem with our study is the monitoring of additional tax charges.

## Literature review

Execution of tasks of socio-economic development of state in the tax area begins with formation of tax policy, which is emphasized by T. I. Yefymenko, O. T. Zamaslo, Y. B. Ivanov, A. I. Krysovatyi, M. I. Krupka and A. M. Sokolovska

[7; 8; 9; 10; 11; 12; 13; 14]. At this, we should note that many negative aspects have not been overcome yet, and this have been noted for a long time. Thus, in 2007, T. I. Yefimenko wrote about multiple taxation [15]. V. M. Melnyk and T. V. Koshchuk wrote about the need for correction of the tax policy of Ukraine [16]. We have noted in previous publications that However, taxation system has not yet been simplified, which is needed to facilitate business operations [17]. It is the work by O. T. Zamaslo, which is dedicated to further development of the taxation system with respects to European integration requirements and peculiarities of economic development in the second decade of the 21st century [9].

Monitoring has been and remains an important aspect of tax policy implementation. Monitoring of tax activity is quite voluminous by its functions. After all, addition to keeping track of planned figures for tax and non-tax payments to budgets, monitoring should also address the effectiveness of taxation methods used. Monitoring will only be effective if researchers and practitioners of the State Fiscal Service (SFS) receive answers to key questions of taxation and budgeting at all levels. Undoubtedly, the main result of the SFS activity is the increase of tax flows, increase of budgetary revenues.

Many studies have been devoted to monitoring problems in the tax field, on the basis of which a number of recommendations have been proposed to improve the filling of budgets at all levels through tax revenues. Article V. Khomutenko and I. Lutsenko are devoted to the research of monitoring of tax revenues to the consolidated budget of Ukraine [26, p. 292–302]. I. Lutsenko's publication is devoted to a separate aspect – monitoring of tax revenues to the state budget of Ukraine from foreign trade activity [27, p. 62–66]. The results of estimating budget risks in forming the state budget revenue base are outlined in the work of V. Babichenko, V. Glukhova, and Y. Kolotiy [28, c. 19–25]. L. Zakharkina built her study of tax revenues to the consolidated budget of Ukraine on determining the indicator of ‘elasticity of the budget revenue system’ [29, p. 125], which allowed us to show the high level of the “shadow” economy in Ukraine. In particular, it defines periods of significant tax evasion by type of tax: VAT, excise duty, corporate income tax [29, p. 128]. Based on the objectives of our study, we can state that there is a significant field of activity for the accrual of unpaid taxes.

Special attention should be paid to the works of Ukrainian scientists, which deal with the problems of tax administration and tax regulation along with the problems of monitoring tax revenues. O. Zolotareva and I. Kostenko devoted their research to the study of the optimality of the structure of revenues to the state budget. In particular, the indicator of the development of the income system, the authors chose the relationship between tax and non-tax revenues [30, p. 534]. Based on the results of the calculations, they concluded that “the critically poor accuracy of these tax returns” [30, p. 541]. It also confirms that there are good reasons for additional checks and tax payments. Although the authors do not emphasize such a possible conclusion from the results of their research. Instead, the authors provide information on TADAT's International Tax Administration Assessment Diagnostic Tool (citing [31]), which encompasses nine key performance areas (QFs). One of these areas, namely “COR 5: Timely Payment of Tax Liabilities,” contains “P5-15. The volume and dynamics of tax debt”. That is, we can conclude that international practice involves the impossibility of both inaccuracy in tax information and the need to collect debt.

The problems of tax regulation are devoted to the publications of A. Nikitishina. At work [32, p. 300–307] the author presents the results of the study of adaptive and coherent institutional architecture of tax regulation. Interesting from the point of view of tax debt is the author's conclusion about its impact on the “launch of a negative chain reaction across the institutional architecture of the country, even beyond its borders [32, p. 303]. In another article [33], A. Nikitishin, in studying the directions of improving the mechanism of tax regulation, draws attention to the reforms of international tax systems, which envisaged “counteracting the erosion of the tax base and the removal of profits from taxation”. The statistics on the amounts of taxes received are $ 100–240 billion. USA. Among the measures taken by the governments of foreign countries are named, in particular, “combating fraud and tax evasion” [33].

A. Mykolayets devoted his research to the problems of tax control. In particular, the author points out the "additional charges for various payments" in connection with the implementation of tax control functions and the classification of this issue as one of the types of tax control. He writes: "Based on the main function of tax control, the purpose of which is to maximize the amount of extra charges to the budgets of all levels, that is, the fiscal function, until recently, the main type of tax control has been consistent".

Regarding local budgets, we should mention the publications of A. Nikitishin and Y. Sayenko – on the formation of local budgets on the example of Vinnytsia region [35]; V. Glukhova and L. Skrypnyk on financial support for health care at the level of local budgets [36]. From the positions of the largest taxpayers on the sectoral and regional characteristics investigated tax revenues T. Goloborodko and S. Shmagaylo [37].

Combating tax evasion and tax arrears to replenish state and local budgets is an important aspect of the activities of the State Fiscal Service of Ukraine, the new State Tax Service. Head of the State Tax Service S. Verlanov, speaking about the prospects of implementation of the plan of tax revenues to the budget in the first quarter of 2020, noted that reducing the budget losses due to effective fight against tax fraud and increase tax revenues should lead to a decrease in additional charges revenues of tax revenues, and volumes of tax administration work (FINBALANCE, Finance and Economy, 02/21/2020, 5:00 pm).

Summarizing the scientific literature review of publications on monitoring budget revenues, we present the Table 1.

*Table 1*

**Typologization of scientific researches of Ukrainian scientists in the field of monitoring of budget revenues**

| An area where budget revenue monitoring issues were investigated | Issues related to the monitoring of budget arrears and charges are investigated | Researchers in the specified area of monitoring |
|---|---|---|
| Consolidated Budget of Ukraine | | |
| Monitoring of tax revenues | | Khomutenko V. and Lutsenko I. |
| Tax revenues from foreign economic activity | | Lutsenko I. |
| Budget risks in forming the state budget revenue base | | Babichenko V., Glukhova V. and Kolotiy Y. |
| The indicator of "elasticity of the budget revenue system" | The periods of significant tax evasion by individual types of taxes have been determined | Zakharkina L. |
| Implementation of the fiscal revenue plan for the first quarter of 2020 | Reducing budget losses and reducing tax payments | Verlanov S. |
| Tax administration and tax regulation | | |
| Optimality of the structure of revenues to the state budget. An indicator of the development of the income system is the ratio between tax and non-tax revenues. | TADAT's International Diagnostic Assessment Tool, including "the FRA 5: Timely Payment of Tax Liabilities" and "the P5-15 Indicator. Volume and dynamics of tax debt". | Zolotareva O. and Kostenko I. |
| Research on adaptive and coherent institutional architecture of tax regulation. | | Nikitishin A. |
| | Budgeting at all levels is a fiscal function | Mikolayets A. |
| Problems with local budget revenues | | |
| On the example of Vinnytsia region | | Nikitishin A. and Sayenko Y. |
| Health care budgeting | | Glukhova V. and Skripnik L. |
| Tax revenues from the largest taxpayers by sectoral and regional basis | | Goloborodko T. and Shmagaylo S. |

Typologization, grouping of the studied problems of monitoring tax revenues allows to conclude that monitoring in the field of taxation is carried out for all levels of the budget system. Scientists and practitioners identify the most significant problems, develop tools to overcome identified weaknesses. Although the problems of debt are reflected in these studies, the focus is instead on monitoring the additional charges of tax revenues.

**Purpose of the work** is to study the dynamics of payment of taxes, levies, payments, which is an important result of all tax activities, including the SFS measures to monitor the status of tax and non-tax (financial) flows as a prerequisite for monitoring the additional charges of tax revenues.

## Methodological approach

Tax and non-tax flows, as evidenced by research publications in this field, are incomplete due to tax evasion, tax optimization and so on. For this reason, monitoring of tax and non-tax payments is an important aspect for the full implementation of the budget revenue plan. This is the first – the statistical stage of monitoring the additional charges of tax revenues. The second step is to determine the amount of additional charges of taxes for a particular enterprise. Research methods should be: statistical, analysis and synthesis, generalization.

## The main materials

Presented data (Table 2) shows that in the structure of tax revenues of the consolidated budget of Ukraine during 2014–2018 the largest shares had the following taxes: value added (VAT), which increased from 37.8 % in 2014 to 37.9 % in 2018; personal income tax (PIT), which also increased from 20.5 % in 2014 to 23.3 % in 2018; excise tax (ET) increased from 12.3 % in 2014 to 13.4 % in 2018; corporate income tax (CIT) was 10.9 % in 2014 and decreased by 0.1 % to 10.8 % in 2018. Thus, these four types of tax payments account for 81.5 % (37.8 % + 20.5 % + 12.3 % + 10.9 %) in 2014 and 85.4 % (37.9 % + 23.3 % + 5.1 % + 10.8 %) in 2018. During the four years, share of these taxes increased by 3.9 %. Instead, share of the rent in the consolidated budget of Ukraine has decreased from 10.8 % in 2014 to 5.1 % in 2018. Weight of customs duties also significantly reduced: it amounted to 3.4 % in 2014, increased to 7.9 % in 2015, and then decreased to 2.7 % in 2018. The same trend for decrease of the weight was observed for other taxes and levies, which in 2014 amounted to 2.1 %, and during 2015–2018 was gradually decreasing and reached the minimum value of 0.5 %.

*Table 2*

**Structure of tax revenues of the Consolidated Budget of Ukraine for 2014–2018 ***

| No. | Indicators | Years | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 | | 2015 | | 2016 | | 2017 | | 2018 | |
| | | thous. UAH | % | thous. UAH | % | thous. UAH | % | thous. UAH | % | thous. UAH | % |
| 1 | PIT | 75202945.3 | 20.5 | 99983173.9 | 19.7 | 138781786.5 | 21.3 | 185686131.6 | 22.4 | 229900604.4 | 23.3 |
| 2 | CIT | 40201485.7 | 10.9 | 39053168.6 | 7.7 | 60223231.5 | 9.2 | 73396802.8 | 8.9 | 106182347.5 | 10.8 |
| 3 | Rent payment, RP | 39584203.6 | 10.8 | 49203618.8 | 9.7 | 46608398.3 | 7.2 | 51132329.1 | 6.2 | 50086888.8 | 5.1 |
| 4 | Excise tax, ET | 45099574.7 | 12.3 | 64795226.3 | 12.8 | 101750661.7 | 15.6 | 121449435.6 | 14.7 | 132649809.5 | 13.4 |
| 5 | VAT | 139024258.8 | 37.8 | 178452385.2 | 35.2 | 235506029.9 | 36.2 | 313980594.4 | 37.9 | 374508186.5 | 37.9 |
| 6 | Customs duties | 12608696.0 | 3.4 | 40300805.6 | 7.9 | 20370979.9 | 3.2 | 24541812.4 | 2.9 | 27076620.9 | 2.7 |
| 7 | Local taxes | 8055639.5 | 2.2 | 27041345.0 | 5.3 | 42261496.7 | 6.5 | 53270112.5 | 6.4 | 61019496.7 | 6.3 |
| 8 | Other taxes and levies | 7735127.2 | 2.1 | 8806176.3 | 1.7 | 5279094.1 | 0.8 | 4701595.5 | 0.6 | 4924569.2 | 0.5 |
| 9 | Tax revenues | 367511931.1 | 100 | 507635899.7 | 100 | 650781678.6 | 100 | 828158813.9 | 100 | 986348523.5 | 100 |
| 10 | Non-tax revenues | 80612762.6 | – | 140154438.7 | – | 125502878.2 | – | 154552067.1 | – | 192716615.4 | – |
| 11 | Other revenues | 7942629.7 | – | 4240655.9 | – | 6,574928.2 | – | 34258627.2 | – | 5225626.0 | – |
| 12 | Total revenues (excluding intergovernmental transfers) | 456067323.5 | – | 652030994.4 | – | 782859484.9 | – | 1016969508.1 | – | 1184290765.3 | – |

*Source: compiled by authors using the data of the Ministry of Revenues of Ukraine: [web-site]. – Available at: http://www.minfin.gov.ua/control/uk/publish/archive/main?cat_id=77440*

*Table 3*

**Weights of different taxes in tax revenues of the Consolidated Budget of Ukraine for the period of 2014–2018 ***

| No. | Indicators | Years | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 | | 2015 | | 2016 | | 2017 | | 2018 | |
| | | thous. UAH | % | thous. UAH | % | thous. UAH | % | thous. UAH | % | thous. UAH | % |
| 1 | Tax revenues | 367511931.1 | 80.6 | 507635899.7 | 77.8 | 650781678.6 | 83.1 | 828158813.9 | 81.4 | 986348523.5 | 83.3 |
| 2 | Non-tax revenues | 80612762.6 | 17.7 | 140154438.7 | 21.5 | 125502878.2 | 16.1 | 154552067.1 | 15.2 | 192716615.4 | 16.3 |
| 3 | Other revenues | 7942629.7 | 1.7 | 4240655.9 | 0.7 | 6,574928.2 | 0.8 | 34258627.2 | 3.4 | 5225626.0 | 0.4 |
| 4 | Total revenues (excluding intergovernmental transfers) | 456067323.5 | 100 | 652030994.4 | 100 | 782859484.9 | 100 | 1016969508.1 | 100 | 1184290765.3 | 100 |

*Source: compiled by authors*

*Table 4*

**Share of additional accruals in the value of tax revenues of the Consolidated Budget of Ukraine for the period of 2014–2018**

| No. | Indicators | Years | | | | |
|---|---|---|---|---|---|---|
| | | 2014 | 2015 | 2016 | 2017 | 2018 |
| 1 | Tax revenues, thous. UAH | 367511931.1 | 507635899.7 | 650781678.6 | 828158813.9 | 986348523.5 |
| 2 | Additional accrual of monetary liabilities, thous. UAH | 7963822.0 | 4611007.0 | 6103433.0 | 16300557.0 | 13232296.0 |
| 3 | Share of additional accruals, % | 2.17 | 0.91 | 0.94 | 1.97 | 1.34 |

*Source: compiled by authors from the information presented on the web site of the SFS of Ukraine*

An undulating nature of shares of tax flows in the total amount of consolidated budget revenues should also be noted. If absolute values of VAT, personal income tax, excise tax, local taxes were constantly increasing, their specific weights fluctuated. Corporate income tax (CIP) in absolute terms decreased in 2015 compared to the previous year, and during 2015–2018 we have a significant increase in tax revenues amounting to 271.9 % (106,182,347.5 thousand UAH/ 39,053,168.6 thousand UAH). It should also be noted, that its weight in the total amount of tax revenues during 2015–2017 decreased, and in 2018 it almost reached the level of 2014.

To compare the importance of tax and non-tax flows in the consolidated budget of Ukraine for the studies period, we should consider the data given in Table 3. The figures show that tax and non-tax revenues make up the bulk of the consolidated budget's revenue. The highest tax and non-tax revenues were received in 2017–2018, which is respectively 96.6 % (81.4 % + 15.2 %) and 99.6 % (83.3 % + 16.3 %) in the total the volume of revenues of the consolidated budget of Ukraine, i.e. the share of revenues (excluding intergovernmental transfers) increased by 3 % (99.6–96.6 %) [18, p. 5–10].

At the same time, the share of tax revenues increased from 77.8 % in 2015 to 83.3 % in 2018, while the non-tax revenues decreased from 21.5 % in 2015 to 16.3 % in 2018.

Direction of improvement of the state budget policy in 2014–2018 was the introduction of innovations for the main types of taxes, which make up the major part of revenues of the Consolidated Budget of Ukraine revenues. For example, reforming of the tax system of Ukraine, namely, value added tax, personal income tax, corporate income tax, excise tax, which are the main budget-forming taxes of the Consolidated Budget of Ukraine, resulted in increase of the total share thereof to 82.3 % in 2016, 83.4 % in 2017 and 85.4 % in 2018. This is due to the improvement of the taxation system: reduction of tax rates, abolition of unreasonable tax benefits, introduction of financial result, improvement of depreciation of fixed production assets, tax exemption, introduction of zero tax rate, provision of tax benefits for the payers, control of correctness of calculations, completeness and timeliness of payment of taxes, duties, payments by taxpayers, etc.

Receipt of additional charges received in connection with violation of tax legislation of Ukraine (underpayment of taxes, levies, payments, payment of penalties and fines) is also important to the Consolidated Budget of Ukraine. The largest revenues (monetary liabilities) from additional charges (Table 4) were received in 2017 in the amount of 16,300,557.0 thousand UAH, in 2018 in the amount of 13,232,296.0 thousand UAH, in 2014 year in the amount of 7,963,822.0 thousand UAH, and in 2016 in the amount of 6,103,433.0 thousand UAH. The smallest amount of additional charges was received in 2015, in the amount of 4,611,007.0 thousand UAH, which is less than in 2017 by 11,689,550.0 thousand UAH, or 71.7 % (11,689,550.0/16,300,557.0) less; respectively, less than in 2018 by 8,621,289.0 thousand UAH, which is 65.1 % (8,621,289.0/13,232,296.0). At this, the largest share of additional accruals of monetary liabilities in tax revenues of the Consolidated Budget of Ukraine is 2.17 % in 2014, 1.97 % in 2017 and 1.34 % in 2018; the lowest is 0.94 % in 2016 and 0.91 % in 2015. The undulating nature of tax revenues to the consolidated budget of Ukraine is obvious.

Taxation system in Ukraine is constantly influenced by reform initiatives. Changes in the composition of governments lead to transformations of the taxation system. Tax rates are changed most often and it reflects the interests of those financial and industrial groups that control the government. In addition, from time to time there are requests from the public for introduction or cancellation of certain taxes, changes in preferential taxation regimes, control of accrual correctness, completeness and timeliness of payment by taxes, levies or payments [3; 19, pp. 133–137].

## The conclusions and recommendations for further research

In Ukraine, it is urgent to reduce the tax pressure on businesses, especially small and medium ones; this will increase the number of business entities that will voluntarily pay taxes, and this, respectively, will reduce the forced collection due to minor violations of tax legislation. Therefore, supervisory authorities (SFS of Ukraine) should systematically improve the quality of control and inspection activities. For example, in 2014, the Government of Ukraine launched a real reform of the controlling authorities, the main tasks of which were the following: to reduce the number of controlling bodies due to their “liquidation” or “merger”; introduction of administrative responsibility for controlling bodies inspectors for violation of tax control procedures; good planning of audit work (priority should be given to addressed audits that will not affect a business with no objective risk factors); change of deadlines for administrative appeals against decisions made by the SFS bodies (from 10 calendar days – up to 10 business days), deadlines for filing objections to the inspection report by the taxpayer (from 5 business days – up to 10 business days) and deadlines for issuing tax notifying decisions (from 10 business days – up to 15 business days). Of course, when reforming the SFS bodies, the need to ensure the quality of work of its employees in the future should not be forgotten as well; and the quality depends on the validity of the planned tasks and their compliance with timing of certain types of inspections. There is no need to save funds on maintenance of the SFS bodies reducing the quality of their work, which ultimately consists in filling the revenue part of the state and local budgets. Attention should be paid to the sound standardization of work of SFS inspectors. It is the right determination of time limit to carry out certain operations to verify the tax statements of business entities that guarantees elimination of risk of misjudgments and subsequent disputes between entrepreneurs and the SFS. At the same time, achievements of the Industrial Revolution (Industry 4.0) should be taken into account, which should lead to serious changes in the activities of fiscal authorities when inspectors will be replaced by “robots” [20].

Thus, efficient functioning of the budgetary system, for which the taxation system organizes filling of the revenue part using tax and non-tax flows, depends on proper organization of the tax work of SFS bodies and taxpayers. Therefore, organization of the effective work of SFS bodies and taxpayers provides for effective monitoring of tax and non-tax flows, digitization of work,

introduction of electronic inspections and of integrated automated system of state supervision (control).

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# THE FORMATION OF DIGITAL BUSINESS FACTORS

**Abstract.** The article is concerned with identifying and studying factors affecting digital business formation and development process in order to form tools for affecting the digital business. The novelty of this research paper is establishing causes increasing the volume of digital business and the dependence of its growth rate on the existing factors. The authors define the concept of digital business as an entrepreneur activity (providing electronic commerce, electronic services) in the Internet for making a profit with the help of information and communication technologies that blur boundaries between the real and virtual worlds. The digital business structure is studied and analysed. It is generally distinguished 4 sectors (electronic financial services; electronic commerce; electronic education and training; other electronic transactions). The authors prove that modern digital business model has been transformed from a 4-sectoral into a 3-sectoral one, including electronic commerce, electronic financial services, electronic education and training. It is suggested to study and define factors affecting the development of digital business according to seven-stage sequence of digital business evaluation. The hypothesis concerning a set of digital business factors is proposed and 24 factors affecting digital business are identified, among which 8 factors mostly affect the digital business market of the European Union. The authors also distinguish influencing factors which are common for all three sectors of digital business, such as: Internet use by individuals, proportion of people using the Internet to order goods or services, the level of household Internet access. The methodology of the given research is based on scientific and verification principles, comparative, structural and system analysis. Applying economic and mathematical methods, it has been investigated the correlation between the digital business and the main factors affecting it. The correlation density between the outcome feature and influencing factors using a determination coefficient is estimated. The given research proves that factors are multicollinear between each other. It has been revealed the correlation between the EU digital business volume and chosen factors.

**Key words:** digital business, electronic business, electronic commerce, electronic banking, electronic education and training, digital business factors.

## Introduction

Business activity is undergoing a transformation stage from the real sector to the digital business. Business processes are carried out via electronic networks, and virtual trading is superseding traditional one [17]. The relevance of this research work is that defining factors affecting the formation of digital business in the context of European integration will allow us to understand the reasons for increasing the volume of digital business and the dependence of its growth rate on the existing factors. Nowadays, the digital business gives us more opportunities for doing business more effectively and efficiently, as information and communication technologies involve more consumers and promote offered goods and services.

The European Union demonstrates annual growth of digital business and holds leadership

positions in e-commerce scope [16]. Germany, France and Spain are leaders in the field of online sales among the EU-members. Germany ranks the fifth position among the largest world leaders in digital business [15]. However, the annual growth rate of e-commerce is slowing down. For establishing causes of this phenomenon, first of all, it is necessary to find out what exactly influences this factor.

The aim of our study is to define the concept of digital business and its trends, to establish the sequence of digital business evaluation, to make a list of factors affecting digital business, and among these factors distinguish those that characterize the structure of the European Union digital business. As a result, a digital business model by sectors will be formed. After choosing those factors affecting all sectors of the model, calculating the linear dependence between the impact factors and the scope of the European Union digital business, and considering those factors we will be able to form tools for influencing the digital business.

## Analysis of recent research and publications, problem statement.

The leading Western and Ukrainian scientists have been engaged in the research of the digital business development. This problem has been studied by many foreign scientists, among them: Gartner [1], Manuel Castells [3], Dave Chaffey, Tanya Hemphill, David Edmundson-Bird [4], Peter Cunningham, Friedrich Fröschl [5]. Ukrainian scientists have also made a significant contribution to the research of the digital business, in particular I. A. Kasatonova [6], S. N. Baburin [7], E. P. Holubkov [8], M. N. Indrysov [9], D. D. Yevtushenko [10], I. D. Fedyshyn [11], V. H. Voronkova [12]. A. Zahorodnii and H. Partyn analyze crypto currency as one of the modern tools of the digital business in their works [13]. A. Chushak-Holoborodko, O. Didukh, R. Zaderetska research outsourcing as one of the development trends in digital business [14]. However, there are still unsolved problems in this field. As digital business is actively developing even today, it is an important task to define the factors affecting its formation and development process.

## Research on the formation of digital business factors.

The concept of digital business is mainly associated with electronic commerce, but it is broader in its content because it includes its website in the Internet, a virtual shop, company management systems, the use of electronic advertising, marketing, “business-to-business” or “business-to-consumer” models. The digital business differs from the traditional business activities mainly because it requires the use of information and telecommunication units in all business processes.

Many authors often identify digital business with electronic and virtual ones, but today, the most current term is a digital business. Consider different definitions of the digital business in Table 1.

Worth noting is that one of the key defining features of the digital business is the use of information technologies that blur boundaries between the real and virtual worlds, such as: virtual fitting rooms, 3D tours, virtual consultants, etc. Thus, we suggest defining the concept of the digital business.

According to our own research, we suggest defining the term digital business as an entrepreneur activity (providing electronic commerce, electronic services) in the Internet for making a profit with the help of information and communication technologies that blur boundaries between the real and virtual worlds.

Having analyzed research papers devoted to digital business sectors in the European Union, we distinguished the following 4 sectors:

- $S_1$ – electronic financial services;
- $S_2$ – electronic commerce;
- $S_3$ – electronic education and training;
- $S_4$ – other electronic transactions.

The structure of EU digital business by sectors is presented in Table 2.

Considering the above provided statistical data, it is possible to design a digital business structure that existed before 2014 and a currently exist structure (Fig. 1.)

*Table 1*

**Digital business definitions according to the authors**

| Author | Definition |
|---|---|
| Manuel Castells [3] | The nature of the e-business is an Internet-interaction and network connection between producers, consumers and service providers |
| Dave Chaffey, Tanya Hemphill, David Edmundson-Bird [4] | Digital business – improving the competitiveness of the organizations through providing innovative digital technologies inside and outside with involving partners and customers and digital mass media promotion |
| Peter Cunningham, Friedrich Fröschl [5] | Electronic business – whirlwind of changes to the business world brought by the Internet, enabling new and diverse ways of trading |
| S. N. Baburyn [7] | Electronic business is a business that has a predominant distribution with using information, network and telecommunication technologies and models |
| V. H. Voronkova [12] | The principle of online business is to provide interactive communication among manufacturers, consumers and service providers via the Internet |
| E. P. Holubkov [8] | Internet business is a profitable economic activity that also offers other benefits and is carried out with using Internet tools and technologies |
| M. N. Idrysov, S. A. Shavshyna [9] | Online business is the activity of any semi-product based company that purchases and offers goods on the markets, with the maximum use of information systems and technologies, as well as production technologies |
| D. D. Yevtushenko [10] | Electronic business is a type of information technology based enterprise to transform enterprise relationships with suppliers, partners, and customers for improving overall business performance and business processes (production, inventory management, product development, risk management, finance, knowledge and human resources management) |
| I. B. Fedyshyn [11] | Electronic business is a type of companies' economic activity through computer networks, in particular the Internet, for profit. It is an electronic economic activity conducted by means of information and communication technologies for profit |
| Gartner, Inc. [1] | Digital business is changing the way organizations use and think about technology, moving technology from a supporting player to a leading player in innovation, revenue and market growth |
| I. A. Kasatonova [6] | Electronic business is a business activity that uses global information networks opportunities to transform internal and external business relationships for making a profit |

*Table 2*

**The structure of EU digital business by sectors during 2007–2018, in %**

| Years / Sector | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ($S_1$) | 25 | 29 | 32 | 36 | 36 | 40 | 42 | 44 | 43 | 46 | 46 | 46 |
| ($S_2$) | 30 | 32 | 36 | 40 | 42 | 44 | 47 | 50 | 50 | 51 | 51 | 51 |
| ($S_3$) | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 6 | 7 | 3 | 3 | 3 |
| ($S_4$) | 42 | 36 | 28 | 20 | 17 | 10 | 5 | 0 | 0 | 0 | 0 | 0 |

*Note: own analysis according to the data [2].*


**2007–2015** **2014–2018**

Symbols: $S_1$ – electronic financial services; $S_2$ – electronic commerce; $S_3$ – electronic education and studying; $S_4$ – other electronic operations.

*Fig. 1. Digital business model by sectors in 2007–2018*

*Note: own analysis according to the data [2]*

Thus, by 2014, there was a four-sectoral EU digital business model, and since 2014 till today, there are three sectors, because the electronic commerce sector has completely absorbed other electronic transactions.

Studying and defining of factors that influence the development of digital business are suggested to be done according to the sequence shown in Fig. 2.

In the process of developing a hypothesis regarding a set of factors affecting the European Union digital business, we have analyzed and generalized a specific economic literature. Due to the results of publications analysis and our own digital business factor monitoring, there were identified 24 factors affecting digital business: (1) the level of household Internet access, (2) proportion of people using mobile devices to access the Internet on the way, (3) Internet use by individuals, (4) proportion of people using the Internet to sell goods or services, (5) proportion of people using the Internet for Internet-banking, (6) proportion of people using the Internet to order goods or services, (7) proportion of people using the Internet to order goods or services from other EU countries, (8) proportion of people using the Internet to take online courses, (9) enterprises that received online orders (not less than 1 %), (10) turnover share of e-commerce enterprises, (11) broadband access enterprises, (12) enterprises, which business processes are automatically connected with the processes of their suppliers and/or customers, (13) enterprises using software solutions such as CRM for analyzing customer data with marketing purposes, (14) using social media by types of advertisements, i.e. the Internet advertising of enterprises, (15) the GDP of Europe, (16) share of exports of goods and services, (17) share of imports of goods and services, (18) employment rate, (19) gross domestic R&D expenditures, (20) the main GDP aggregates per capita, (21) resource productivity, (22) real GDP per capita, (23) purchasing power parities (PPPs), (24) convergence factors.

It should be noted that factors 1–14 directly affects the European Union digital business (factors 1–8 are caused by individuals, factors 9–14 by enterprises, factors 15–24 are the EU macro-economic factors which have an indirect impact on the digital activity).

Using factor analysis, we identified the factors influencing various fields of digital business. Having analysed 24 factors selected for the study, we selected 8 of them that mostly influence the digital business market of the European Union.

The distribution of factors by digital business sectors is shown in Fig. 4.

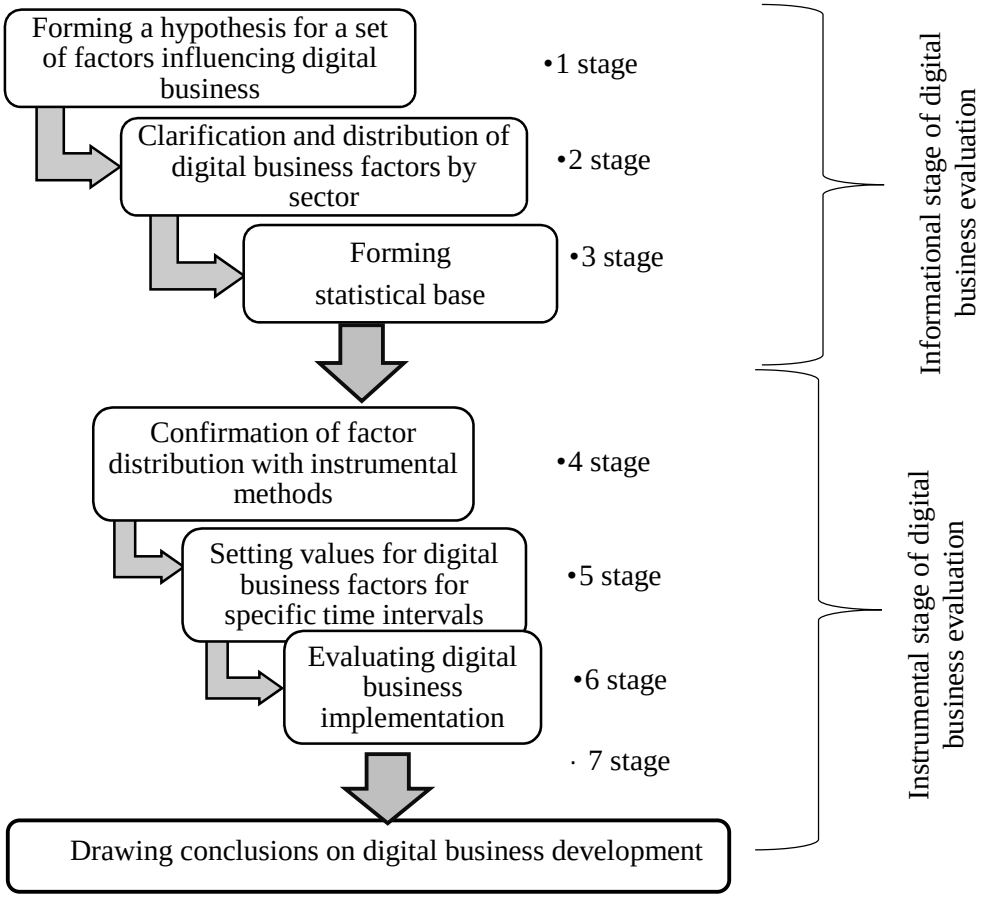


*Fig. 2. Sequence of digital business evaluation*

*Note: own analysis*

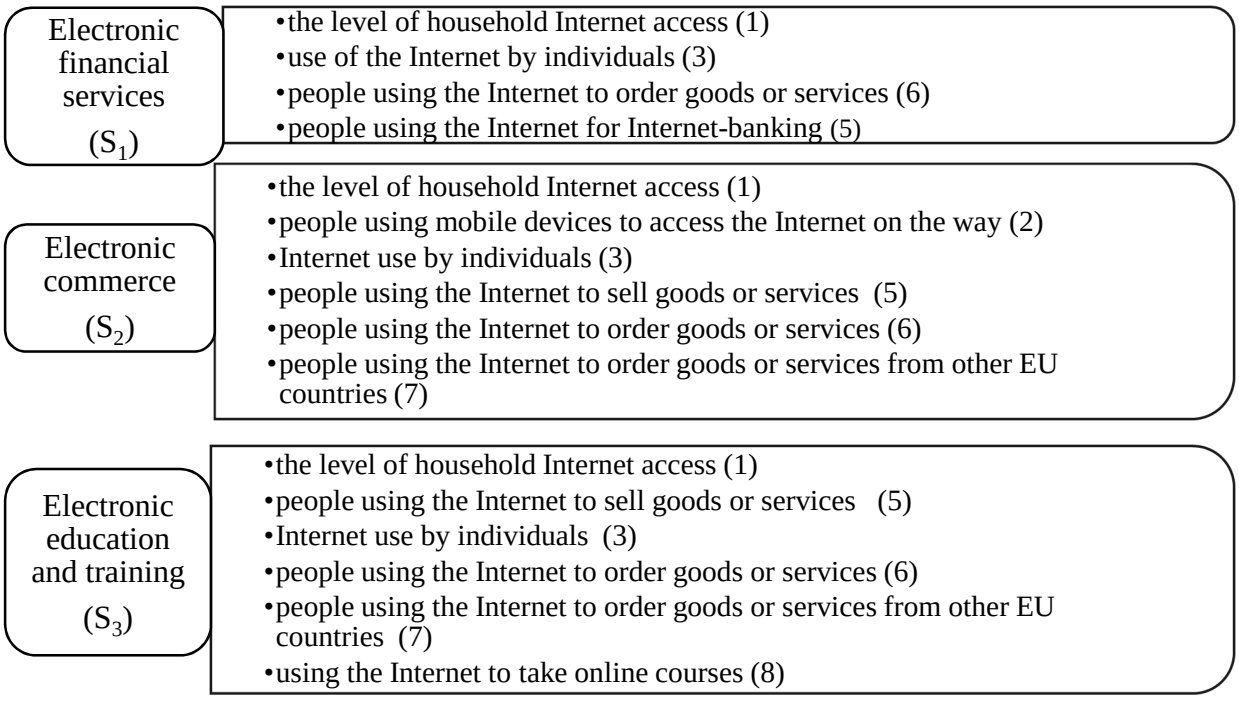


*Fig. 4. Factors influencing digital business by sectors*

*Note: own analysis according to the data [2]*

We also carry out analysis of the impact of those factors being in all sectors of the digital business (Y), namely: Internet use by individuals ($X_1$), proportion of people using the Internet to order goods or services ($X_2$), the level of household Internet access ($X_3$), their growth rates are presented in Table 3.

*Table 3*

**Growth rate of the researching factors**

| Year | Growth rate Y | Growth rate $X_1$ | Growth rate $X_2$ | Growth rate $X_3$ |
|---|---|---|---|---|
| 2010 | 0.2159 | 0.0462 | 0.0606 | 0.1111 |
| 2011 | 0.1869 | 0.0441 | 0.0429 | 0.0500 |
| 2012 | 0.1732 | 0.0282 | 0.0411 | 0.0476 |
| 2013 | 0.1812 | 0.0274 | 0.0395 | 0.0682 |
| 2014 | 0.1449 | 0.0400 | 0.0253 | 0.0638 |
| 2015 | 0.1390 | 0.0128 | 0.0247 | 0.0600 |
| 2016 | 0.1547 | 0.0380 | 0.0241 | 0.0377 |
| 2017 | 0.0075 | 0.0244 | 0.0235 | 0.0364 |
| 2018 | 0.0243 | 0.0119 | 0.0230 | 0.0526 |

*Note: own analysis according to the data [2]*

According to given data in Table 3, we argue that the growth rate of all factors has been declining over the analyzed period, due to the World Financial Crisis of 2008–2009. To date, rallies being organized due to the deterioration of the population's solvency have been observed in the European Union. As a consequence, citizens' purchasing power and the growth rate of online orders and generally online trading are reducing.

The correlation between performance feature and independent factors looks like the following:

| $X_1$У | $X_2$ У | $X_3$ У |
|---|---|---|
| 0.648 | 0.536 | 0.713 |

.

The strongest Y correlates with $X_3$ (the growth rate of household Internet access), because for people it is more convenient to buy goods or services online at home rather than at work or in public places. Therefore, the more households are provided with the Internet, the higher the rate of e-commerce growth is.

We estimate the availability of a total multicollinearity using $\chi 2$ – criterion with a reliability of 0.95. Following calculations: $\chi 2p > \chi 2cr$, i.e. 8.525>7.81. Therefore, with reliability of 0.95 we can assume that there is multicollinearity between the factors. Using F- and t-statistics with p = 0.95 we find pairs of factors, among which there is multicollinearity, if such pairs exist, we remove one of the factors. According to the calculations, it follows that F2> Fcr, 6.888> 3.86, and F3> Fcr, i.e. 4.303> 3.86. Consequently, it means that $X_2$ and $X_3$ are independent multicollinear variables with others. For eliminating multicollinearity, factor $X_3$ is excluded from consideration.

We create a matrix of the model parameters:

$$\dot{A} = \begin{vmatrix} -0.019 \\ 1.98 \\ 2.82 \end{vmatrix}.$$

A linear model of the European Union digital business looks like this:

$$У = 1.98X_1 + 2.82X_2 - 0.019.$$

It is estimated the correlation density between the outcome feature and influencing factors using a determination coefficient that is 0.587.

The determination coefficient is determined by the formula:

$$R^2 = \frac{\sum (\hat{y}_i - \bar{y})^2}{\sum (y_i - \bar{y})^2}.$$

Since $R^2$ is within the range of 0.5–0.7, it follows that there is a moderate correlation between outcome feature and influencing factors.

We check the adequacy of the constructed model using the Fisher's test. According to the results of calculations, we get F> Fcr, i.e. 6.41 > 3.68. Therefore, it means that the designed paired linear regression model is adequate to the aggregate statistical data.

We find out the predictive value of $У_{10}$ and the confidence interval for the forecast, forecasting that $X_1$ and $X_2$ will increase by 0.01 point.

There is a confidence interval for linear regression:

$$-0.147 \leq y_p \leq 0.238.$$

Thus, with a given contingency of 0.95, the true value of the dependent variable У, that is the growth rate of digital business volume, ranging from -0.147 to 0.238.

We determine the partial coefficients of elasticity for the given forecast:

– $E_1$ = 5.11, it means that digital business growth will change by 5.11 % if the increase in using the Internet by individuals (factor $X_1$) changes by 1 % with the steady increase in the percentage of people using the Internet to order goods or services (factor $X_2$);

– $E_2$ = 3.84, it means that digital business growth will change by 3.84 % if factor $X_2$ (proportion of people using the Internet to order goods or services) changes by 1 % with the steady values of factor $X_1$ (using the Internet by individuals).

## Conclusion and prospects for future research.

Digital business has been developing rapidly since the beginning of the 21th century. Digital business is an entrepreneur activity (providing electronic commerce, electronic services) in the Internet for making a profit with the help of information and communication technologies that blur boundaries between the real and virtual worlds. Conducting our investigation, we found out that digital business model transformed from a 4-sectoral into a 3-sectoral one, including electronic commerce, electronic financial services, electronic education and training. The electronic commerce sector has completely absorbed the sector of other electronic transactions. The main trends in the EU digital business development are: increasing of electronic financial services use; increasing of network trading, declining of electronic education and training. The reduction in the volume of electronic education and training indicates a possible transformation of this sector into a new field.

There are influencing factors which are common for all three sectors of digital business, such as: Internet use by individuals, proportion of people using the Internet to order goods or services, the level of household Internet access. During the research, it was identified that factors are multicollinear between each other. Therefore, Internet use by individuals and proportion of people using the Internet to order goods or services were the only factors used for the analysis. As a result, the correlation between the EU digital business volume and chosen factors was revealed: with increasing growth rate of the Internet use by individuals by 1 %, the digital business growth rate increases by 5.11 % (at unchanged growth of proportion of people using the Internet to order products and services); and with increasing growth rate of proportion of people using the Internet to order goods or services by 1 %, the growth rate of digital business development increases by 3.84 % (at unchanged values of Internet use by individuals).

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# INNOVATIVE TRANSACTIONS OF THE FUTURE WITH CRYPTOCURRENCY

**Abstract.** Nowadays, cryptocurrency is gaining popularity. Used for a few years, it has been independent, anonymous, resistant to influence of banks or governments. The paper presents digital value carriers that have only a form of computer readable information and do not have a material equivalent (e.g. banknotes, coins or tokens). The paper discusses the history and characteristics of Bitcoin, analyzes what influence cryptocurrency has on traditional cashless payments, the methods and the most popular excavators to dig cryptocurrency, and how and where to buy and sell cryptocurrency at the exchange. In the conclusion it is indicated that the comprehensive legal regulations are necessary for proper cryptocurrency operations. The paper also includes instructions how to register at the CoinCasso exchange and how to use a "recommendation" link to do transactions at the exchange.

**Key words:** cryptocurrency, Bitcoins, cryptocurrency exchange, Coincasso, cryptocurrency excavators

Cryptocurrency is getting more and more popular in the world, it has been used only for a few years, is independent, anonymous, resilient to any influence of banks or state governments. It is defined in various ways, generally as a computer-based medium of exchange and it does not have any material representation (e.g.: banknotes, coins or counters).

Cryptocurrency can serve as a medium of exchange for business transactions. The market of cryptocurrency is expanding, attracts a huge number of investors who have not had any experience in trading before and what is more it is a real revolution in a present payment system. The advantages are: high anonymity, low costs and fast transactions, independence from a banking system.

To secure transaction and anonymity, the authors of the cryptocurrency protect the information exchange system (value) with the advanced cryptographic (coding) techniques. The cryptography gave the name to "Cryptocurrency". The implemented solutions enable to exchange the local currency in particular countries in the world round o'clock, 7 days in a week, 365 days in a year.

The first most known cryptocurrency is bitcoin. There are over 1000 various crypto-currencies in the world, which are alternatives for bitcoin. Experts estimate that cryptocurrency is an innovative solution in finance and IT in the last decade.

The number of bitcoins is never to exceed 21 mln. It is projected that practically the emission of bitcoins will cease completely in 2140, however 99 % of bitcoins will be mined around 2030 and 99.8 % in 2040.

**Bitcoin** uses peer-to-peer software programs (a computer network communication model to connect computers/peers all over the world and assigns them the same status) therefore the virtual currency can be transferred to any place on the globe within a few seconds. The virtual currency does not have its physical counterpart, is not tangible – it can be called a set of code lines. Every single **Bitcoin** has its own, unique code. This feature is the most difficult to understand – how can bitcoins have value if they are not physical legal tender but "virtual" money? The answer is

quite simple – it is people who decide about the value of a bitcoin. It is a kind of unwritten agreement in which we presume that Bitcoin has the value equal the value of traditional money – as long as virtual currency is popular its American one-dollar banknote has value of $1 because we accepted so. The whole present world uses virtual money – bank transfers, credit card payments, online shopping, etc.

Bitcoins are mined while the transaction is verified – this requires better and bigger computer power [1]. This is a reason why the bitcoin has become a speculative currency with which a lot can be earned in a very short time. This currency is not under control of any central bank and transactions are anonymous so it attracts more and more users. The question arises: can completely decentralized "currency", independent from any regulatory institutions be recognized as a legal money? This question is asked by economists, politicians and experts all over the world. Classification of Bitcoin - a product is controversial, as it brings profits but also threats to its users. Therefore, virtual coins have as many followers as opponents. There is not one clear definition of Bitcoin. It can be defined as a contemporary innovative, decentralized digital currency and its units are created on Internet. Bitcoin has a very particular feature – it does not have a physical form.

**From the historical perspective, Bitcoin is a third-generation payment system in the world after the era of money and banknotes and era of electronic banking**.

From the IT perspective Bitcoin is an implementation of the cryptocurrency concept, which was described for the first time by a programmer Wei Dai in 1998. Thus, Bitcoin is a decentralized information base with defined digital value flow between users' accounts of the system.

From the financial perspective, Bitcoin can be identified as a currency similar to Euro or US Dollar with an exception that they are controlled by governments, central banks and financial institutions. Bitcoin is not controlled by any central issuing institution. It is a virtual coin that can be gained by mining or bought from users at the market with other currency.

To simplify the issue Bitcoin can be defined as the electronic data ledger in a form of a file "bitcoin wallet" or stored by the third parties on the external server (a computer hard disk).

The amount of coins that can be produced (mined) is limited and closed, so the time to mine next virtual coin is longer and level of difficulty higher every time. Therefore, the huge Bitcoin "mines" composed by hundreds of cooperating processes, graphic charts and other subsystems are created all over the world. **Practically, it means that average user is not able to mine virtual coin on their own.**

Every mined Bitcoin reaches *blockchain* – the information archive where the lines of code for every Bitcoin and transaction are stored. These transactions are coded with complex and comprehensive mathematical formulas. Thus, we can be sure that particular Bitcoin is assigned exclusively to one person at the same time. This guarantees that if we possess that coin nobody else in the world cannot have it in their wallet – unless we send it ourselves or are the victim of hackers' attack.

The certain user who published in November 2008 the idea for creating virtual currency which he called Bitcoin is recognized as a pioneer of Bitcoin. He used the Japanese name Satoshi Nakamoto [2].

This innovative Internet currency bears the following features:

- Anonymity of transactions (Bitcoin address is completely anonymous and can be changed. So, it is not known who completed an operation and who owns this money,
- Lack of intermediary during transactions (transferred money reaches the addressee directly, omitting banks and financial institutions,
- Opposition to currency of particular countries (based on trust of governments and banks and social agreement, unexchangeable in gold) its value is established at the free market,
- Based exclusively on its users' trust,
- No physical form – its system is based on transaction ledger between various addresses,
- The right of possession does not depend on banks and governments (the right to possess Bitcoins is granted with private key – stored in a file wallet.dat, familiar only to the

owner, so the state security services cannot freeze/block the account,

- The whole system is based on the computer performance, mathematics, cryptography and distributed network,
- Resistance to inflation (no possibility to print/produce additional coins over its maxima; number of 21 mln Bitcoins),
- No owner or manager of the system – Bitcoin functions in a Peer-to-Peer (P2P) network which is not controlled or governed,
- Immediate transactions to any place in the world – only Internet are needed,
- Convenient, simple and fast transfers.

Bitcoin has become global only within 9 years. Its beginning is dated on 2009 when the "Bitcoin algorithm" was created and introduced to the public. Creating virtual currency is of technical nature as it is about solving algorithms (using comping knowledge). The effect of this kind of operation i.e. "mined Bitcoin" is automatically introduced to the public sphere with automatically assigned functionality. It can be traded directly or on virtual platforms (a kind of exchange points) There have already been automatic teller machines (ATM) for transactions with bitcoins.

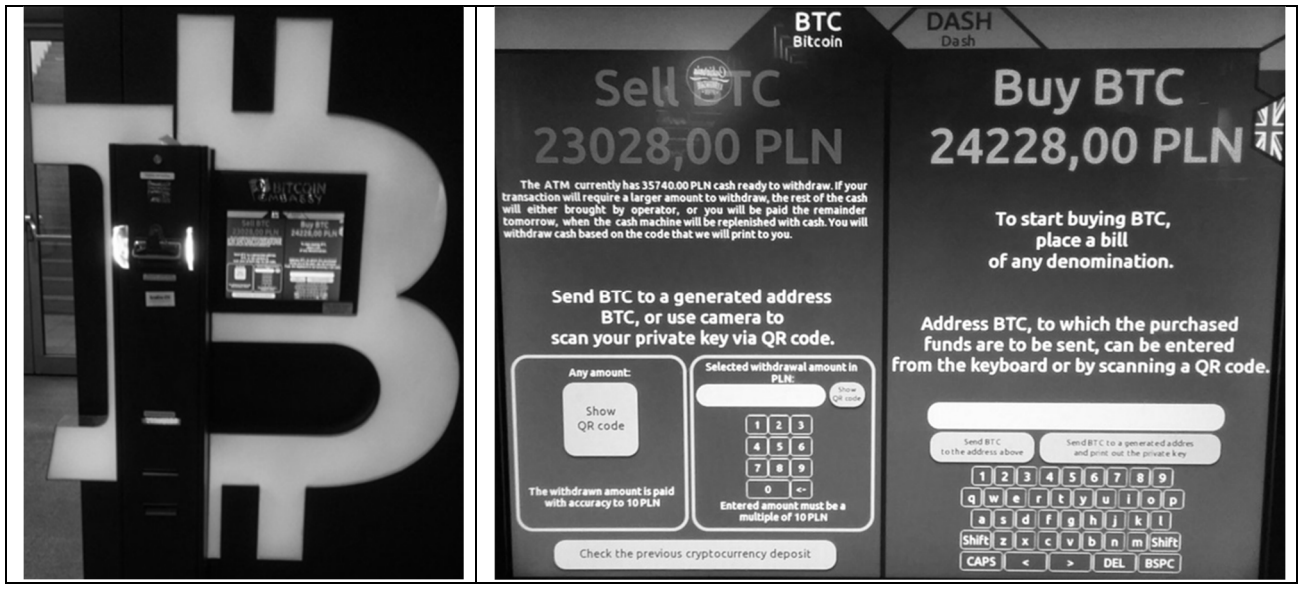


*Fig. 1. Automatic teller machine (ATM) in Krakow for transactions with cryptocurrency*

Bitcoin is a system based on mathematics and cryptography which makes it one of the safest currencies in the world impossible to print, block or forge.

To trade Bitcoin a new user should **install a Bitcoin wallet** on Internet first. There are various kinds of wallets with their strong and weak points. The most popular wallet for transactions is a **desktop wallet** installed on a computer/mobile phone which enables to manage Bitcoins.

Bitcoin is completely free from regulations and decentralized and can be traded all over the world. Thera are hundreds of bigger and smaller exchanges where bitcoin can be bought for traditional money. We can pay for services, buy products or invest with Bitcoin.

Cryptocurrency – virtual coins are treated in the same way as traditional money. The wallet and deposit in a wallet are secured. Transactions with suspected entities or unverified exchanges are not possible. Once completed transaction of a coin sent with its code cannot be reversed.

Mining is a process of creating block chains included in a shared public ledger. The mining terminology is adapted mainly because the process is similar to gold mining (**Bitcoin is often called a digital gold**), so the people or companies involved in a process of bitcoin mining (and other cryptocurrency) are called miners or diggers. Similar to miners in a carbon mines – "diggers" receive payment for completed work in coins which can be entered into circulation. This

mechanism is called *Proof of Work* (PoW). The additional motivator for a digger is commission for accepted transactions. So, they can receive a double payment – an award for mining and validation of transactions. To simplify Bitcoin mining resembles gold mining or a bit money printing by governments. Mining is based on prior programmed algorithms without any central institution which owns the whole pot and distributes money according to some criteria – which is typical to most state issuing institution of the physical money.

Comparing mining to lottery is also quite adequate – bitcoin mining is about guessing or more precisely, solving very complicated mathematical riddles, yet it is not ad hoc guessing but complex and intensive process.

**ASIC – presently the main mining system**

Application Specific Integrator Circuit Chips (ASIC) is a system adapted to Bitcoin mining, commonly known as an excavator an actually it is a name for an electronic system, dedicated to perform specialized mathematical calculations.

Bitcoin ASIC takes transactions through hash SHA-256 algorithm. This hardware is an independent unit which operates after plugging in and connecting to a mining pool. The excavators make mining faster and energy efficient. The more popular Bitcoin gest the more miners join.

The weak points of excavators are that they can perform only one specific task and cannot be used for other functions. So far Bitcoin mining was very tiresome and unbearable at home as the hardware fans, a part of the cooling system, produced big noise. The latest versions of excavators have the cooling system much quieter. ASIC can calculate hashes hundreds time faster than the best processor (CPU).

**Mining process and its difficulty level**

BTC network automatically changes the level of difficulty depending on the speed of solving tasks. The rule is that sometimes the amount of an award gets smaller. Presently it is 2.5 bitcoins for one block – then the value decreases (every four years at average, exactly every 21 0000 blocks) to 6 BTC, consequently decreasing till the last coins mined.

These top-down rules were formulated by Bitcoin designers before the first block was mined to regulate the number of issued coins. Thus, the more people participate in transaction confirmation the more difficult the "mathematical riddle" gets, which for Bitcoin is the hash with particular parameters. Introduction of this solution allows to adjust the level of difficulty and so stabilize the issuing speed on a desired level.

Solving the riddle is not a matter of logic but guessing on a big scale. It is as if every miner got a locker with a code to decipher. Only after decoding he succeeds as his block joins the system and he is paid. The most important is computer power of a particular miner of a group (hash rate) – the higher the hash rate the faster the combination is solved. The algorithms are designed in such a way that the mining a coin should take about 10 minutes. The bigger group of miners the higher level of difficulty. It is worth mentioning that the process of "guessing" itself is energy consuming and most trials finish unsuccessfully.

Mining pool is a place where the computing power (miners' power) is shared to mine block together and share an award in proportion to the individual input. Presently, lonely searching for blocks can take even hundreds of years so the best way of mining is joining groups cooperating to mine a block. Building "a mine" was the answer to difficulties in receiving payment by individual miners. There are also the specialized farms concentrating huge computing power of connected ASIC units or GPU. A typical Bitcoin farm operates on the assumption – the more computing power is generated the more bitcoins are mined. Therefore, the huge rooms (at first sight similar to server rooms) only for mining are built all over the world. The biggest cluster is located in China, Russia, the USA, Scandinavian countries and Island.

Only in 2013 the financial security agencies and central banks in some countries started to announce publicly their position to virtual currency. Bitcoin is not banned in most countries and its validation is not regulated. It proves that in these countries the law is not adapted not only to bitcoin market but even to already very popular "traditional" cashless settlements.

The price of Bitcoin similar to other cryptocurrencies went through many upward and

downward trends. In 2011 its value dynamically increased from 30 cents to $32 to come back to the level of $2. The relevant example is the end of 2013 when the record price reached $1135 (higher than the gold price) and almost 50 % decrease to $693 three days later.

**Alternative for national currency**

Bitcoins are more and more often playing an important role for the national currencies in small and big communities – taking a form of a kind of a local currency. In a few American towns local politicians decided to enter Bitcoin into circulation to improve budgetary position and motivate people to do businesses.

An increase in Bitcoin supply is predefined by the system protocol. Presently, 12 million coins are in circulation – 25 new coins enter every ten minutes. Generally, the supply is blocked and cannot outreach 21 million (Bitcoin is a closed system) and every four years the number of coins mined every ten minutes decreases. Although some experts believe that the pot of 21 million will be closed in 2033 of the others experts' analysis show that the mining will continue for the next one hundred years.

In the face of such changeable Bitcoin rate any long-term projections seems to be pointless. The world-famous economists gave their opinion on Bitcoin – some of them claimed that $ 40 000 for one coin would not surprise anyone, the others predicted the total failure of the system just a dozen or so month ago. So far none of these projections have not worked. One thing can be certain – as long as people are interested in cryptocurrency trading and exchange the value of cryptocurrency including Bitcoin would not reach critically low levels. The price is supported by growing popularity of Bitcoin as a means of payment for everyday services and products.

**What is the Cryptocurrency Exchange**?

Most trade in cryptocurrency, similar to stocks and goods, is carried out at the Exchanges. They are not a physical place for currency exchange but virtual and completely decentralized (similar to Forex market). They provide an access to most important information about the market – value of the particular virtual coins, assessments, trends, volumes, etc.

The Exchange is crucial for every virtual currency investor irrespectively to their skills. It is are created in a way to meet the needs of this market which is unique and double in its nature. The Exchange mechanism is adjusted to the traders' expectations who are familiar with the traditional exchanges and the beginners who have never invested at the exchange before.

**Buying and selling at the Cryptocurrency Exchange**

There are two ways of buying and selling at the cryptocurrency exchanges. The first method is direct buying from the exchange – no other investor is involved in this transaction. It is very simple- from your bank account the physical currency is transferred and exchange into virtual currency at the current rate. It is important to remember, however that buying virtual coins directly from the exchange owners the transaction is subject to additional handling charges. For the second method the exchange serves only as a broker, is a platform where buyers and sellers meet to complete transactions. The offers are presented in a form of a tender or a direct commission – we inform how many coins we want to buy and at what price. This solution is popular with investors as the role of the exchange is limited and no or very little additional charges are imposed.

**Wallet – a place for your BTC**

The user can store their virtual money like traditional money in a ***wallet***. Wallet is a place on the computer disk surface or a cloud where the bitcoins are stored. It is a conventional term as every Bitcoin is an integral part of a blockchain. Bitcoin uses coding with a key (every time two keys are created) One key is public and another private one. Wallet is a set of these keys.

**Where can I pay with Bitcoin?**

Bitcoin thanks to its popularity although is a completely virtual concept is gradually entering to the reality. The internet payment systems a; over the world start to accept Bitcoin and, in a media, we can hear about schools/hospitals and other

institutions which accept virtual currency as a form of payment. In the shops, clubs and hypermarkets the special readers are placed to pay with Bitcoin for shopping – it is possible with a wallet saved on a mobile phone. The list of the most popular payments with Bitcoin includes payments for food, accommodation, Internet services, education and online shopping [3].

| **Przykłady wybranych kryptowalut** | | | | |
|---|---|---|---|---|
| **Monero** | **Zcash – ZEC** | **Dogecoin** | **Peercoin** | **Tether (USDT)** |
| **Decred** | **Lisk** | **IOTA** | **EOS** | **Ethereum (ETH)** |
| **NEO** | **Qtum** | **Ripple (XRP)** | **Dash** | **Litecoin** |
| **Namecoin** | **Hshare (HSR)** | **Siacoin** | **TRON (TRX)** | **Stellar (XLM)** |

*Fig. 2. Examples of selected cryptocurrencies*

One of the solutions for building cryptocurrency exchange is CoinCasso project. CoinCasso Exchange is a licensed cryptocurrency exchange with the office in Estonia (PRO(AU)- Token Issuer, CoinCasso OU (EST) – Cryptocurrency exchange platform. As the first in the world this platform adopted a unique system of withdrawing to 80 % of profit from the whole CoinCasso infrastructure for every user in proportion to the number of CCX tokens they possess – CoinCasso Exchange Token. The whole infrastructure earns profit from the commissions for the intermediations in transactions. This is the only system in the world which share its 80 % profit with CCX token owners – CoinCaso Exchange Token [4].

CCX Token is based on a popular and tested blockchain technology. It is ERC-20 token based on Ethereum. It is a popular and universal solution with good transparency and variety of token protection and storage methods [4].

CCX tokens are available immediately after buying and can be withdrawn to the dedicated address with META MASK or ImToken application. The guaranteed trade with CCX tokens is provided at the cryptocurrency exchange – CoinCasso Exchange just after the end of selling tokens (after 30 December 2019). You can buy services or membership for any period of time with CCX tokens, which gives profits from the whole infrastructure [4].

CoinCasso Exchange tokens (CCX) can be bought at the official Internet site **coincasso.io**. We can pay for them by CoinPayments with a dozen

various cryptocurrencies: [BTC], [LTC], [BCH]. [ETH], [ETC], [DASH]. [DGB], [LSK], [WAVES], [ZEC], [ZEN], and other. PerfectMoney in USD are also accepted [4].

To become a member of CoinCasso project you should register by filling the form with: login, email address, password, confirm the password, PIN, year of birth, name and a surname, address, location, zip code, sex, number of the person who recommends us, e.g.: https://coincasso.io/register.aspx?u=2084.

Cryptocurrency are not stable and their value changes at present, which leads to many speculations and lack of its rate predictability. Consequently, at that stage these tendencies do not influence positively development and use of cryptocurrency.

The first comprehensive regulation in cryptocurrency business was introduced on the 1st January 2020 in Lichtenstein. The Token and Trustworthy Technology Service Providers Act (TVTG) called Liechtenstein Blockchain Act is to increase protection of investors, prevent money laundering and end legal dispute on that issue [5]. In Principality of Lichtenstein Frick Bank as the first bank in that country extended the range of its services by trade with cryptocurrency. This service is addressed to the "professional market users and financial intermediaries". Trade is possible with five cryptocurrencies: Bitcoin (BTC), Bitcoin Cash (BCH), Litecoin (LTC), Ripple (XRP) and Ether (ETH), exchangeable into Euro, USD and Swiss franc [5].

The above examples and experts' opinions indicate that in the near future cryptocurrency market will be regulated and international and national legal regulations will foster its further development and proper trading.

The introduced regulations should protect cryptocurrency owners from any kind of threats and dishonest actions. The faster they are enforced the faster, in the author's opinion cryptocurrency will become a global common means of payment.

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# LABOUR MARKET OF UKRAINE IN THE CONDITIONS OF INTENSIFICATION OF MIGRATION POPULATION PROCESSES

**Abstract**. The article identifies that the labour market is a complex integrated system with a large number of economic entities, including intermediaries or immigrants, as well as socio-economic processes, ambiguous determinants, large amounts of information and ever-increasing links between market contractors. The impact of population migration on the labour market in Ukraine is analysed, as well as the socio-economic factors on which the level of balancing of the labour market depends, with the adjustment of labour supply to the volume of emigration of the population are outlined. It is substantiated that the balance in the labour market can be achieved in the implementation of strategic partnership between the state, employers and institutions of the vocational education system, taking into account the socio-economic factors influencing the aggregate demand and aggregate supply in the labour market. It is proved that the structural characteristics of the labour market determine the migration intentions of the population, and the impact of the labour market conditions on emigration should be considered in the context of direct and inverse relations with the main macroeconomic and demographic processes. The research used general scientific methods of cognition (both empirical and theoretical), which are provided with specific tools for the subject area of knowledge, including factor and Ex-post analyses, and multivariate regression modelling. Based on the econometric study, the model of the relationship between the real level of remuneration in the donor and host country and the index (level) of balancing the labour market according to the adjusted aggregate supply (for the relevant population emigration) are presented for the first time.

**Key words:** labour market, migration, intensification, labour market balancing level, vacant demand, aggregate supply, current demand.

**Formulation of the problem.** Structural changes occurring in the Ukrainian economy at the present stage of development lead to significant negative changes in the labour market. They are to increase the scale of general and long-term unemployment and, as a consequence, inefficient use of the labour potential of the population, reduce the number of economically active population both in the country as a whole and in individual regions. The problem of introducing active measures to

prevent long-term unemployment is of particular relevance in the conditions where Ukraine has a very difficult and tense situation in terms of balancing supply and demand in the labour market. The lack of real prospects for reducing labour migration and job creation leads to an even greater imbalance in national labour market.

The volume of labour migration in Ukraine is increasing every year, and after the introduction of a visa-free regime and the opening of internal labour markets for foreign workers in Ukraine by individual EU Member States, new opportunities have emerged in the international labour market. Thus, most of the labour force emigrated to Poland, Germany, Italy and Spain, where wages and social security are much higher than in Ukraine. Migration processes affect the national labour market: on the one hand, emigration reduces unemployment in the country and, on the other, causes a shortage of labour in certain professions and thus significantly affects the level of wages. These processes have been observed for several decades, which is why the study of balancing the labour market in Ukraine in the context of increased migration activity of the population is especially relevant.

The state of labour market is the priority socio-economic parameter affecting the social development and competitiveness of the national economy.

On the one hand, the labour market is an element of the economic system on which the vector and the pace of macroeconomic dynamics of the country depend, and on the other, the market mediates the impact of macroeconomic policy and development on the well-being of the population and the state of many social processes [1, p. 31]. Scholars of Lviv School of Regional Studies say that labour market is a system in which the labour market and the job market organically interact [2, p. 22]. O.Levytska made an amendment that the conditions of functioning and balancing of the labour market are also influenced by non-traditional forms of employment, increasing the number of “precariat” as a separate social class, increasing requirements for the quality of human capital and the need to invest in its development [3]. Therefore, it should be argued that the main categories that characterize the efficiency of the functioning of the labour market are economically active population, economically inactive population, unemployed, employed in the formal economic sectors and freelancers. Economic agents in the labour market make decisions in order to optimize their own profit. The consumer of goods and services offers his skills and abilities to perform certain types of work (labour market supply), and the manufacturer has the necessary factors of production (including labour), pays a certain price, which shapes demand in the labour market. When the aggregate labour supply of individual consumer equals the demand in the labour market, provided that the values of the two parties are compared, balance is established (balancing condition). Depending on the period and market structure (monopsony or monopoly), the balancing conditions and form of establishment may vary. However, what is important is that labour market balance is difficult to achieve, and a state of constant imbalance is more natural.

While analysing the labour market in terms of the conjuncture, it should be noted that the entities responsible for demand show an advantage. This is not a distinguishing feature of the labour market, since in today's market economy there is a phenomenon known as the consumer market: the consumer (demand in the market) makes a choice of products offered by many suppliers (supply). Therefore, balance in such a market requires adjustment, mainly of the structure and dynamics of supply. In turn, the most important determinants of the labour market are the factors that influence it: wages and salaries, the number of people with certain qualifications, the benefits of informal employment, and the non-economic determinants of economic activity. In addition, labour market policy measures such as size and duration of unemployment assistance provided may be factors influencing the supply [4, p. 59].

Among the instruments that influence the supply in the labour market, special attention is paid to those measures that cause an increase in the quantity and quality of labour. This leads to a fuller use of the country's resources, a reduction of unemployment rate and an increase in employment. Reducing the mismatch between supply and demand in the labour market can encourage population to acquire higher qualifications, engage

in self-education, which results in the support and implementation by the state of the concept of lifelong learning. The desired result of such activity is to increase the number of economically active high-skilled population, which is a valuable asset in the competitive labour market today. Note that the factors affecting aggregate and vacant demand are wages and labour productivity related to technological progress and indirect demand for products resulting from the labour provided [5, p. 84].

Based on the above, we formulated the hypothesis of this study: the balance of the labour market in the context of migration intensification can be achieved by the levelling pay disparities in the donor country and the host country, as well as creating an adequate number of high-paying vacancies.

**Analysis of recent research.** Employment issues, increase of unemployment, regulation of the labour market in the period of increased migration processes are accompanied by increased scientific activity. Research on this issue does not have a clear construction of mechanisms for ensuring balance in the labour market. Scholars such as P. Beer and T. Schils have taken a liberal approach to this problem [6]. A. Downes emphasizes that active intervention in the process of balancing supply and demand is justified only in low-competitive labour markets [7]. V. Druzhynina indicates the need for a priority principle of balancing regional and local labour markets. In her opinion, the balance in the labour market most influences the efficiency and productivity of employees [8]. J. Seitkhozhina recognizes the importance of balance in a time when there is significant growth in the labour market and pays particular attention to balancing in terms of gender and age equality rather than professional qualification [9].

Emigration reduces the supply of labour in the labour market, forecasting the volume and structure of migration flows requires understanding the factors that influence the formation of migrants' intentions. E. Elbadawy, based on an analysis of the determinants of youth migration intentions, found that unemployment is not an important factor stimulating emigration [10]. Most young people intend to migrate and are willing to do work that is not in line with their skills and specialization. This means that even skilled emigrants will initially perform low-paid and low-skilled jobs. A. David and A. Marouani cite the results of years of research into the labour market of emigrants, which show that more than half of all emigrants are unemployed [11], and argue that the socio-demographic adaptation of migrants affects the level of labour market balance both in host country and in donor country [12]. In particular, A. David and A. Lenoel assessed the impact of women's labour migration on structural changes and socio-economic effect on regional labour markets [13].

Scientific approaches to the impact of migration on the labour market are conventionally divided into two categories: modelling based and effects research [14, 16]. Studies of migration effects based on the relationship between wage or employment variations and fluctuations in migration stocks or flows make it possible to identify migration risks and other current or potential changes in migration patterns. A small part of the studies on the impact of population migration on the labour market with a focus on balancing is based on empirical methods of cognition, and the results obtained are high estimates based on a comprehensive analysis of a large number of indicators in many countries [17]. Particularly noteworthy is the approach offered by L. Chernobay, V.Adamyk and S.Malibroda, which is based on modelling the interaction of international migration and the economy of the country hosting the migrants and providing them with certain opportunities, as well as the SNA-2008 principle applied for modelling [18].

In the context of deepening globalization processes, changes in labour supply are the causes of labour price transformations in the short term. Using a simulation approach, G.Borjas confirms the impact of emigration and immigration on regional and national labour markets [14]. Studies by B. Elsner [20], S. P. Kerr and V. Kerr [21], also conducted by the simulation method, and revealed a significant impact of emigration on wages. In broad terms, these results are consistent with the long-term impact of migration on socio-economic indicators, as evidenced by labour market theory. Their research focused on analysing the age

qualification of potential migrants, the impact of unemployment and employment on migration in the light of balancing supply and demand.

D. Card's research is focused on building an economic-mathematical model of the impact of emigration on indicators of regional labour markets. The researcher examined the migration effects in the focus of changes in wages and employment [15]. In addition, based on econometric approach for analysing the conditions of balancing the labour market, taking into account the consequences of migration, A. Glitz in his studies considered the massive international migration flows, which are mainly caused by socio-economic factors for a limited period of time [19].

Some studies in this area [22, 23] focus on identifying the causes of labour market imbalance. In particular, it has been found that changes in the level of remuneration require labour demand to be corrected. If adjustment is made through labour supply, as a result, emigration only exacerbates the negative effects of unemployment in the host country and does not act as a regulatory mechanism.

## Methodology of research

The study of the labour market in terms of intensification of migration processes was carried out with the method of system dynamics. The authors used Ex-Post analysis to establish the relationship of cause and effect, including feedback, between population migration and the level of labour market balancing. Using this method makes it possible to compare several labour market imbalances, taking into account a number of dimensions (wage rates, unemployment and employment rates, external migration volumes, etc.) over a long-term period in the country of emigration and immigration at the same time.

The mathematical apparatus of econometric analysis was applied to confirm the author's hypothesis, in particular such methods as multiple correlation analysis, regression analysis, multiple-factor analysis of variance, and Granger causality. The dependence of the level of labour market balancing (result attribute) on socio-economic factors has been identified using a multiple regression model constructed with the method of the least squares with instrumental variables (2SLS). Such research tools allow considering the mutual causality between the studied variables. All values of the factors and the result attribute are reduced to a homogeneous series (standardized) and "cleared" from seasonality in order to get high estimates of the reliability of the obtained results. The constructed model helps to establish how any changes in socio-economic factors can lead to transformations in the labour market.

The adequacy of the econometric model was verified using the coefficients of reliability. The adjusted value of the coefficient of determination (adj. $R^2$) is 0.98729; the coefficients of the Durbin–Watson's (DW) statistics are within acceptable limits (about 2), without detecting autocorrelations of residuals.

Granger causality examines the relationship between socio-economic factors that determine the greatest impact on aggregate demand and aggregate supply in the labour market, external emigration of the population, determine the conditions of imbalances and the possibility of offsetting the imbalance of regional and national labour markets. The results of the analysis allow us to confirm the hypothesis about the mutual influence of the level of balancing of the labour market, where the aggregate supply is adjusted for the emigration of the population, and socio-economic factors, in particular the level of remuneration in the country of expulsion and acceptance of labour.

## The main results of the research

### *Aggregate supply and demand in the labour market of Ukraine.*

In Ukraine, there is a tendency to reduce the number of employed population. For the period of 2010–2016, there was a gradual decrease of economically active population in conditions of increased external migration of the population, due to higher level of remuneration and social protection in the labour market abroad, as well as the military and political situation in Ukraine. Thus, the number of employed population aged 15–70 in the first half of 2017, compared with the first half of 2016, decreased by 118.4 thousand people (or 0.7 %) and amounted to 16.1 million, which includes 15.4 million people of working age. The employment rate of the population aged 15–70 has decreased from 56.2 % to 56.0 % during this period and the population of working age has increased from 64.0 % to 64.2 %.

The highest level of this indicator was observed among persons aged 30–49, and the lowest - among young people aged 15–24 and individuals aged 60–70. The employment reductions in 2017, compared to the corresponding period of the previous year, occurred among the population aged 25–49 and 60–70. The growth of this indicator was observed among persons aged 15–24 (by 1.4 pp) and 50–59 (by 0.8 pp).

The number of unemployed (according to the ILO methodology) aged 15-70 in the first half of 2017, compared to the corresponding period of 2016, increased by 18.2 thousand people (or 1.1 %) and amounted to 1.7 million people. Among the unemployed, two thirds were urban dwellers (1.1 million people), the rest were rural residents. The increase in the number of unemployed people aged 15–70 was at the expense of persons of working age (by 19.2 thousand people or by 1.1 %). Of the total number of unemployed, 1.4 million people (81.7 %) had previously worked, while the remaining 0.3 million had been looking for a job for the first time and had no work experience. The latter were dominated by young people who had not been employed after graduation. In particular, among those unemployed in the first half of 2017, the share of persons, aged 15–24 was 76.5 %, and in the age group of 25–29, this share was 21.8 %. More than two-thirds of the unemployed were looking for a job on their own (69.1 %) and the rest sought assistance from the State Employment Service. This situation is connected with the closure of a large number of industrial enterprises due to annexation of the Autonomous Republic of Crimea and military actions in Donetsk and Luhansk regions. The problem of internal migration of the population is also a pressing issue, which puts an additional burden on the labour market of certain regions in Ukraine.

According to the State Statistics Service of Ukraine, the number of vacancies declared by employers amounted to 66.5 thousand at the end of June 2017, which is 63.0 % more than at the end of June 2016. One in four of the total vacancies was in the manufacturing industry, one in six was in the wholesale and retail trade; repair of motor vehicles and motorcycles, one in ten in transport, warehousing, postal and courier services.

The structural disparity between the demand for labour and its supply is a factor that limits both the employment opportunities of the unemployed and the satisfaction of employers' needs in workers.

The workload of registered unemployed for 10 vacancies in the whole country has decreased from 95 persons at the end of June 2016 to 50 persons at the end of June 2017.

The worsening of the relation between the labour supply and demand for it occurred in all groups of professions, while the most acute is the situation in the professions and specialties that do not require a high level of professional training and qualification of employees. Thus, 12 technicians applied for one job vacancy, 13 persons for trade and services, 14 persons for the simplest professions without special training, and 53 persons for agriculture and forestry, fish farming and fishing. By comparison, among the skilled workers and specialists, there were six applicants for one vacancy, and there were five applicants among professionals. Individual professions and specialties exacerbate structural discrepancies between the demand for labour and its supply. The most urgent problem is the imbalance in the qualification level, since a large part of unemployed citizens do not suit employers because of special requirements for the level of qualification and work experience (conclusions are made on the basis of data [24]).

It should be emphasized that there is a quantitative imbalance in the labour market of Ukraine, which is exacerbated by the low quality characteristics of a large number of vacancies, in particular the low level of wages. Among the vacancies announced by employers in 2016, over 30 % offered wages that was at the minimum subsistence level, and only 8 % of the vacancies offered wages above the average. At the same time, low wages are offered to highly qualified representatives of the working professions, as well as specialists in the fields of medicine, education, software, economics, jurisprudence, etc. [5, p. 61–62].

Based on the analysis of aggregate demand and supply for the years 2003-2017, it is possible to estimate the level of its balance[1]. Studies have shown that there is no balance in the labour market in Ukraine, since the value of the level of balance in the period 2003–2017 has fluctuated within

[1] The level of balancing was defined as the ratio of aggregate demand (occupied and vacant jobs) to aggregate supply (economically active population).

90.77–97.56 %. Under such conditions, part of the economically active population is unable to find a job, and the unemployment rate is quite high. With the assistance of the State Employment Service, 232.4 thousand people were employed in the first half of 2017, and 236.2 thousand in the first half of 2016. Of the registered unemployed persons during the period, 43.9 % women were employed and 34.8 % were young people under 35. During the first half of 2017, more than two-thirds (70.3 %) of the registered unemployed were hired by agricultural, forestry and fishery enterprises, processing industry, as well as wholesale and retail trade; repair of motor vehicles and motorcycles. The share of employed persons increased by 3.0 percentage points compared to the first half of 2016 and in the first half of 2017, it accounted for 30.2 % of citizens who were unemployed in the State Employment Service [24].

Ex-Post analysis, based on a comparison of the average wage (USD / h) and the volume of external migration (thousand people) in the long-term period, helped to demonstrate the situation on the labour market in Ukraine (Fig. 1). It should be added that the presented results support the conclusion that in periods of wages reduction in the donor country, migration volumes are increasing, but the balance of the labour market is not observed.

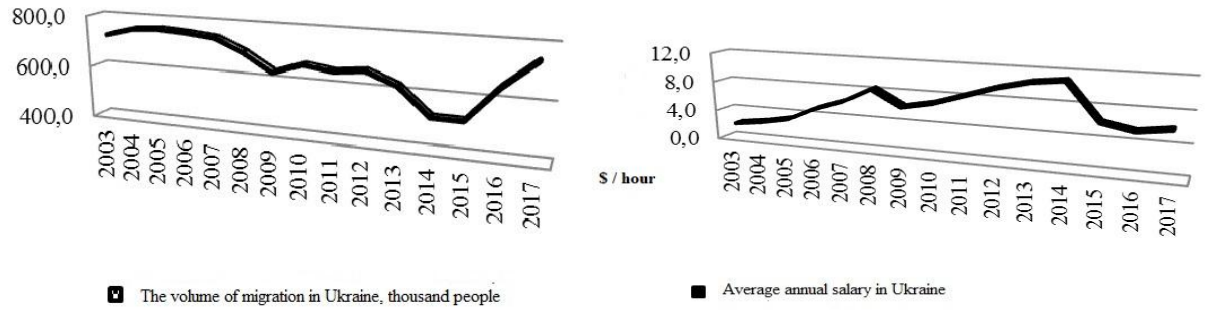


*Fig. 1. Results of Ex-Post analysis of the labour market in Ukraine, 2003–2017*

*Formed by the author on the basis of official statistics of Ukraine [24]*

***Analysis of the impact of migration on the level of labour market balancing in Ukraine.***

The results of the study of aggregate demand and supply in the Ukrainian labour market make it possible to calculate a labour market balancing index that would take into account external migration volumes (Fig. 2). Thus, due to the large number of migrants, the volume of aggregate supply on the market is decreasing, so, theoretically, the level of balancing should increase. However, the results obtained are the opposite. Only in the period of 2010–2011 the aggregate demand in the labour market was much higher than supply. This is explained by the stable socio-economic situation in the country, the increase in GRPs per person, the increase in average wages and social benefits. During the period of economic and political instability in Ukraine, migration activity of the population is increasing, but the balance in the labour market is not observed. To understand the causes of this situation, it is necessary to conduct a factor analysis of the impact on the level of labour market balance that considers the migration of the population.

Aggregate labour market supply is influenced by factors related to the characteristics of the region or country as a whole, the social structure of the population, demographic, migration, educational and financial components. Factors influencing aggregate demand are political, economic, innovation, investment, social and environmental factors. With the help of Granger causality, the relationship between labour market factors and conditions, namely aggregate supply and demand, were elaborated. The results of the analysis show that all factors that are closely related to the level of balancing have

a function of direct dependence. The results of the study are presented in Table 1.

Based on the empirical results, it can be concluded that the share of employed population aged 15–70 influences the level of balance (this is observed in two lags with a statistical significance of 10 %). In addition, the level of balance affects the proportion of employed population aged 15–70 (with different statistical significance at the level of 5–10 %). This is due to the fact that the employed population forms an aggregate supply, which basically determines the conditions for balancing the labour market.

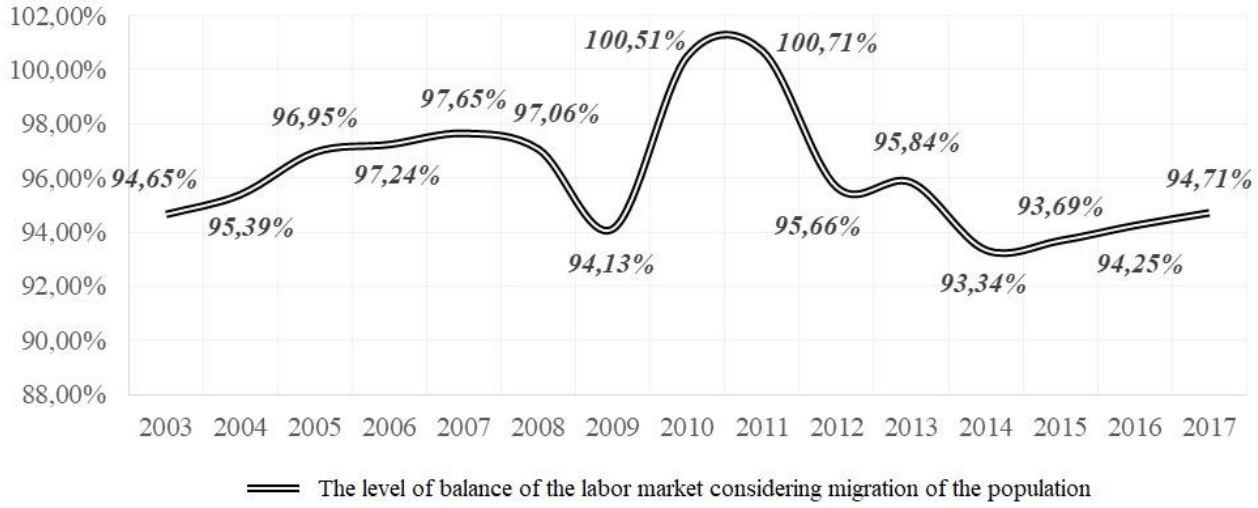


*Fig. 2. Labour market of Ukraine considering migration of the population, 2003–2017*

*It is based on the author's calculations*

Table 1

**Influence of socio-economic indicators and the level of balance of the labour market (taking into account migration of population)**

(according to Granger causality)

| Impact hypotheses | Lags | | |
|---|---|---|---|
| | *1* | *2* | *3* |
| $EMPL_t$ *on* $BALANCE_t$ | 3.458 (0.096*) | 5.303 (0.058*) | 2.180 (0.453) |
| *$BALANCE_t$* on *$EMPL_t$* | 3.648 (0.089*) | 9.754 (0.019**) | 10.79 (0.219) |
| $BALANCE_t$ *on* $VACDEM_t$ | 0.301 (0.594) | 0.466 (0.644) | 3.052 (0.131) |
| *$VACDEM_t$* on *$BALANCE_t$* | 1.786 (0.208) | 0.900 (0.444) | 1.641 (0.293) |
| $BALANCE_t$ *on* $UNEMPL_t$ | 0.327 (0.579) | 1.289 (0.327) | 1.492 (0.324) |
| *$UNEMPL_t$* on *$BALANCE_t$* | 3.208 (0.100*) | 3.244 (0.093*) | 1.956 (0.239) |

*Note: annual data are used for the analysis, where BALANCEt is a level of balance; EMPLt is share of employed population aged 15–70; VACDEMt - vacancy demand; UNEMPLt – unemployment rate of all population aged 15–70.*

*It is submitted according to the author's calculations*

The lack of a significant effect of the level of balance on vacant demand is also noticeable. The level of balance does not have a significant impact on the unemployment rate (population aged 15–70), while the unemployment rate affects the balance (in two lags with different statistical significance at the level of 10 %). This is primarily because unemployed people are potential migrants under the current conditions; they reduce the aggregate supply, but at the same time increase the imbalance in the labour market. As the average number of full-time employees grows, the balance index increases, and a decrease in the workload per vacancy causes a decrease in the level of balance. Thus, it can be argued that the current supply in the labour market will always cause an imbalance between aggregate demand and supply. Such conclusions can be drawn based on the results obtained by econometric modelling (1).

$$\begin{array}{lccccccc} BAL_t = & -0.942 & -0.979\,BAL_{t-1} & +0.047\,AVER_t & -0.009\,LOAD_t & -0.029\,RECEP_t & -0.049\,UNEMPL_t & -0.027\,WAGE_t \\ & (-12.706^{*}) & -29{,}96 & (4.080^{*}) & (-3.078^{**}) & (-2.565^{*}) & (-2.849) & -3.490 \\ & adj.R^2 = 0.98 & & DW\ -\ 1.9 & & & & \end{array} \quad (1)$$

Reduced employee acceptance limits the balancing index, reducing unemployment and wages does not increase the balance index. Yes, there is such a situation that as the average number of full-time employees increases, the balance index will increase by 0.47 %, and with the decrease of the load for one vacancy by 1 %, it will decrease by 0.009 %. Thus, if the level of employee reception is reduced by 1 %, the level of balancing will decrease by 0.029 %; as unemployment and wages decrease by 1 %, the balance index will decrease by 0.48 % and 0.027 % respectively.

The increase in aggregate demand reflects the prospective development of the country's economy and, accordingly, the improvement of the structure of jobs or the increase in their number. Such changes will be at the expense of sustainable development of enterprises that create new jobs, increase productivity, overcome technological backlogs and create decent working conditions by increasing direct investment in the Ukrainian economy. The increase in aggregate supply will be driven by improved demographics, as well as minimizing the negative effects of migration, an increase in average wages and a reduction in the turnover of highly skilled workers.

It should be emphasized that the high level of labour migration of both workers and highly skilled workers has a significant impact on the labour market in the country. Therefore, its regulation becomes a decisive factor for balancing the labour market and, consequently, the socio-economic development of Ukraine.

## Conclusions

The conducted research shows that labour emigration is sensitive to socio-economic conditions in the country. As a rule, previous studies have used factor analysis methodology to identify the impact of socio-economic factors on the labour market situation of the donor country or the host country. The author's approach to the study of the level of labour market balancing in terms of migration intensification, in contrast to previous studies, focuses on identifying the influence of dominant socio-economic factors of employment on the level of labour market balancing, which is defined in the form of an index, where the aggregate supply is adjusted for emigration volumes. Based on the presented model of dependence of socio-economic factors and the level of balancing of the labour market, taking into account the migration of the population, the authors confirmed the hypothesis that employment and unemployment, as well as the level of remuneration in the donor and host countries exert a dominant influence on the total labour supply in the regional labour market, shape new conditions of flexibility of the open labour market of Ukraine.

It has been proven that such a labour market balancing tool as an increase in wages in the labour donor country does not effectively balance aggregate demand and aggregate supply in the labour market. The intensity of labour migration is determined by the widening wage gap in the countries of displacement and

attraction of migrants, which is why it is a fundamental factor in reducing the labour supply in the regional labour market.

The study of wage levels by systematic dynamics and Ex-post analysis has confirmed that the decrease in the economically active population and the unemployment rate are the factors that stimulate wage increases and eliminate imbalances in the labour market only in the long-term period. On the other hand, increasing emigration helps balance regional labour markets in the short term, but only in the low skilled and low paid segment.

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# ACCOUNTING AND ANALYTICAL PROBLEMS OF CULTURAL HERITAGE SECURITY IN POLISH-UKRAINIAN CROSS-BORDER COOPERATION

**Abstract.** The safety of cultural heritage in a cross-border dimension depends significantly on the influence of accounting and analytical factors, as they form the basis for the perception of its objects for their proper preservation and constant monitoring of the state and risks of irreversible changes. This issue is especially important in Polish-Ukrainian cross-border cooperation, where historical realities have led to the destruction and destruction of many cultural heritage sites. Accounting and analytical problems of cultural heritage safety arise both in connection with the lack of theoretical and methodological studies of these issues and due to the imperfection of the legal and regulatory field, especially in Ukraine. It is substantiated that the main problem of theoretical and methodological character is the lack of studies aimed at developing a standard system of perception of cultural heritage objects in the Polish-Ukrainian border area. The results of the analysis of the main criteria of the system of perception used in accounting for cultural heritage objects, the example of intangible monuments, the absence of scientifically substantiated species and varieties, which complicates the use of standard methods and techniques of accounting and analytical nature. First of all, the standardization of the classification parameters of cultural heritage objects, taking into account the national priorities of Ukraine and Poland, requires scientific study. It is also established that the positive changes made in recent years in the legal support for the preservation of the common cultural heritage have in their tools accounting and analytical aspects that can significantly affect their objective perception for exercising constant control. In the context of solving accounting and analytical problems, it is necessary to develop a methodology for objective evaluation of cultural heritage objects, taking into account the prospect of world cultural and historical progress. Addressing these issues also involves taking into account the achievements of Poland in the classification of cultural and historical sites, as well as those initiatives for the protection of the common cultural and historical heritage concerning sites located in the adjacent border area.

**Key words:** accounting and analytical issues, cultural heritage, Polish-Ukrainian cross-border cooperation, security.

**Formulation of the problem.**

The security of cultural heritage in Polish-Ukrainian cross-border cooperation is one of the problems of security of Ukraine as a young state. Moreover, its solution requires a number of measures, including transboundary nature, which are first and foremost related to the accounting and analytical support of cultural heritage objects in order to control their condition and preservation.

**Topicality of the chosen topic.**

The availability of accounting and analytical support allows to form an effective economic and legal basis for the perception, evaluation and registration of cultural heritage objects. After all, the accounting, analysis and control of cultural heritage objects must be organized in such a way as to cover all valuable cultural and historical monuments in order to preserve them properly. Particular relevance of this issue is evident in Polish-Ukrainian relations. As the common historical past of Poland and Ukraine has been subject to different situations as a result of political

and economic reasons. One of the worst consequences has been the destruction and destruction of many cultural heritage sites on both sides of today's border. Therefore, the cross-border cooperation between Poland and Ukraine on the preservation of cultural heritage is in the forefront of the most intellectual potential of both nations.

**Analysis of recent research and publications.**

Despite increasing attention to this issue by scholars, central government and local communities, the organizational, methodological and legal foundations of preserving cultural and historical values are unable to provide an effective mechanism for their safety. Thus, at the 2017 International Conference organized and funded through the Poland-Belarus-Ukraine Cross-Border Cooperation, these issues were addressed from the point of view of improving control over the preservation of cultural and historical values [1]. V. Geyets, V. Gnyp, M. Karaim, M. Kizim, T. Klebanova, Y. Kotlyarevsky, H. Mandzinovskaya, O. Melnikov, L. Sukhomlin, O. Khalina, O. Chernyak, A. Stangret and many others paid attention to safety issues of economic entities in their works [2]. However, these studies did not sufficiently address the issues of cultural heritage security, and in particular in the cross-border dimension [3]. Continuing research on the conservation of cultural and historical values requires not only new realities of time, but also identified problems of accounting and analytical nature, without which it is impossible to provide an effective mechanism for their safety and avoid the risk of damage and loss.

**Purpose and tasks.**

The purpose of the study is to address accounting and analytical issues that have an impact on the security of cultural heritage in Polish-Ukrainian cross-border cooperation. Achieving this goal involves solving a specific range of tasks, namely: to find out the essence of the problem and outline the tasks of the central bodies of legislative and executive power to preserve cultural heritage; analyze the cause and effect relationships of the occurrence and existence of accounting and analytical problems in the field of cultural and historical heritage conservation; to find out the content of accounting and analytical problems of objects of intangible cultural heritage; to determine the possibilities of solving accounting and analytical problems of cultural heritage safety, taking into account the experience of Poland, as well as joint initiatives concerning the preservation and protection of the common cultural and historical heritage in the border area; to conduct a survey among students of the specialty “Education and taxation” on cultural and historical heritage and trade in antiques.

**Outline of the main research material and the obtained results.**

It is well known that accounting and analytical problems of cultural heritage safety arise from the lack of theoretical and methodological studies of these issues and the imperfection of the legal field, on the one hand, and their adequacy in ensuring the activities of organizations in Poland and Ukraine – on the other. As the basics of accounting methodology are grounded in the legal framework, legislative measures are required to safeguard cultural heritage. Museums played an important role in the formation of an effective legal field, with regard to the preservation of cultural and historical values in Ukraine. Thus, in the Open Letter of the Museum and Monumental Community of Ukraine dated May 9, 2019, representatives of 118 museums and reserves from all regions of Ukraine and representatives of more than 20 scientific institutions and educational institutions, as well as professional branch organizations addressed the head of the Verkhovna Rada and MPs on the occasion of International Museum Day, celebrated on May 18. The complaint noted an unpleasant misunderstanding that lasted more than a year (April 18, 2018). It was then that the Verkhovna Rada of Ukraine hosted parliamentary hearings on “The state, problems and prospects of cultural heritage protection in Ukraine” [4]. Following these hearings, appropriate comprehensive recommendations were developed for the executive and local self-government bodies on the protection of cultural property. The recommendations covered all issues pertaining to the protection of cultural heritage sites, their restoration, the fight against the illicit circulation of cultural property, the development of international cooperation, the promotion of Ukrainian history,

and the legislative support for the protection and protection of cultural heritage. However, at the time of writing the aforementioned open letter, these Recommendations were not considered by the Verkhovna Rada for adoption of the relevant resolution, although 17 times were included on the agenda. Under the influence of the museum and monumental community, as well as the upcoming elections, this issue was considered on May 14, 2019 and a resolution was adopted [5]. The adopted Resolution corresponds to the content of Article 54 of the Constitution of Ukraine, which states: "the State shall ensure the preservation of historical monuments and other objects of cultural value, take measures to return to Ukraine cultural values of the people outside its borders" [6]. At the same time, the versatility and diversity of cultural heritage sites in Ukraine are represented by a wide range of objects, namely: immovable cultural and historical sites, museum and archival values, monuments of folk art and collectibles. At the same time, the declared intentions need substantive detail regarding the accounting and analytical support for the formation of the economic security system for the preservation of cultural heritage. In the context of the identified tasks of the President of Ukraine, the Verkhovna Rada and the Cabinet of Ministers, the contours of accounting and analytical issues that clearly need to be resolved are clearly manifested. Moreover, the sooner these issues become clear and legal, the sooner the mechanism for preserving cultural heritage will work. Thus, the President of Ukraine is tasked with submitting to the Verkhovna Rada of Ukraine a draft law of Ukraine on the accession of Ukraine to the Second Protocol to the Convention on the Protection of Cultural Property in the Event of Armed Conflict signed in The Hague as early as 1954. However, these issues concern Crimea and eastern Ukraine. however, information support for future actions under this Convention will be based solely on accounting and analytical data on cultural and historical heritage sites. Accordingly, accounting and analytical information should conform to the standard classification of such values, and their valuation should be determined on the basis of generally recognized and acceptable worldwide methods.

The Verkhovna Rada of Ukraine is tasked with ensuring the consideration and adoption of a number of laws containing issues of accounting and analytical support (Table 1).

*Table 1*

**Issues of accounting and analytical character on the protection of cultural heritage in the changes to the laws of Ukraine**

| No. | The essence of change | Accounting and analytical aspects |
|---|---|---|
| 5677 | Increasing responsibility in the field of cultural heritage protection | Object classification and evaluation |
| 5679 | Prohibition of outdoor advertising on cultural heritage sites | Object recognition |
| 6765 | Unification of the mechanism of establishing and strengthening administrative responsibility for violation of the requirements of the legislation on protection of cultural heritage | Estimation of damages caused |
| 6769 | Strengthening of state supervision (control) in the field of cultural heritage protection | Control options, accounting for changes and moves |
| 8050 | Increasing criminal responsibility for crimes in the field of cultural heritage protection | Object classification and evaluation |
| 8202 | Determining the procedure for the forced redemption of cultural objects if the owners, through their actions or omissions, contribute to their destruction | Estimation of damages caused |
| 8314 | Combating the illegal seizure of archaeological sites | Object accounting, analysis and control |

As can be seen from Table 1, the Verkhovna Rada of Ukraine needs to ensure consideration and adoption of a number of laws, first of all, on strengthening of responsibility in the field of cultural heritage protection, as well as prohibition of unauthorized use of such objects, for example for outdoor advertising on cultural monuments. heritage. That is, the amendments relate to the

Code of Administrative Offenses, the Criminal Code of Ukraine and the Law of Ukraine "On Protection of Cultural Heritage". Particular attention is paid to amendments to the Law of Ukraine "On Basic Principles of State Supervision (Control) in the Field of Economic Activity" on Cultural Heritage Sites, including the Definition of the Procedure for Compulsory Redemption of Cultural Heritage Sites if Owners With Their Actions or Inaction their destruction. An example of such situations is the leasing of some ancient castles in the Lviv region when the tenant fails to fulfill his or her obligations to preserve and restore cultural heritage objects [1]. Also important are changes to some Ukrainian legislation to counteract the illegal seizure of archaeological sites. All these changes include accounting and analytical aspects that relate, first and foremost, to the classification of cultural and historical values, valuation methods and methods of determining the loss of cultural heritage objects.

The third group of tasks, jointly identified by the Verkhovna Rada and the Cabinet of Ministers of Ukraine on cultural heritage preservation, envisages four main areas of activity (Table 2).

*Table 2*

**Main directions of joint activity of the Verkhovna Rada and the Cabinet of Ministers of Ukraine for the preservation of cultural heritage and their accounting and analytical aspects**

| No. | Directions | Accounting and analytical aspects |
|---|---|---|
| 1 | Develop and adopt laws to prevent the archaeological exploration of archaeological sites, the status of private collections, and harmonize legislation in the field of museums with international norms and best European practices | Accounting and registration of artifacts, standardization of classification features |
| 2 | Ensure the harmonization of cultural heritage legislation with urban planning legislation | Accounting and registration of cultural objects |
| 3 | Provide funds in the State Budget of Ukraine (from 2019) to create an electronic information resource for cultural heritage and cultural values | Classification of cultural property, their evaluation and inventory |
| 4 | Introducing preferential taxation in the field of cultural heritage protection and preferential lending from the state and local budgets for the restoration works on the objects of cultural heritage, creating a system of incentives for conscientious owners of monuments | Accounting and registration of objects of cultural heritage and development of criteria for activities that give rise to the right to tax exemption |

As can be seen from the table. 2, there is a need to adopt laws to prevent the illegal conduct of archaeological prospecting, excavations, and underwater work on archaeological heritage sites. This need is driven by the rapid growth rate of private archeological exploration compared to the activities of official archeological expeditions funded on a residual basis inherited in the post-socialist legal space. The adoption of such a law should not be prohibitive in nature but purely stimulating, since private archaeological sites are more efficient because of their technical equipment. The prohibition of private archeological activity does not solve the problem of unauthorized exploration, but only distorts relations in the market of antiques and cultural values, stimulating the development of a shadow economy. The formation of a legislative field, taking into account world best practices, should create the conditions for private archaeologists to be most interested in selling cultural property to state museums and archives. At the same time, such activities should be monitored for the purpose of providing information for scientific research. That is, found artifacts should be recorded in a single register of cultural and historical values and displacement. It is in this part that there is a need for a standard classification of cultural heritage sites that is in line with national best practices. Of particular concern is the need to regulate the legal status of private collections, as stated in the Decree. In our opinion, the consolidation of the status of private collections

in the legislative field should be based on the principle of their national identity in the treasury of the world cultural heritage. It is well known that a comprehensive themed collection is valued as the sum of the value of the individual items and the cost of the subject's efforts on the one hand, and the uniqueness of this collection nationally and globally. It is impossible to compare the Roman Empire coin collection with the coin collection of Kievan Rus . Since the collection of Picasso drawings with the collection of Trypillian culture artifacts are not allowed in the juxtaposed. There is a lack of officially recognized experts in Ukraine, and foreign experts are not able to fully assess the collections in the context of their value to the national cultural heritage. There is no such problem in highly developed countries, as state museums have the exclusive right to purchase the most valuable collections and individual objects. Moreover, this is done transparently and no shadow schemes are possible here. Collections of transboundary importance, for example for the Ukrainian and Polish peoples, deserve special attention in the legislative field, which should also be reflected in the relevant law.

This area of joint activity of the legislative and executive power in Ukraine should be accompanied by the harmonization of legislation in the field of museum work both in Poland and international norms and with the best European experience. Recognition and adherence to the ICOM Museum Ethics Code should be the basis for cross-border cooperation in the preservation of the common Polish-Ukrainian heritage, as well as in accordance with the system of professional ethical standards adopted by both states.

An important element in the formation of the system of cultural heritage preservation, including in the cross-border dimension, is the development of a mechanism for channeling funds received as financial sanctions for damage caused by violation of the legislation on protection of cultural heritage due to economic and other activities or inactivity to special funds of state and local budgets. with their purpose for events, for the preservation and restoration of cultural objects. Such financial support for cultural heritage conservation work requires appropriate accounting and analytical support to prevent abuse and create real incentives to maintain the cultural heritage in proper condition.

One of the competences of the joint activity of the Verkhovna Rada and the Cabinet of Ministers of Ukraine is the issue of promoting patronage and volunteering in the field of cultural heritage protection. The material and intangible heritage must be taken into account here. Recognition and confirmation of philanthropy should be based on objective facts and not on economic and other benefits. This requires accounting and analytical support that would make it impossible to overestimate or underestimate the real effects of philanthropic activities and provide information about the fair contribution of their originators.

As can be seen from Table 2, the second area of joint activity of the legislative and executive power is to ensure the harmonization of the legislation on the protection of cultural heritage with the legislation on urban development. The main purpose of these actions is to prevent the transfer of objects of cultural and historical heritage into an uncontrolled environment, and the statutory liability would provide for criminal liability of guilty officials without a limitation period and mitigating circumstances. It is a matter of practically irreversible destruction of cultural objects and such actions should be classified as socially dangerous. As a control parameter should be a single register of objects of historical and cultural heritage of Ukraine. The Register of Cultural and Historical Heritage Sites should include tangible and intangible objects that are also related to the activities of Ukrainian statesmen, biasedly ignored or forgotten in times of repression against the Ukrainian people, with constant updating. Keeping a single registry must be linked to scientific research on national cultural and historical heritage and biographies of prominent figures of Ukraine. In the cross-border cooperation with Poland, it is advisable to conduct an annual bilateral exchange of information on the changes made to the Single Registry in the form of a permanent conference.

The logical continuation of the previous task of creating a single register of cultural and historical values is the direction of legitimizing permanent financial support. That is, it is necessary

to allocate funds in the State Budget of Ukraine for the creation of an electronic information resource of cultural heritage and cultural values. In accounting and analytical perspective, the successful implementation of this project requires a single scientifically sound classification of cultural values, a standard methodology for their accounting and evaluation in the process of conducting an annual inventory.

The fourth direction of the joint activity of the Verkhovna Rada and the Cabinet of Ministers of Ukraine is to study the issues of preferential taxation in the field of cultural heritage protection, as well as preferential lending from the state and local budgets for carrying out restoration works on objects of cultural heritage. That is, it is necessary to create a system of incentives for conscientious owners and users of cultural and historical monuments, the mechanism of which would ensure the preservation of cultural heritage in Ukraine. In the accounting and analytical aspect, the standardized accounting and registration of cultural objects – on the one hand, and, the development of criteria for which the right to benefit from taxation – on the other. The creation of an electronic register of the results of annual activities for the maintenance of objects of cultural and historical heritage should be based on the reporting information received from economic entities in the relevant section. For example, there may be the following options: 1. Income and expenses from the use of cultural and historical heritage; 2. Funds spent on maintenance and improvement of the state of the objects of cultural and historical heritage; 3. Tax relief in relation to the cost of maintaining and improving the status of cultural and historical heritage. The appropriate version of the reporting form should be based on the selected criteria that give rise to the right to the benefit and its value. Both the experience of preferential taxation in highly developed countries and the real state of cultural heritage in Ukraine should be used. One option can be taken based on the methods of depreciation. It is not about depreciation of such assets (not subject to depreciation), but only the calculation of the value of the tax benefit using the depreciation rates. The variation in the method used depends on the state of the object: the accelerated depreciation method for destroyed more than 50 % of the objects, and straightforward when less than that fraction. An important component of the provision of information on the state of cultural and historical heritage is to anticipate the involvement of local authorities and the population of the territories to control and monitor the qualitative changes of cultural heritage objects. Such information should be an integral part of assessing the credibility of the entities' accounting records.

The revision of the Ukrainian legislation in the sphere of formation of the system of preservation of cultural heritage provides for specific practical tasks of the Cabinet of Ministers of Ukraine, which also cover the prospects of cross-border cooperation (Table 3).

*Table 3*

**The tasks of the Cabinet of Ministers of Ukraine for the preservation of cultural heritage and its cross-border perspectives are outlined**

| Tasks of intra-state character | Cross-border prospects |
|---|---|
| 1 | 2 |
| Creation of an effective system of protection of cultural heritage, identification and use of its economic, tourist, cultural and educational potential | Introduce a system of public-private partnership in the field of cultural heritage protection and promote investment in this field, develop cooperation with international organizations in the implementation of grant support and implementation of projects |
| Ensure the creation of a National Geospatial Data Infrastructure | Ensure the introduction of Ukrainian cultural heritage records abroad |
| To approve the Concept of reforming state policy in the field of cultural heritage protection | Strengthen state control over the export of cultural property, in particular by monitoring auctioning |

*Continuation of table 3*

| 1 | 2 |
|---|---|
| To approve the State Program for the Protection of Cultural Heritage for 2019–2025 | Enhance the participation of Ukraine in international cooperation on the return of cultural values |
| To approve the National Target Program for Preservation of Documents of the National Archival Fund | To intensify cooperation with UNESCO on the inclusion of cultural heritage of Ukraine in the World Heritage List |
| To provide completion and gradual commissioning of the complex of buildings of the central state archives of Ukraine in the city of Kiev | Include objects of intangible cultural heritage in UNESCO's lists of intangible cultural heritage |
| Ensure the preservation of the complete collection of the Central State Archives-Museum of Literature and Art of Ukraine | Ensure the implementation of the decisions of the UNESCO World Heritage Committee |
| Complementing the regional state administrations with a structural unit on cultural heritage protection | Establish cooperation with the UNESCO monitoring mission to monitor the conservation of the World Cultural Heritage in the Autonomous Republic of Crimea |
| To enter into the State Register of immovable monuments of Ukraine of national importance the objects of cultural heritage, taken into account before the adoption of the Law "On Protection of Cultural Heritage" | |
| Together with the National Academy of Arts of Ukraine to create a Research Institute of Museum Studies and Restoration | |

As can be seen from Table 3, part of the tasks of the internal state character is envisaged to carry out complex, consistent and coordinated activities to create an effective system of protection of cultural heritage, including intangible objects. Particular attention is paid to identifying and making effective use of economic, tourist, cultural and educational potentials and other cultural heritage potentials. It is necessary to establish a National Geospatial Data Infrastructure and to approve a number of documents, namely: The concept of reforming state policy in the field of cultural heritage, in which decentralization of management should be envisaged, leaving coordination and control functions to the central executive bodies, which provide the formulation and implementation of the state policy. in the field of cultural heritage protection; State Program for Protection of Cultural Heritage for 2019–2025 (immovable objects of cultural heritage, cultural values, elements of intangible cultural heritage) and State Target Program for preservation of documents of the National Archival Fund.

Internal tasks include completion of commissioning of the complex of the Central State Archives of Ukraine in Kyiv, maintenance of the complete collection of the Central State Archives-Museum of Literature and Art of Ukraine, as well as ensuring the introduction of changes to the recommended lists of structural subdivisions of oblast, Kyiv and Sevastopol, city, district in Kyiv and Sevastopol state administrations, approved by the Cabinet of Ministers of Ukraine of April 18, 2012 No. 606, supplementing ics structural unit for the protection of cultural heritage. Among this group of tasks it is envisaged to enter into the State Register of immovable monuments of Ukraine by category of national importance cultural heritage objects, taken into state account in accordance with the legislation that was in force before the Law of Ukraine "On Protection of Cultural Heritage" came into force, and to provide together with the National Academy of Arts of Ukraine to establish the Research Institute of Museum Studies and Restoration.

The tasks of cross-border cooperation include the introduction of a public-private partnership in the field of cultural heritage protection and the promotion of investment in the field of cultural heritage conservation, development of cooperation with international organizations in the implementation

of grant support and project implementation. Accounting for Ukrainian cultural heritage abroad should be ensured, as well as steps taken to strengthen state control over the export of cultural property, in particular by monitoring stationary and online auctions of antiques and cultural assets abroad. For these purposes, it is envisaged to allocate funds from the state budget. It is also envisaged to intensify Ukraine's participation in international cooperation on the return of cultural property and to intensify cooperation with UNESCO on the inclusion of cultural heritage sites of Ukraine in the UNESCO World Heritage List and intangible cultural heritage sites - in UNESCO's Lists of Intangible Cultural Heritage Of the UNESCO World Heritage Committee. One of the tasks is to establish close cooperation with the UNESCO monitoring mission, the task of which is, inter alia, to monitor the conservation of the World Cultural Heritage in Crimea. In accounting and analytical aspect, the issue of accounting for objects of intangible cultural heritage is at the forefront, which to date is only beginning to be elaborated in the methodological plan.

An important area of activity for the safety and protection of cultural heritage is the task for the Ministry of Culture of Ukraine (Table 4).

*Table 4*

**Tasks for the protection of cultural heritage for the Ministry of Culture of Ukraine and their accounting and analytical aspects**

| No. | Contents of tasks | Accounting and analytical aspects |
|---|---|---|
| 1 | Introduce international experience in the field of cultural heritage, including intangible ones | Accounting, evaluation and classification of cultural objects |
| 2 | Ensuring completion of the State Register of Immovable Monuments of Ukraine, the State Register of National Cultural Property, the National List of Elements of the Intangible Cultural Heritage of Ukraine | Accounting, evaluation and registration of cultural objects |
| 3 | Ensuring the development of legal mechanisms of the creation and functioning of an electronic information resource of cultural heritage and cultural values. | Accounting and analytical procedures software. |
| 4 | Together with Cherkasy regional state. the administration to create a historical and cultural reserve “Simirenko Family” in the village. Mliiv Gorodishche district Cherkasy region | Accounting and registration of the objects of the reserve |
| 5 | Ensure improvement of the system of annual reporting of cultural heritage bodies | Formation of reporting methodology |
| 6 | Monitoring the state of storage of immovable objects of cultural heritage, cultural values of Ukraine in the temporarily occupied territories | Control-analytical methods of control and monitoring |
| 7 | Elaboration of the Draft Law of Ukraine on Amendments to the Law “On Protection of Cultural Heritage” and other legislative acts in the field of protection of cultural heritage on implementation of effective accounting of objects of cultural heritage, creation of preconditions for the functioning of the State Register of Cultural Heritage of Ukraine | Methods of accounting and registration of cultural heritage objects |
| 8 | Developing and approving the procedure for defining and amending the boundaries and regimes for the use of cultural heritage sites | Analytical methods for monitoring the status of cultural heritage monuments |

As can be seen from Table 4, the Ministry of Culture of Ukraine is tasked with introducing international experience in the field of cultural heritage protection, ensuring state registration of all cultural heritage of Ukraine, as well as developing a legal mechanism for the functioning of the

electronic information resource of cultural heritage and cultural values. The task of creating a historical and cultural reserve "Family of Simirenko" in the village of Mliiv, Gorodishche district, Cherkasy region. Particular attention is paid to improving the system of annual reporting of cultural heritage bodies. Quite a difficult task of monitoring the state of storage of immovable objects of cultural heritage, cultural values of Ukraine in the temporarily occupied territories of Ukraine, as well as the collection of information on the movement of museum objects of the state part of the Museum Fund of Ukraine stored in museums in temporarily occupied territories of Ukraine. The legislative plan envisages the development of the draft amendments to the Law of Ukraine "On Protection of Cultural Heritage" and some legislative acts in the field of cultural heritage protection regarding the introduction of effective accounting of cultural heritage objects, creation of preconditions for the functioning of the State Register of Cultural Heritage of Ukraine as an electronic information system, simplification systems for providing administrative services and deregulating relations in the field of cultural heritage protection, establishing the procedure for granting permits, approvals and visas ovkiv bodies of cultural heritage. Changes are planned to the Procedure for determining the categories of monuments for the entry of cultural heritage objects in the State Register of Immovable Monuments of Ukraine, approved by the Decree of the Cabinet of Ministers of Ukraine of December 27, 2001 No. 1760 and the Procedure for concluding protective contracts for cultural heritage monuments Resolution No. 1768 of the Cabinet of Ministers of Ukraine of December 28, 2001.

The development also provides for the procedure for defining and approving the boundaries and regimes for the use and amendment of cultural heritage sites; changes to the Procedure for accounting of cultural heritage objects; the procedure for informing the UNESCO World Heritage Committee of the intention to carry out urban, architectural and landscape changes, reclamation, road, earthworks at the World Heritage Site, its territory, in the buffer zone; instruction on exercising control over the implementation of the Law of Ukraine "On the Protection of Cultural Heritage" and other normative legal acts in the field of cultural heritage protection; methodological recommendations for the inclusion of objects of intangible cultural heritage, both in the National list of elements of intangible cultural heritage of Ukraine and in the lists of intangible cultural heritage of UNESCO. As can be seen from the table. 4, accounting and analytical aspects pervade virtually most tasks, and this is especially true of intangible cultural heritage objects.

Together, the Ministry of Education and Science and the Ministry of Culture of Ukraine have been assigned the task of providing training in the field of cultural heritage protection and training of employees in the fields of cultural heritage, museum work, transfer and return of cultural property.

The intangible cultural heritage of Ukraine is a relatively new issue in the national scientific literature. UNESCO has issued a number of important acts in this respect, in particular, in 1989 the Recommendations for the Preservation of Traditional Culture and Folklore were adopted, the World Declaration on Cultural Diversity was adopted in 2001, and the Convention for the Protection of the Intangible Cultural Heritage was approved in 2003. Ukraine supported the UNESCO initiative and voted in favor of adopting the Convention on the Safeguarding of the Intangible Cultural Heritage; since 2004, the process of Ukraine's accession to the said Convention has begun, which included a procedure for discussing and adopting the relevant law in 2008. [7].

For the purposes of this Convention, the term "intangible cultural heritage" means those customs, forms of expression and expression, knowledge and skills, and related instruments, objects, artifacts and cultural spaces that are recognized by communities, groups and in some cases by individuals as part of their cultural heritage. This intangible cultural heritage, passed down from generation to generation, is constantly reproduced by communities and groups under the influence of their environment, their interaction with nature and their history, and they create a sense of identity and continuity, thereby promoting respect for the cultural diversity and creativity of man. For the purposes of this Convention, only

intangible cultural heritage compatible with existing international human rights treaties, with the requirements of mutual respect between communities, groups and individuals, as well as sustainable development, shall be taken into account. The term "intangible cultural heritage" in such areas:

– oral traditions and forms of expression, including in language as carriers of intangible cultural heritage;

– performing arts;

– customs, ceremonies, celebrations;

– knowledge and practice relating to nature and the universe;

– traditional crafts.

With the accession to the Convention for Ukraine the issues of scientific research, concerning the preservation and promotion of traditional folk culture, have become of particular importance. Accordingly, the preservation of the wealth of Ukrainian folk culture - the basis of the intangible cultural heritage – is one of the priority tasks of national importance, where the values of the culture of the border territories, and in particular of Poland, occupy a significant place.

As part of the implementation of the Convention, the regulatory framework is being constantly improved, namely:

1) in 2013 the Expert Council on Intangible Cultural Heritage under the Ministry of Culture of Ukraine was established as a permanent advisory and advisory body;

2) in 2015, the Ukrainian Center for Cultural Research was established, which is authorized to engage in scientific and methodological support for the implementation of the Convention on the Protection of the Intangible Cultural Heritage;

3) in 2017 the annual Prize for the preservation and protection of the intangible cultural heritage was launched, as well as the Procedure for maintaining the National list of elements of the intangible cultural heritage of Ukraine (Table 5) [8].

Table 5

**National list of objects of intangible cultural heritage of Ukraine**

| No. | Code | Cultural heritage object |
|---|---|---|
| 1 | 001.nks | Tradition of Kosiv hand-drawn pottery |
| 2 | 002.nks | Krolevets Overcome Weaving |
| 3 | 003.nks | Opishnan ceramics |
| 4 | 004.nks | Petrykivsky painting - Ukrainian decorative and ornamental painting of XIX–XXI centuries. |
| 5 | 005.nks | Cossack songs of Dnipropetrovsk region |
| 6 | 006.nks | Song tradition of Luka village in Kyiv-Svyatoshinsky district of Kyiv region |
| 7 | 007.nks | The technology of embroidery "white on white" settlement Reshetilovka Reshetilov district of Poltava region |
| 8 | 008.nks | Traditions of plant carpet of Reshetilovka village Reshetilov district of Poltava region |
| 9 | 009.nks | Ornek - Crimean Tatar ornament and knowledge about it |
| 10 | 010.nks | Tradition of ornamental painting of tambourine pottery |
| 11 | 011.nks | Foster care |
| 12 | 012.nks | Tradition of Hutsul Easter egg |
| 13 | 013.nks | The tradition of cooking et ayaklak (Karaite meat pie). Experience of Karaites of Melitopol |
| 14 | 014.nks | Tradition of the "Driving the Bush" rite in the village of Svarticevichi, Dubrovytsia district, Rivne region |

As can be seen from Table 5, as of December 7, 2018, 14 elements of intangible cultural heritage are included in the National List. Since 2018, the Ministry of Culture has been working with Google Ukraine on the preparation of the Intangible Cultural Heritage online resource,

which is part of the Authentic Ukraine project, which already includes 3D tours of the Museums of Ukraine in the Sky, Wooden the churches of the Carpathian region "," Opera houses". According to the decision of the 8th session of the Intergovernmental Committee in 2013, the element "Petrykivsky painting – Ukrainian decorative and ornamental painting" is included in the Representative list of the intangible cultural heritage of mankind. At the 11th session of the Intergovernmental Committee in 2016, the element – Cossack songs of Dnipropetrovsk, or "Cossack songs" – the phenomenon of performance of steppe songs (Ukrainian Cossack songs) in the Dnipropetrovsk region is included in the List of intangible cultural heritage that needs UNESCO. This element needs further protection as it faces a number of threats that could lead to its disappearance in the near future. These threats can be divided into two categories. The first is external threats. Thus, the members of the element mark the weak attention of state bodies, mass media, educational centers to the element "Cossack songs", which creates a similar attitude to this element to members of local communities as unimportant, not worthy of attention and conservation. The second is internal threats. The Cossack song element is threatened by a sharp reduction in the media of this element, which is related to the age category of the people who own (practice) this element. For the most part, these are people who are 80 years of age or older.

In 2018, the Ministry of Culture submitted the nomination dossier "Tradition of Kosovan hand-drawn ceramics" for consideration by the next session of the Intergovernmental Committee for inclusion in the Representative list of the intangible cultural heritage of humanity. This item was included in the National List for 2012. This element is an integral part of the intangible cultural heritage of Ukraine and is represented by Hutsuls, an ethnographic group of Ukrainians, who has long lived in the Carpathians of Ukraine and has best preserved its ethnographic and everyday traditions, along with other sub-ethnic groups of Ukrainians. This tradition developed from the end of the eighteenth century. in three sub-mountain centers: p. Pistyn, Kosiv (with the villages of Monastyrskoye, Moskalivka, Stary Kosiv, Smodnoe, Verbovets), Kuty and Staro Kuty. The Ministry of Culture of Ukraine continuously conducts seminars and conferences aimed at addressing a number of tasks related to the implementation of the above mentioned Convention, and in particular concerning the identification, identification, documentation, preservation, reproduction and promotion of intangible cultural heritage by particular regions.

At the same time, the codification of intangible cultural objects is far from perfect. For example: 006.nks object Song tradition of Luka village of Kiev-Svyatoshinsky district of Kyiv region – so it seems that only one village of Ukraine has song and song traditions. Why not single out the individual regions with their song traditions in the code of the next extended order. After all, there are accounting bases and a plan of accounts that provides bills, subaccounts, and for specific entities analytical accounts. Also object 007.nks The technology of embroidery "white on white" settlement Reshetilovka Reshetilov district of Poltava region. And black and red on white is not a tradition? There are different regions and all of their traditions, which are often unique. The necessity to improve the generally accepted classification criteria is conditioned by the inadequate presentation of intangible assets of the cultural and historical heritage in the regional context, ignoring and unacceptable muting of unregistered objects of NAKIS Ukraine. Obviously, this concerns the unscientific mixing of different disparate and incomparable classification criteria (rite and preparation of pies). Monoculture does not mean mixing, it means the existence of parallel cultures, their recognition in the context of traditions. Therefore, it is necessary to classify according to the established standards of international accounting standards, and not invent the wheel, suppressing unreasonably registered objects of accounting. Such features of the classification may be activities: dance, song, cooking, etc., and these types will imply multiculturalism [9]. This approach will make it possible to isolate intangible objects on the border with Poland.

Accounting and analytical problems of cultural heritage safety have a faster prospect of solution with proper professional training of specialists of the respective specialties. Important, in our opinion, is the organization of field studies of future specialists involved in the preservation and protection of cultural heritage. For example, an expert survey conducted in the first half of 2019 among students of the Faculty of Economics of Lviv National University. Ivan Franko stationary and correspondence forms of study, allowed to establish a relation for the purpose to determine the level of awareness and perception of antiques by future accountants. In order to obtain information, surveys were conducted in the form of questionnaires, in particular such questions as perceptions of cultural values, antiques and collectibles.

For example, regarding the timing of antiques, most of the 122 students surveyed consider it appropriate to refer objects that are more than 100 years old (55.74 %), more than 50 years old – 40.98 %, and more than 25 years old – 7.38 %.

When asked, does Ukraine need a special regulatory framework for trade in collectibles and antiques? 106 people answered in the affirmative (86.88 %); difficult to say answered 11 people (9.02 %) and 5 people (4.1 %) believe that separate legislation is not required.

The question whether in Ukraine it is advisable to classify collectibles and antiques in the same way as in EU countries, whether it is necessary to develop their classification criteria for accounting, analysis and control purposes, taking into account the specific features of cultural and historical heritage, 69 people answered affirmatively (56.56 %). it is expedient to use the classification 43 persons (35.24 %) agreed and do not know – 10 persons (8.2 %).

**Conclusions**

Accounting and analytical problems of cultural heritage security in Polish-Ukrainian cross-border cooperation take place and are conditioned by the process of improvement of legal regulation in Ukraine. They concern, first and foremost, the correct perception of cultural objects, the fair assessment and the proper classification of the individual components. A number of measures need to be taken to address these issues, namely:

First, theoretical and methodological research requires standardization of the classification parameters of cultural heritage objects on the Polish-Ukrainian border, taking into account national priorities of their perception and local mental-traditional norms. This will be facilitated by the creation of registers of cultural heritage objects by qualification groups, namely: prominent figures of Polish and Ukrainian identity born in the border area; objects of tangible cultural and historical heritage; objects of intangible cultural and historical heritage.

Secondly, it is necessary to develop a methodology for the objective evaluation of cultural heritage objects that would effectively reflect their real value, taking into account the prospects of world cultural and historical progress, as well as in the border areas of Poland and Ukraine. The development of such a method has the potential to create in the near future a separate standard for the account of objects of cultural and historical heritage and antiques.

Thirdly, in view of the Resolution adopted by the Verkhovna Rada of Ukraine “State, Problems and Prospects for the Protection of Cultural Heritage in Ukraine” of 14.05.2019, there is a need for more specific measures for the formation of a security system for the protection of cultural heritage in the border area. The solution to these problems involves taking into account the higher level achieved in Poland in the legal field, Polish practical experience, as well as initiatives concerning the preservation and protection of the common cultural and historical heritage in the border area.

Fourthly, on the basis of an expert survey among students - future specialists in the field of accounting and taxation, their accounting and analytical perception of cultural heritage objects and problems, as to their condition and preservation, were found out. Conducted questionnaire will help to draw attention to the issues of trade in antiques, as objects of accounting that are

directly related to the cultural and historical heritage and its security. This will help to focus students' attention on cultural heritage in further professional training.

As the Cabinet of Ministers of Ukraine must keep the Verkhovna Rada of Ukraine constantly informed about the state of implementation of the recommendations approved by the aforementioned Resolution, it is therefore possible and necessary to use the proposed initiatives and the above results of scientific research.

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# THE ESSENCE AND BASIC MODELS OF STRATEGIC ENTERPRISE MANAGEMENT

**Abstract:** The scientific approaches of Ukrainian and foreign scientists to the interpretation of the concept of strategic enterprise management and compares their characteristics are systematized in this article; different stages of evolution of strategic management systems in the context of functioning of scientific schools are analyzed, their basic principles are presented and their key representatives are singled out; the comparative analysis of approaches of different scientific schools is carried out, advantages and disadvantages of their views on strategic management and strategy formation are determined. For further structuring of knowledge in the field of strategic management, the essence of the concept of strategy was determined according to the interpretation of different scientists and the organization strategies were classified by key characteristics and levels of implementation; their key characteristics have been identified. Particular attention is paid to basic models of strategic enterprise management, taking into account their features, advantages and disadvantages; the structure and algorithms of strategic management based on the analyzed models are graphically demonstrated. According to the results of the research, conclusions were drawn regarding the theoretical bases of understanding the essence of strategic management of enterprises and differences in their interpretation in the works of different authors, characteristics of basic models of strategic management are generalized, the importance of strategic management to ensure the effective operation of the organization is emphasized; the features of strategic management in the conditions of the modern changing environment are characterized and the expediency of basic models of strategic management for modern enterprises is determined, the proposals for the further development and deepening of the investigated topic are developed.

**Key words:** strategic management, models of strategic enterprise management, mission, goals, envinronment analisys.

## Introduction

Creating an effective enterprise strategic management system can provide competitive advantage over the long term and establish a firm strategic position for the organization that can ensure its future viability in a changing environment.

At the present stage of development, strategic management should become the basis and at the same time an instrument of effective long-term development of an enterprise of any industry, in order to solve long-term economic problems and achieve socio-economic efficiency.

In order to systematize and compare the main approaches to strategic management, it is advisable to consider the essence, basic theories and models of strategic enterprise management.

**Problem formulation**

Systematization and comparative characterization of existing scientific approaches to the interpretation of the essence of strategic enterprise management, defining its key models and the analysis of varieties of strategies at different stages of the evolution of management systems as well as identification of their substantive characteristics.

**Analysis of the latest publications**

Based on the analysis of literary sources, it was found that strategic management is considered by authors in three aspects: as a type of activity, as a process and as a system. Detailed descriptions of different interpretations of the concept of "strategic enterprise management", from the point of view of Ukrainian and foreign authors, are given in Table 1.

*Table 1*

**Approaches of Ukrainian and foreign authors to the interpretation of the concept of "strategic enterprise management"**

| Author | Aspect | Meaning |
|---|---|---|
| I. Ansoff [1, 2] | As a type of activity | Activities related to defining the goals and objectives of the organization and ensuring the relationship between the organization and the external environment, which corresponds to its internal capabilities and allows it to remain receptive to external requirements |
| L. Romaniuk [3] | | A set of strategic management decisions that determine the long-term development of the organization, but also specific actions that ensure the rapid response of the organization to changes in the environment, which may cause the need for strategic maneuver, review goals and choose a new direction of development |
| M. Martynenko [4] | | A set of strategic management decisions aimed at the long-term development of the company, as well as specific actions that ensure the rapid response of the company to changing conditions in the external environment |
| O. Vikhanskyi [5] | As a process | Dynamic process of analysis, selection of strategies, planning, provision and implementation of the plans developed by the organization, which consists in a repeated cycle of implementation of its main tasks |
| M. Kadyrov [6] | | The process of making and implementing strategic decisions, the central part of which is strategic planning, is based on a comparison of the resource potential of an organization with the capabilities and threats of the external environment in which it operates |
| A. Thompson, A. J. Strickland [7] | | The process by which managers set long-term directions for the development of an organization, its specific goals, determine strategies for their achievement, taking into account all possible internal and external circumstances, and implement the selected action plans |
| Z. Shershnova [8] | | A multi-faceted, formal-behavioral management process that helps formulate and execute effective strategies that help to balance the relationship between the organization and the environment, as well as achieve the goals set |
| K. Hatten [9] | | The process of forming the goals of the organization and the management process to achieve them |
| J. Higgins [10] | | Management process to accomplish an organization's mission by managing the interaction of the organization with its environment |
| D. Shendel, K. Patton [11] | | The process of identifying and linking an organization with its environment, which is formed in the process of achieving the chosen goals, ways to achieve the desired state of relations with the environment through such a distribution of resources that allows the organization and its departments to operate effectively and efficiently |
| J. Smith, D. Arnold, B. Bizzell [12] | | The process of environmental assessment, formulation of organizational goals, decision-making, their implementation and control, rigged to achieve the goals and future external environment of the organization |
| G. Kleiner [13] | As a system | An enterprise management system based on strategic planning and mechanisms for aligning current decisions with strategic ones |
| S. Popov [14] | | Highly professional management activity with its own structural specialization |

Summarizing, it can be argued that the common feature of all the above definitions is the connection of strategic management with the analysis of various aspects of the organization's activities, the relationship with the external environment, the formation of goals of the enterprise, and management decisions to implement them.

## The essence of strategies and their classification

The result of strategic enterprise management is strategy. It is the main link between the internal and external environment of the organization. American scientist I. Ansoff noted that "... companies, in the absence of a planned and managed strategy, are doomed to extinction ... Strategic behavior is at least governed by companies that survive".

In order to systematize knowledge about strategic enterprise management, it is advisable to analyze different scientific approaches to explaining the term "strategy" and its main varieties.

Scientists such as I Ansoff [1, 2], A. Thompson, A. J. Strickland [7], M. Porter [15], and O. Vikhanskyi [5] have developed their own approaches to defining the concept of "strategy". Important contributions to the development of the theory of strategic management have also been made by Ukrainian authors such as G. Kindratska [16], Z. Shershneva [8], and others.

In scientific theory there is no universal interpretation of the content of the strategy and its structure, which emphasizes the complexity, versatility and ambiguity of understanding of this concept. The overall definition of the category "enterprise strategy" of different authors has common characteristics, but there are differences in the interpretation of its individual components.

The strategy is interpreted as a specific plan of activity of the company, related to the position of the company in the market, both today and in the future. The term "strategy" has been used in management science and practice since the 1950s. Business strategy is considered one of the main concepts in strategic management. Various scientists have proposed many definitions of the term "strategy" (Table 2).

*Table 2*

**The authors' approaches to interpreting the term "strategy"**

| Author | Definition. |
|---|---|
| I Ansoff [1,2] | A strategy is a list of decision-making rules that an organization guides in its operations |
| A. Thompson, A. J. Strickland [7] | A strategy is a plan of management of the company, aimed at strengthening its position, customer satisfaction and achievement of the set tasks |
| Ye. Velesko, O. Bykov, Z. Drazhek [17] | A strategy is the art of leadership, the overall plan of doing things |
| S. Oster [18] | A strategy is a commitment to act in one way, not another |
| B. Henderson [19] | A strategy is a careful study of an action plan that develops and multiplies competitive advantage in business |

It can be summarized that the strategy is a long-term, well-defined direction of development of the enterprise, aimed at consolidating its positions, customer satisfaction and achievement of the set goals. It is designed to determine which direction the business will develop and make decisions when choosing how to proceed.

In management theory, an important concept is the concept of the basic strategy of the enterprise. The core enterprise strategy is a complex multi-level entity in which the lower-level strategy supports and complements the higher-level strategy, and the implementation of each ensures the achievement of common goals.

There are four basic strategies of the enterprise:

1. Corporate (portfolio) strategy, which establishes the investment priorities of the organization and plans to allocate resources to the most promising areas of activity; this strategy is aimed at strengthening the competitive position in each type of business, as well as managing the economic portfolio of structural units (strengthening business positions).

2. Business strategy, which involves the development of approaches to the formation of competitive advantages of the enterprise; aims at combining strategic actions of the main functional units.

3. Functional strategy, which includes a specific list of actions to support the business strategy, helps to achieve the goals of the unit.

4. An operational strategy that addresses issues related to the achievement of the goals of individual units and identifies ways of solving strategically important operational tasks (such as purchasing, inventory management, repair, transportation, advertising, etc.).

The enterprise strategy is described by four elements:

- strategic goals (indicate the direction of activity of the enterprise, establish a method of motivating employees and ways to control the implementation of plans);
- scope of activity (indicates which goods or services and in what markets the enterprise intends to introduce);
- a way to gain competitive advantage (eg high quality, low price, flexibility of delivery, brand, specific characteristics of a product or service, etc.);
- functional strategies (support the implementation of the overall strategy within individual functions and units).

Within a market environment, businesses divide their strategies into three levels:

1) the overall strategy of the enterprise, which involves the selection of a set of goods or services to be presented in selected markets;

2) a competitive strategy for a particular product or market and identifying the appropriate way to compete in that market;

3) a functional strategy (there are usually several such strategies, such as production, marketing, logistics, etc.).

The most popular model of competitive enterprise strategy is M. Porter's concept [15]. He identified four alternative competitive strategies:

- cost leadership that most often requires significant market share, aggressive pricing and investment, cost control, experience, and minimization of research and innovation costs, etc.;
- a differentiation strategy based on the differentiation of the goods or services of the enterprise, as well as on the creation of something different; there are several ways of differentiation: sales methods, basic product characteristics, brand, form, etc.;
- market niche and low pricing strategy and concentrated differentiation strategies are focused on serving the chosen market niche and are able to take advantage of competitors operating within the entire market or within the segment.

The further research considers the varieties of functional strategies in more detail.

Marketing strategy is a strategy of industrial enterprises focused on market values, that is, the development of strategic solutions that allow you to effectively fulfill the objectives of the medium and short-term period of the enterprise. Any marketing strategy depends on the correlation of factors of external and internal environment. The concept of “marketing strategy” means a detailed comprehensive plan of marketing goals of the company.

Effectively developed marketing strategy allows the company to increase the competitiveness of goods and services; expand the client base; increase sales; improve the quality of customer service; develop effective pricing and product policies.

The strategy for the development of research and design works (R&D) is based on scientific and technical forecasts and is formed taking into account possible inventions and technological breakthroughs in one or another field during the period during which the strategy is being developed. The R&D strategy is a blueprint for conducting major research on new products, technology, production organization and management, as well as more efficient use of existing products, processes, their development and management.

Production strategy is a functional strategy of creation and development of highly competitive production potential of the enterprise.

The most common manufacturing strategies are:

- strategy for creating new production: acquisition, creation of new production, new use of existing production potential, etc .;

- strategy of changes in technological process: introduction of new methods of production of products and technologies, use of new materials;
- production organization strategy: production diversification, production rhythm, quality management system, etc.

A financial strategy is the definition of goals for the use of financial resources, methods of financing, and financial planning.

The most commonly used financial strategies are the lending strategy (regulation and control of short-term loans) and the dividend utilization strategy (organization of the dividend payment process).

Personnel management strategy is a strategy aimed at development and improvement of human resources of the enterprise, accumulation of human capital. Most commonly, the following personnel management strategies are used:

- remuneration and motivation strategy, balancing remuneration and profit with overall and support strategies;
- recruitment and training: organization of the training process, organization of analytical centers for selection and development of personnel;
- personnel management strategy: the process of selecting, hiring, training, retraining, employing and stimulating employees to meet the needs of future organizational changes in the enterprise.

Foreign and domestic experience in organizational development shows that the use of strategies makes it much easier to work for long- and short-term efficiency and profitability; provides an opportunity to make the organization more manageable, since having a system of strategic plans there is an opportunity to compare the achieved results with the goals set, specified in the form of planned goals.

## The evolution of scientific approaches to strategic enterprise management

In the science of strategic management, there are different directions, which are based on common basic principles, but differently set research priorities, highlighting certain approaches and methodologies. These directions are called scientific schools of strategic management. In the course of acquaintance with the literature, it was found that the most complete analysis of the schools of strategic management is presented in the work of G. Mintzberg, B. Olstrend and J. Lampel [20]. The authors identify 11 major science schools that have a fundamental vision of strategic management. Conditionally they can be divided into three groups:

1. Prescriptive schools.

The first is the design school. The formulation of a strategy, from the point of view of this school, is considered both to design and conscious modeling.

The principal representatives of this school are A. Chandler and K. Andrews [21, 22]. They declared the following requirements for strategy formulation:

- creating strategies should be a rational process of conscious thinking;
- the manager is solely responsible for overseeing the individual's strategic process;
- the model of strategy development should be clearly defined;
- the strategy must be unique and be the result of individual modeling.

The next is a planning school that considers strategy formation as a formal process.

Its founder is the famous management scientist I. Ansoff. This school pays particular attention to the quantitative presentation of the main goals of the enterprise and the development of a sequence of steps and procedures.

The leading role is given to professional “strategic planners”, the most important tools are “scenario planning”, software like “Project Management” and others.

The third school is a positioning school that treats strategy formation as an analytical process.

The foundations of this school were laid by the military strategists – Sun Tzu [23], K. Clausewitz and others. It also includes the well-known achievements of the consulting companies Boston Consulting Group and McKinsey. The founders of this school include M. Porter [15].

The basic principles of this school are as follows:

- the strategy reflects the company's position in the market;

- the process of strategy formation is based on analytical calculations, which result in the selection of one particular position, for example, the position of a leader in a particular segment of the market;

- an important role in the strategic management process is played by third-party analysts and consultants who provide their findings to senior executives.

2. Behavioral schools.

The first behavioral school is the school of strategy formulation.

Representatives of this school include thinkers-economists, who emphasized the role of the entrepreneur's personality and their inherent qualities of intuition, prudence, experience, wisdom, discernment. Among them are K. Marx and J. Schumpeter [24]. According to Schumpeter, an entrepreneur has a greater tendency to take risks in a changing environment because he has a commercial idea.

The strategy strategy school is based on the following principles:

- the strategy is developed intuitively by the entrepreneur leader as a "vision" of the future;

- the process and result of strategy formation is not formalized, as it is based on the experience and beliefs of the manager;

- strategy has the ability to be flexible and responsive to changes in the environment to the extent that these qualities are inherent in the leader.

The next scientific school of strategic management is a cognitive school that understands strategy formation as a mental process. Its founder is L. Simon [25].

Proponents of the cognitive school actively rely on the development of psychologists, and using the typology of individuals determine the individual cognitive style of the manager.

The cognitive process is based on the "mapping" of an existing situation. In this process, maps of both external conditions and maps of causes of behavior, mental models existing in the mind of an experienced leader are created.

The next is a learning school that considers strategy formation as an evolving process.

Previous schools of strategy have one way or the other suggested that one must first work out a strategy, "prepare" it, and then act accordingly. The school of education for the first time refused to accept strategy as something resolved, for a certain period unchanged and took up the problems not of formulation, but of strategy formation, offering the evolutionary path of strategic management.

The principal representative of this school is J. Quinn [26], who suggested that the strategy should be formulated and implemented step by step, with constant consideration of the results of the previous steps. And the results mean not only changes in the external conditions and position of the organization as a whole, but also changes in its individual subsystems. The requirements also include continuous management flexibility, supported by sufficient resources to respond appropriately to change.

Also, the learning school system uses monitoring and benchmarking in strategic management.

The authority school was the first to propose to clarify the formulation of a strategy with the negotiation process.

This school takes into account factors that go beyond the pure economy, it is about its own relationships that relate to a particular organization. In the context of this school, strategy is seen as politics and strategy building as a political process.

Noteworthy are the following theses of the authority school, formulated by L. Bolman and W. Dill [27]:

- organizations are coalitions of different individuals united on a common interest basis;

- the most important decisions concern the allocation of scarce resources, which creates the basis for conflict, which is the central moment of organizational dynamics;

- the goals and decisions of the strategy are the result of position manipulation and stakeholder negotiation.

There are two concepts in the authority school: "micro-authority" (relationships between individuals and groups within an organization) and "macro-authority" (relationships between an organization and the external environment).

M. Porter [15] has done a great deal for the methodology of macro- authority analysis on

organization. But it must be borne in mind that organizational and inter-organizational effects are increasingly determined not by impersonal market forces (equilibrium vectors) but by regulation and political negotiation.

Within behavioral schools, it is advisable to consider a school of culture that explains strategy formation as a collective process.

In the field of management, the "discovery" of the role of organizational culture belongs to Japanese organizations, as well as to analysts T. Peters and R. Waterman [28].

The basic principles of this school are:

- strategy formulation is a process of social interaction based on beliefs and understanding shared by members of the organization;
- strategy takes the form of perspective and only secondarily positions that are rooted in collective aspirations and is a model that reflects the resources and capabilities of the organization and creates the basis of its competitive advantages;
- culture, and ideology in particular, contribute, rather than strategic change, to the preservation of the current strategy.

The school of environment treats strategy formation as a reactive process.

The school of environment is distinguished by the fact that it puts both the management and the organization itself in dependence on the set of forces of the external environment, which determines the strategy. The most striking representatives of this school are M. Hannan and J. Freeman [29].

The school grew out of a "theory of situational factors" that declared direct dependence: the more stable the external environment, the more careful the planning and formalized structure of organizations. Management is seen as a passive element of the strategic process, its task is to identify external forces and ensure the adaptation of organizations. If the environment poses many different tasks to the organization and offers different opportunities, then the strategies of the organizations become more diverse and multifaceted.

3. Configuration and cooperative strategies schools.

The configuration school views strategy formation as a transformation process. There are two basic concepts in this school: "configuration" (a stable organization structure) and "transformation" (the process of developing and transforming a strategy).

The main provisions of this school include the tenets of different schools, bringing them together, and in a very specific context. The effect of a strategy is determined not by the use of one or another of its attributes, but by their interaction (for example, the combination of a given type of power, a specific environment, a certain type of planning with a specific structure and with a certain leadership style).

The school's theorist was D. Miller [30], who suggested the main theses of the school configuration:

- over a period of time, the organization has a structure that is appropriate to a particular context that determines the behavior and set of strategies of the organization;
- stability periods in a certain sequence are interrupted by transformations – jumps into another configuration, which is the life cycle of the organization;
- the aim of strategic management is to maintain the stability of the organization for a long period and maintain its viability in the event of transformation;
- the process of building a strategy is to choose one or another configuration of elements of strategic management different schools.

The latter is a school of cooperative strategies, which operates with the concepts of "business networks", "collective strategies", "strategic alliances", "joint ventures", etc.

The term "collective strategy" was proposed by G. Astley and C. Fombrun [31] to describe the process of strategy formation. This school also uses the achievements of other schools. This school explores various forms of collaboration: joint ventures, franchising, licensing, and more.

Summarizing the main features of the above-mentioned scientific schools of strategic enterprise management, it is advisable to summarize their key characteristics, to analyze the advantages and disadvantages (Table 3).

*Table 3*

**The comparison of the main scientific schools of strategic enterprise management**

| School | Representatives | Advanteges | Disadvantages |
|---|---|---|---|
| 1. Prescriptive schools | | | |
| The design school | A. Chandler, K. Andrews [21, 22] | The simplicity and informality of the process of creating a strategy | A certain abstractness of thinking from action, a low level of flexibility. |
| The planning school | I. Ansoff [1, 2] | A clear sequence of procedures for developing a strategy. | Fascination with internal procedures at the expense of the actual choice of strategy, strategic creativity. |
| The positioning school | Sun Tzu [23], K. Clausewitz, M. Porter [15] | Deepening market analysis, competitive advantages of the organization. | The actions of an organization can be "read" by competitors; the role of the internal potential of the enterprise is underestimated. |
| 2. Behavioral schools | | | |
| The school of strategy formulation | K. Marx, J. Schumpeter [24] | Best suited for small businesses and niche markets. | Significant dependence of strategic management on the intuition and charisma of the leader. |
| The cognitive school | L. Simon, G. Davies [25] | Analyze cause and effect relationships when mapping a situation. | Difficulties in changing strategy; complexity of the psychology of knowledge in the mind of the manager-strategist. |
| The learning school | J. Quinn [26] | Continuous process of improving the strategy. | Learning can become an end in itself, which causes the eternal "incompleteness" of the process of strategy formation. |
| The authority school | L. Bolman, W. Dill [27], M. Porter [15] | Growth through conflict of interest. | The risk of decline from the effects of conflict and instability. |
| The school of culture | T. Peters, R. Waterman [28] | Involvement of all employees in the awareness of the organization's strategy | The culture of the organization is usually perceived by the employee as simplistic and partly erroneous. |
| The school of environment | M. Hannan, J. Freeman [29] | Reorientation from internal factors to the external environment. | Alternative to "choice" since there is only one strategy in each specific environment. |
| 3. Configuration and cooperative strategies schools | | | |
| The configuration school | P. Handawall, D. Miller [30] | The synthesis of previous schools. knowledge | By focusing on the "jumps", other important moments of "inter-transformation" may be missed. |
| The school of cooperative strategies | G. Astley, C. Fombrun [31] | Focusing the strategy on achieving benefits not only for the organization but also for its partners. | The focus may be dispersed on various forms of collaboration and the company may lose its identity. |

The scientific schools of strategic enterprise management have considered the process of strategy formation in various aspects and initiated the development of modern strategic management.

## Basic models of strategic enterprise management

The main goal of implementing strategic management is the need to ensure the continuous and sustainable development of the company in the dynamic environment. The company's transition to strategic management will provide it with the opportunity to anticipate future development and make timely management decisions, goals and strategies.

The strategic management of the enterprise is carried out in a certain sequence. The first stage defines the mission of the enterprise - the main

reason for its existence. Then a vision is developed - a future picture of the operation of the enterprise in the long run. In the following stages, the main goals that the company strives to achieve and the values that the main principles that it will stick to in the process of functioning are determined. After that, the analysis of the external environment and the analysis of the potential (internal environment) of the enterprise is conducted. Based on the results of the analysis, a general (corporate) strategy is formed, which is then detailed into lower levels of enterprise management in the form of functional and resource strategies. When the enterprise strategy is developed, the stage of its implementation comes. According to the results and in the process of implementation of the strategy constant monitoring and evaluation of the obtained results is carried out. If deviations from the general (corporate) strategy occurred in the course of strategy implementation, then the strategy is adjusted by making strategic changes.

Based on the essence of strategic management, the main stages and the sequence of formation of strategic behavior can be distinguished. Subsequently, the substantive side of each of the selected stages is considered.

When it comes to choosing a strategic management model, there are some difficulties. In the development of strategy theory, different researchers have proposed different approaches.

Each strategic management model is based on a basic structure that includes an analysis of the environment, defining the mission and goals, selecting and implementing the strategy, as well as evaluating and monitoring implementation (Fig. 1).

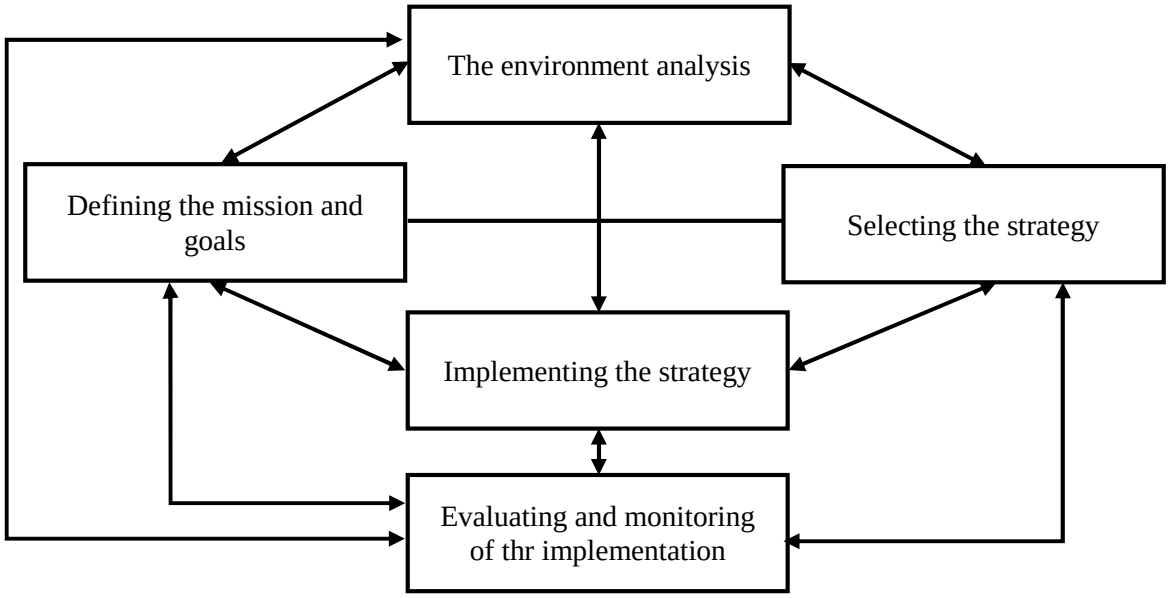


*Fig. 1. The structure of strategic enterprise management*

In order to deepen the analysis of basic models of strategic management, it is advisable to consider models developed by Ukrainian and foreign scientists.

I. Ansoff as the basis of the strategic management model is based on decisions that are appropriate to make when formulating a strategy: assessment of the potential of the organization; assessment of external opportunities and threats; formulation of goals and choice of tasks; decision on diversification and choice of diversification strategy; choice of competitive strategy; formation of components of diversification strategy and competitive strategy in the form of separate projects.

Domestic author Z. Shershneva [8] made a significant contribution to the construction of a sound sequence of actions in the formation of a strategic management system. The conceptual scheme of strategic enterprise management they offer differs from the previously proposed models by the extended, correct and clear description of the following stages:

1) concept;

2) diagnostics (strengths and weaknesses of the enterprise);

3) the formation of the goals of the enterprise;

4) choice of strategy;

5) development of the system of plans, projects and programs of enterprise development;

6) strategic control.

A. Thompson and A. Strickland [7] believe that the strategic management model should begin with a strategic analysis of the value of the enterprise. This process includes internal audit, business analysis, external audit and, as a result, goal setting. In order to achieve the set goals, a strategic choice of alternative paths is made. In assessing and selecting alternatives, factors such as organizational structure, functions, people and systems are taken into account. The final stage of the model is monitoring and evaluation. The authors extended the well-known model of M. Porter's five forces and proposed a model of seven forces that influence strategic management (Fig. 2).

F. David [32] believes that strategic enterprise management begins with the establishment and development of the mission, followed by internal and external audits to formulate a strategy, establish long-term goals, define policies and allocate resources. An important role in this model is given to the feedback, measurement of the effectiveness of the strategy and its evaluation (Fig. 3).

O. Vikhansky proposes to consider the strategic management model as a dynamic set of five interdependent management processes: environmental analysis; defining the mission and goals; choice of strategy; strategy implementation; performance evaluation and control [5].

S. Popov proposed a relatively simple model, which to some extent synthesizes the previously proposed models. The main components of strategic management, according to the scientist, are: analysis of the external environment of the organization; internal diagnostics (evaluation of strengths and weaknesses) of the organization; defining the mission and goals of the organization; development, evaluation and selection of alternative strategies for specific subsystems of the organization; development and detailed definition of corporate strategy as a program of concrete actions; implementation of the strategy; results evaluation and feedback [14].

R. Lynch believes that the strategic management model should include two approaches - prescriptive (universal) and emergent (situational). The prescriptive approach is based on the stages of strategic analysis, development and implementation of the strategy. At these stages, there is an analysis of the environment, the development of vision, goals and mission of the organization, the analysis of resources, the development of benefits. At the stage of strategy implementation, rational choice of priorities is made, finding the right way to achieve the set goals and approval of the appropriate structure and mechanism of management. An emergent situational approach involves analyzing a turbulent external environment, identifying the vision, mission and goals of the organization, analyzing resources and developing and implementing a strategy. It is worth noting that the prescriptive approach is characterized by long-term monitoring, and the emergent – by constant one [33]. According to the author, the combination of the two approaches is the most effective for successful strategic management of the enterprise (Fig. 4).

Famous American scientist I. Ansoff has developed 4 models of strategic management [1, 2]:

1. Strategic management through the choice of strategic positions – involves the analysis of prospects of the enterprise; identifying priorities and allocating resources among various promising activities of the enterprise; analysis of possible diversification of the enterprise; forecast of dynamics of instability factors; planning new strategies that meet expected levels of environmental instability; anticipation of organizational changes and capabilities of the enterprise.

2. Management based on the ranking of strategic tasks – occurs in the enterprise management system by categorizing tasks according to the degree of urgency and importance; the highest priority tasks are transferred to the relevant units of the enterprise for preparation and decision making; to control the decision-making process to ensure that the strategic implications of the decisions are consistent with the management system; continuous renewal and review of current strategic objectives.

3. Strategic emergency management is used when new problems are not only poorly anticipated and develop very quickly, but also occur almost suddenly without the expected prognosis.

Weak signal control (anticipative) model is based on the assumption that any adverse event or prospect of opportunity growth does not occur suddenly, but is conditioned by the appearance of predictor signals or "weak signals".

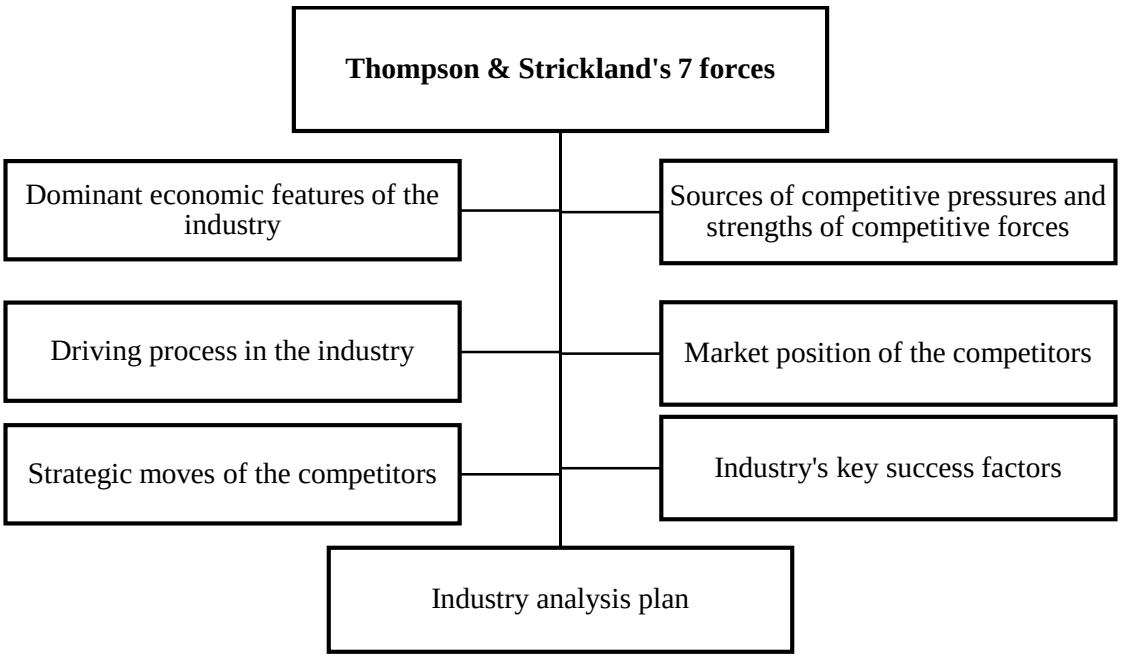


*Fig. 2. Model of the seven forces of A. Thompson and A. Strickland [7]*

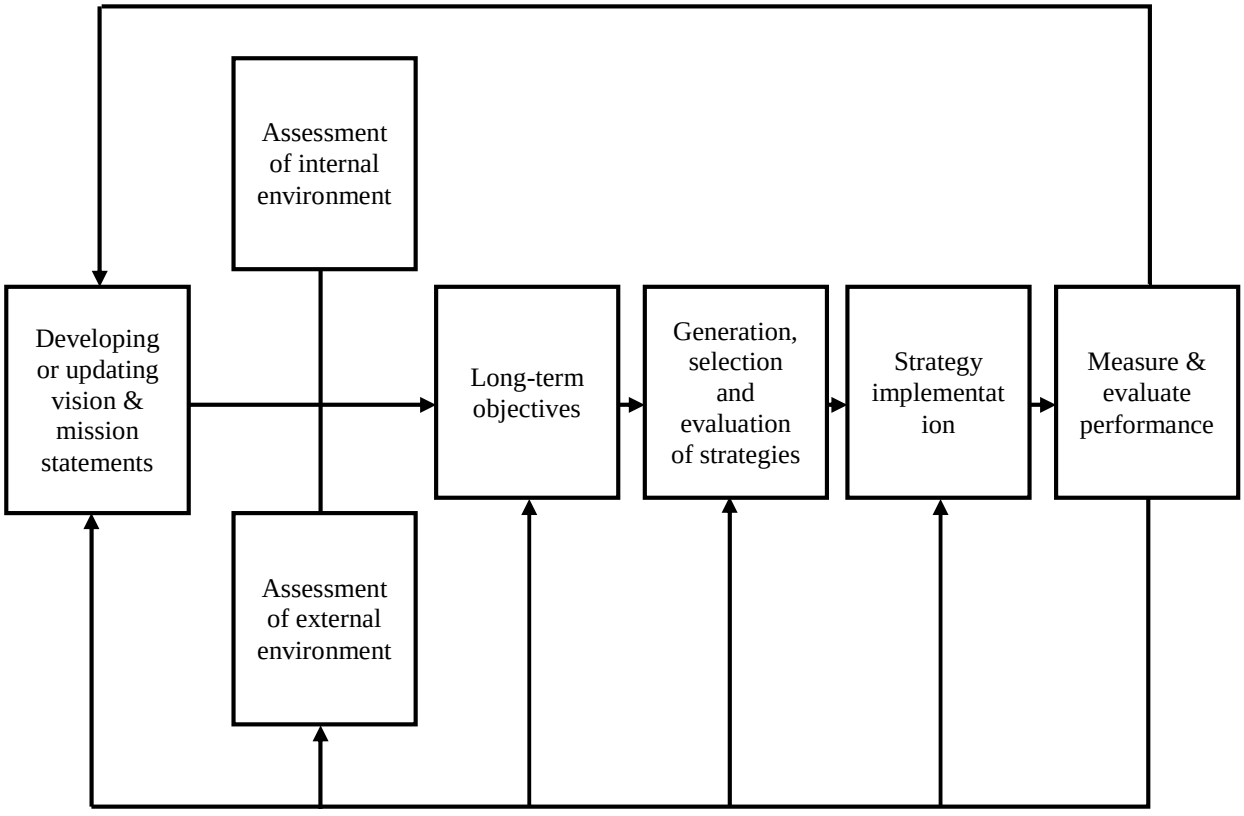


*Fig. 3. F. David's strategy management model [32]*

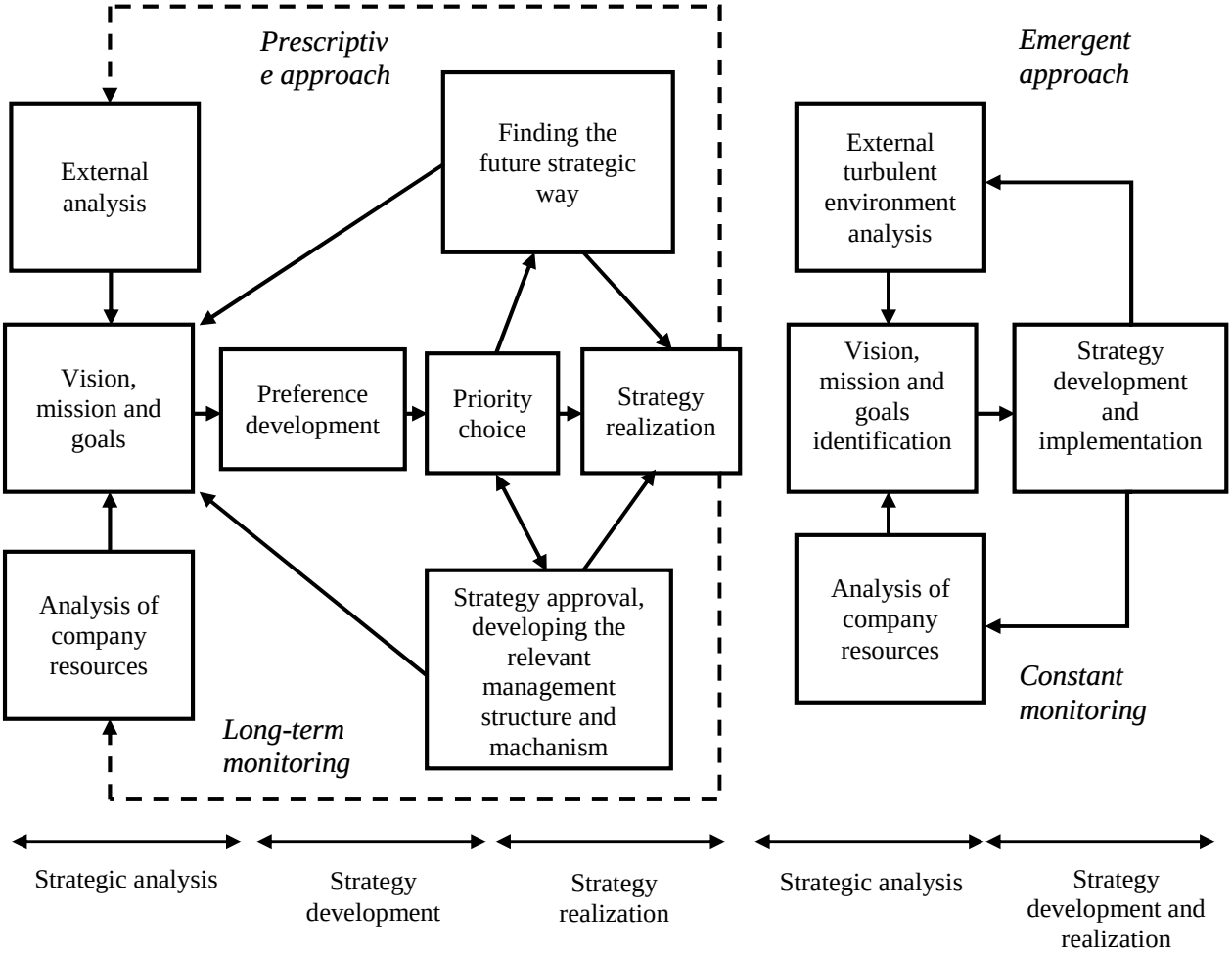


*Fig. 4. R. Lynch's strategy management model [33]*

Ukrainian authors propose the following models of strategic management [34]:

1. Entrepreneurial – characterized by the foresight of a leader who is actively looking for new opportunities, goes to various changes and making informed decisions. This type of management is most common in enterprises that are newly established or are in financial difficulty and have strong managers.

2. Adaptive – based on the implementation of prudent measures to respond to problems and identify opportunities for their gradual solution. This type of management is used by managers of enterprises with sustainable economy. It is effective under stable external conditions. Lower level executives have some freedom to execute a strategy.

3. Planning-based model – provides for systematic benchmarking, strategy development and decision justification. This type of management is typical of large enterprises with sufficient resources to carry out detailed comparative analysis. Planners are involved in developing this strategy.

4. Based on the "strategic gap" – implies the formation of a "field of strategic decisions" that must be taken by the managers of the enterprise in order to transform the existing trends in the proper direction in order to achieve the required parameters of the enterprise development. This approach focuses on aligning "what is possible" with "what needs to be achieved".

5. Based on the strategic advantages of the company – based on the use of the results of SWOT analysis.

6. Based on creating and maintaining an enterprise's competitiveness - involves focusing the enterprise on long-term competitiveness through the use of a wider range of strategic measures. The key factors of success of the enterprise are determined.

7. Aimed to create a positive image of the company – involves the development of an investment option for long-term development of the enterprise, as enterprises with a reliable reputation have loyal customers, reliable partners, wide access to credit, investments.

8. Based on the size of the enterprise – involves the formation and effective use of a specific organizational system, which assumes the existence (appointment) of responsible persons (units), who perform separate work on the development and implementation of various strategic plans.

Each of these models has both advantages and disadvantages, which are analyzed in Table 4.

*Table 4*

**Advantages and disadvantages of different strategic management models**

| No. | The name of the strategic management model | Advantages | Disadvantages |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 1 | Strategic management through the choice of strategic positions | The ability to analyze prospects, identify priorities and allocate enterprise resources | The position chosen may not be in line with market trends |
| 2 | Management based on the ranking of strategic tasks | Reviewing current strategic objectives through categorization, analysis and continuous renewal | Not taking into account the external environmental impact of the enterprise |
| 3 | Strategic emergency management | Enables quick response and management decisions at the enterprise | The expectation of a strategic surprise can divert the attention of an enterprise from solving operational tasks |
| 4 | Weak signal control (anticipative) management | The enterprise's response to strategic announcements of strategic surprises | Anticipation of the signal-herald may divert the attention of the enterprise from solving operational problems |
| 5 | Entrepreneurial | Orientation to the key role of a leading manager-entrepreneur | Inability to make managerial decisions collectively |
| 6 | Adaptive | Cautious enterprise response to problems and their gradual solution | Difficult to apply in dynamic environmental conditions |
| 7 | Planning-based model | The use of strategic planning | Based only on the possibility of predicting the future |
| 8 | Based on the “strategic gap” | Collective strategic management decisions | Difficulties on finding a strategic niche |
| 9 | Based on the strategic advantages of the company | Identification and developing the strengths of the enterprise | Rejecting the destabilizing influence of the weaknesses of the enterprise |
| 10 | Based on creating and maintaining an enterprise's competitiveness | The assessment and development of enterprise competitiveness | Focus on continuous, stable long-term competitiveness of the enterprise |
| 11 | Aimed to create a positive image of the company | Formation of a positive image of the enterprise in the market | Focus on continuous, stable long-term development of the enterprise |
| 12 | Based on the size of the enterprise | Building a specific organizational structure of the enterprise | Not taking into account the external environmental impact of the enterprise |

Summarizing the authors' approaches to the implementation of strategic management, it can be argued that the specific nature of enterprises and the dynamic nature of the environment make it

impossible to develop a universal model of strategic management.

However, there are common features that are characteristic of all the models analyzed:

- formulation of the mission;
- setting goals;
- analysis of the internal and external environment;
- developing and analyzing strategic alternatives and choosing the best strategy;
- formation of long-term strategic plans, projects and programs;
- implementation of plans, projects and programs;
- control over implementation;
- evaluation of the results of the strategy implementation and its adjustment.

**Conclusions**

The main idea that permeates all the analyzed basic models of strategic management is to take into account the interconnection and interaction of the external and internal environment of the organization in defining the mission and goals. Strategies play the role of tools to accomplish the stated mission and achieve the stated goals, and for the successful implementation of the strategies, all functional units of the enterprise need to work smoothly in the strategic mode.

Strategic management is largely based on human potential as the basis of the organization, ensuring compliance of production activities with market demands. In today's market environment, strategic management must be characterized by a high degree of flexibility in order to implement timely changes in the organization in response to changes in the environment. Strategic benchmarks for improving the enterprise and its individual subsystems must be the basis for ensuring its long-term competitive existence.

The definitions of “enterprise strategic management” and “enterprise strategy” were analyzed during the study and the main strategies used in a market environment were examined. An enterprise strategy is seen as a systematic plan for its potential behavior in the context of incomplete information on the future development of the environment and entrepreneurship, including the formation of a mission, long-term goals, as well as decision-making paths and rules for the most effective use of strategic resources, strengths and opportunities, elimination of weaknesses and protection against environmental threats for future profitability. The application of strategic management and strategies at enterprises makes it possible to use economic, organizational and technical capabilities of production, to coordinate work on enterprise development in a timely manner.

With regard to further research, the development of a new dynamic approach to strategic management is relevant today. The existing concept of strategic planning needs to be complemented by processes of creating and maintaining competitive advantage, as competition in the global market is exacerbated at a critical pace.

In addition to formulating a strategy, it is equally important to ensure its effective implementation. To this end, three basic elements must be agreed upon in an organization: the organization's strategy, employees, and the management system. Each of the above elements is a necessary condition that determines the effectiveness of the implementation of the adopted strategy. Together, they form a kind of base that allows to create an effective management process.

In a new market environment for long-term competitive advantage, companies must take into account new concepts and methods that are based on balancing the unique value of the company, its core competencies, social responsibility to owners and creditors, employees and the local community, before customers, in front of the natural environment. Equally important is taking into account global trends such as increasing tolerance for different groups of people, focusing on a more environmentally friendly lifestyle and conscious consumption, and more.

Given the uncertainty of the environment, the variety of methods developed and the lack of information barriers, companies have the opportunity to develop by experimenting with different models of strategic management and rationally using their own resources and competencies.

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# ACCOUNTING BALANCE AS A HISTORICAL CATEGORY: THE CONTRIBUTION OF SCIENTISTS TO THE HALICY OF THE SECOND HALF OF THE XIX- FIRST HALF OF THE XX CENTURY IN THE DEVELOPMENT OF BALANCE SCIENCE

**Abstract**. The origins and the evolution of the balance sheet in the system of theoretical and conceptual foundations of balance theories are considered. The researches of scientists of Galicia of the second half of XIX – first half of XX century are analyzed. the accounting paradigms they have formed and theoretical developments with a view to their contribution to improving the balance sheet structure. The hypothesis of this study is the assumption that the period of individual ideas for the development of balance science and relevant methodological approaches that can objectively be used as a means of enhancing the validity of contemporary research. The scientific validity of the proposed use of ideas formed in the past in the designated territory is based on the following postulates: proposals for improving the balance sheet at the expense of past experience in the principles of valuation of balance sheet items and the introduction of the methodological principles of capital structuring formulated in the past (balance sheet liability). These approaches are justified in line with contemporary financial management paradigms, including sustainable development management concepts. The scientific novelty of the study is that for the first time in historiography, objective data on the contribution of Galicia's scientists to the global development of balance science are presented, and suggestions have been made as to the possibility of using certain developments to deepen modern principles and approaches to improving the form of balance generalization.

The methodology of the study is based on the principles of historicism, scientificity, verification, authoritative objectivity, moderate narrative constructivism. Using general scientific and interdisciplinary methods of cognition, conceptual and methodological developments of Western Ukrainian scientists in the field of balance studies in the period declared by the study were evaluated. Systematic methodology is ensured by the coherent use of general scientific (analysis, synthesis, generalization), historical (historical-genetic, historical-system) methods and the application of specific tools for the subject area of knowledge.

**Key words**: financial statements, balance sheet, balance theory, asset and liability balance, the theory of balance of the territory of Galicia, conceptual and methodological works of Western Ukrainian scientists.

## Introduction

The development of accounting thought and accounting theory have always been closely linked to the form of balance sheet, which, forming a projection on the functional content of accounting, served as a source of meaning and terminology. The accounting information is subordinated to the general purpose of providing reliable and relevant data on the financial and economic status (potential) and performance of the economic entity. From the point of view of the informative nature of the public reporting of modern market economy entities, there is an insufficient elaboration of an adequate concept of balance modeling, principles and methods of evaluating balance sheet items.

At present, there is a total and growing distrust of participants in business relations, where one of the multifaceted problems is the lack of efficiency of the institutions of formal control over the objectivity (reliability) of public financial information. In today's business relations, there is a

need for confidence that financial and economic agreements are formed in conditions of sufficient informativeness of participants, which aggravates the problems of quality of public reporting and in particular balance. The standardized reporting information array is essentially the only (in terms of sufficient reliability) available and regularly updated enterprise data set.

There is a large amount of research available today research on an international scale confirms the dissatisfaction with the relevance and usefulness information of public financial reporting. For example, well-known financial reporting specialist, finance and accounting professor at Stern Business Schol (New York University) Baruch Lev, considers the "failure of accounting standards developers to adopt a traditional income statement (compliance) model in favor of a balance sheet model (asset valuation)" [1]. That is, it is the highest, in the view of this and many other scholars, the potential formulated in the past for the concept of accounting. Such a concept was developed in the course of the long evolution of the balance theories and the efforts of the leading scientists of European countries. The above actualizes the need for a more in-depth study of the proposed ideas during the development of balance studies. Balance in public reporting is the core, quintessence of reporting data, however, despite the centuries-old experience (theory and practice) of drawing up the balance, the problem of ensuring the quality of its information content remains relevant.

**Formulation of the problem**

Modern scholars are of the opinion that historical "balance sheet research is relevant today" [2, p. 138], whereas "the generalization of the development of the historical aspects of the balance sheet provides an opportunity to understand its current meaning, to assess the present state of construction and to identify problems for the further development of the balance sheet" [3]. It is believed that the results of such studies provide an objective way of predicting the direction of further evolution of this major form of public financial reporting [4].

In thematic historiographical sources, studies of the evolution of balance focus on the stage of development of balance thought, which occurred in the second half of the XIX - mid-twentieth centuries. During this period, "balance studies" for the first time went beyond the scientific debate and its theoretically formed forms began to be reflected in the legislative provisions in the field of accounting and public financial reporting of different countries. Of course, the balance theories outlined in the accounting historiography of the three "S", articulated by the initial letters of their developers – Simon (1886), Schmalenbach (1919) and Smidt (1921) [5–7] came to the fore. These are representatives of the German School of Accountancy, which was the basis for theoretical studies in Austria-Hungary and, accordingly, in the territory of Galicia. The work of scholars of the German School of Accountancy and European studies in the field of balance studies were well known in the scientific circles of Galician scientists. Forming their own theories and paradigms, some of which are classified at the "international level", Galicia's scholars relied on these works.

The high status level of workings of Galician scientists is confirmed by the findings of some domestic and foreign researchers. Some of them point to the development of another, in addition to the three above-mentioned balance theories, the "econometric balance theory" [8]. This is the development of P. Ciompa [9] was considered at the International Accounting Congress, which testifies to its high scientific level and contribution to the global development of accounting theory. ["Congres international de comptabilite, de droit commercial et comptable" "Compte-Rendu, Lyon1908"].

Actualizing the unexplored problem of the publication of the contribution of Galician scholars to the world heritage of the development of balance studies, we will conclude, above all, foreign scientists. For example, Polish researcher Biadacz R. points out that "by his development R. Ciompa made a significant contribution to the theory of accounting at the turn of the nineteenth and twentieth centuries, in which he outlined the econometric balance theory: it was recognized as a sensational scientific discovery in this field on a scale II [10]. In a similar way this development was characterized by the French scientist Karl-Friedrich Israel. Assessing the theoretical structure of this

theory from the point of view of the formulated econometric concept of balance generalization, compared to the principles of modern econometric concepts, he noted: "I have come to the conclusion that modern econometrics must return (to be restored) to its descriptive character, defined by R. Ciompa [11]. Finally, the justification that, by its theoretical and methodological level, the development of this scientist is one of the most extraordinary and at the same time intellectual works in the field of accounting and has introduced a new impetus to the global development of balance studies is deeply revealed in other author's publication [12].

In addition to the above, a high level of scientific and methodological character was observed in other works of Galician scholars in the field of balance studies. This conclusion can be justified, for example, on the basis of the development of the Balance Sheet. Studja ekonomiki prywatnej (Góra W., 1920) [13], Rachunkowość pojedyńcza i podwójna (Lenkiewicz W., 1905) [14], Polskie bilansoznawstwo (Seifetr T., 1930) [15], Wartość w economice a w bilansach (Tomanek F., 1931) [16]. The last author was a leading specialist at the regional level in accounting and balance. His development, aimed at justifying the basic principles of "balance studies", has been widely discussed. For example, it was the topic of his "inaugural" speech at the School of International Trade at the International Conference "Economic Life and Social Economy" held by the Polish Economic Society in Lviv [16] and at an in-depth level was disclosed in a summary presentation at the 1st Regional Congress of Accountants of the Lviv District "Reconstruction of Economic Life and Accounting" [17].

Given the above and a number of other factors, "there is a need to study the history of accounting (financial) reporting in Ukraine, since the issues of its formation and evolution are poorly understood [18, p. 443, 444].

**Methodological approach**

The methodology of the article is based on methods of scientific knowledge such as general scientific and special. The choice of research methods is determined by the subject matter and the intended purpose of this article. The developed methodology provides objectivity of disclosure of various scientific and applied researches of scientists of Galicia for improvement of balance generalization. To assess the accounting developments under study from the point of view of the analysis of publications of foreign and domestic researchers on the current contemporary problem in the field of balance generalization, the results and conclusions of research sources of historiographic nature, which revealed a rational solution to such problems. The chosen method has allowed to get new results concerning previously unexplored works of the theorists and practitioners of Galicia, to get a more extensive information base on their contribution to the world development of balance studies.

The process of analyzing and evaluating conceptual foundations in the researched of Western Ukrainian scientists was ensured by the use methods such as formal logic, retrospective method, interdisciplinary methods. The determined coordinates of the study determine the use of a systematic methodological techniques, in which the system-historical method is the basic toolkit. The research used scientific-cognitive methods of abstraction and concretization, which provided the opportunity to borrow experience of conducting studies of this type. For the theoretically and methodologically clarify the processes of formation and evolution of contemporary approaches to balance have been used the method of historiographic analysis and the historical-comparative method.

Through the integrated use of the above methods, historical and accounting intelligence was carried out in accordance with the principles and approaches of the JEL Code Classification.

**The purpose of the article**

The unresolved problem to date is to consider the lack of systematic and professionally oriented research of Galicia's theorists in the field of balance in the historical past, to put into scientific circulation the results obtained by them and to substantiate the possibilities of using individual ideas for the modern processes of improving and improving.

**Analysis of the latest pulication**

Studies of the history of the balance sheet were conducted by many domestic and foreign scholars in the context of numerous scientific schools, currents, directions, periods, as well as from a specific point of view regarding the

formation and development of balance sheet generalization through the prism of its consideration as accounting and economic category; meaningful content and functional positioning of the balance generalization, incl. and within specific accounting models. Some studies also have a purely specific (narrowed) nature of the historical excursion, including a comparative consideration of the legal, economic, procedural and personal dominant component in different approaches during the evolution of the balance sheet. However, as K. Y. Tsygankov concludes – "the historical balance form, like all its reformations, has not received a detailed theoretical interpretation" [19, p. 18].

Regarding the disclosure of the content and analysis of the developments in the time period of the regional section declared in the article, these developments are characterized only partially. For example, a full member of the International Academy of Accounting Historians, well-known Russian scientist Y. V. Sokolov stated: "in Austro-Hungary R. Ciompa expanded accounting theory by enriching its techniques of algebra and geometry, resulting in world science qualitatively" [20, p. 325]. In the section "Balance sheet development" of the monograph [21], A. V. Chizhevskaya points out: "Among the works devoted to accounting, we consider the development of P. Ciompa, where particular attention was paid to the objectification of the balance sheet items - the presentation of the real (really existing, not impaired) value of property and capital" [21, p. 151]

L. Pilipenko articulates the development of Lviv economist R. Ciompa such that by all scientific criteria should be recognized as another model in accounting theory and gain a prominent place among the above static, dynamic and organic balance theories [8, p. 64].

The purpose of the article is to systematize knowledge about the contributions of Galician scientists to the development of the balance sheet generalization, formulate specific conclusions about the importance of such developments and make proposals for the possibility of using individual studies for the development of modern forms of balance.

**Presentation of basic material of the research**

The topic of balance summarization is one of the most common in the field of historical studies of the evolution of accounting. In historiography, it is customary to distinguish the conditional stages of the development of the balance sheet (the construction of forms and content of articles) – the emergence of balance as an economic category, the formation of balance as an accounting category and the stage of theoretical and scientific development in the field of balance and reporting (balance theories and accounting models).

The whole range of studies of the origins and evolution of the balance sheet generalization of accounting data is predominantly based on the principles of evaluating its practical construction and theoretical constructions of the basic ones. Historiography in the subject area of knowledge adheres to the view that, in the initial stages of the formation of system accounting and in the subsequent stages of its development, the balance was formed in an arbitrary form and used as a means of control and management of trade or banking. At that time, the practice of conducting accounting analytical accounts without a proper methodology for their synthesis caused an overload of articles of any of the forms of balance sheet generalization used. Despite this, some scholars hold that "historical balance was the technical form of capital balance" [19, c. 21]. These views are based on the fact that the "capital account" (or the main balance sheet general account) was "tied" to the so-called "inventory" (description of valuation property) in accounting practice. On the basis of correlation of such account with property accounts and debt accounts, a balance sheet document of a certain form was formed, which nevertheless made it possible to outline with greater or lesser degree of certainty the financial status of the enterprise.

Summarizing the accounting information in the current accounts was a common approach to drawing up a balance sheet, which, in essence, amounted to an elementary transfer of arithmetically determined balances to a consolidated balance sheet. For example, an analysis of archival documents containing the preserved balance sheets of economic entities in the territory of Galicia and current accounting and accounting documents for the period defined in the article shows that this approach was used until the first half of the XIX century. Based on these archival sources and materials of the manuals of theoretical

orientation of East Gothic theorists to the middle of the XIX century. it is sometimes difficult to establish specific distinctive features of the concepts of capital and balance. Only in subsequent periods is there a noticeable delineation of these concepts and their interrelation. This was due to the fact that a balancing account of "capital" was introduced into the consolidated dataset of property and debts. This practice of drawing up a balance sheet has been well-established in Europe and has been borrowed from Austro-Hungarian enterprises (and Galicia, respectively). Subsequently, this arbitrary practice received, although quite "blurred", however, the legislative consolidation.

The further development of the balance sheet in Galicia took place in the same way as in other European countries. That is, improving the format of the balance based on practical demand and regulatory regulation, as well as through the influence of developed theories (paradigms) of accounting and balance. The latter trend was associated with the need for a clearer form of balance sheet for joint stock companies, since in accordance with the regulations on companies, the requirement to publish their reports and balances was made by them. Under Austrian law, the balance sheets of joint-stock companies and similar cooperative associations were to include data on fixed and reserve capital, net income and depreciation of fixed assets, as well as the costs of their creation (organizational funds). That is, the legislation at the time approved the balance sheet as a reporting form that reflected in it articles that could not be formed solely on the basis of inventory data.

Regular compilation and publication of balance sheets by joint stock companies of insufficiently specified content at the end of the 19th century. eliminated the need for clearer rules for its construction, eliminating the possibility of reporting in a more attractive form through methodological manipulation. Historiographic sources indicate that such manipulations were manifestly reflected in the chosen approaches to property valuation, as well as in the use of methodological tools – manipulation of income (loss) and capital accounts, opening of accounts or processes of depreciation. For this reason, balance remained, though an important object of practical accounting, but at the same time became the subject of theorists.

Balance as a reporting public form received a higher level of formalization in the period of balance sheet formation (the science of the economic essence of the balance sheet, the principles of its construction, rules for the recognition and evaluation of its items). The basis of this accounting direction were the teachings of I. F. Shera (1890), in which he laid the basis of accounting and developed a theory of accounting, called the balance sheet [22]. Within this direction, several specific balance theories have been formed, which, in their conceptual and methodological basis, nevertheless differed from one another. For example, dynamic balance theory [6] focused on determining the fair value of financial results that requires an assessment of property values at purchase prices rather than real current values Using such an estimate distorts the total value of assets at the time of the balance sheet. To overcome this problem in organic balance theory [7] proposed to evaluate assets at current prices, introducing the concept of "reproductive value of the enterprise". Dualism (the real value of financial assets and the reliability of the indicator "productive activity of the enterprise") by the author of this theory was eliminated by his proposed method of comparing the reproductive value for the reporting period. The difference in the total value of the assets was the profit of the enterprise. Static balance theory [5] had a "legal leaning" and was focused on the settlement of insolvency and bankruptcy. Its important aspect was the orientation of the balance sheet to reflect the assets and liabilities at current prices..

Assessing the content of these balance theories, well-known modern German scientist Jorg Baetge concludes that they based on simplification and aggregation (objectification) formulated proposals for the balance, which in its content only declaratively shows the balance value of the property condition of the organization. He noted that the balance sheet theories of all the components of the enterprise value are not taken into account, and on this basis it is concluded that no balance theory can be achieved in the balance sheet of the real value of the enterprise capital capital, since they are based on the principles of individual valuation. [23, c. 13]. During the period of balance studies development, East Gothic theorists also criticized the problematic components of balance theories. For example,

R. Ciompa (1910) gave a similar assessment of approaches to balance sheet construction: “today they have gone so far that the accountant feels sufficiently authoritative to” conjure up “property values (assets) and values of components of capital (total capital)” [9].

In the global space, balance studies were also formed in the context of separate accounting schools with different basic principles: Italian – logismographic and statmographic approach; French – mathematical; Anglo-American – pragmatic; German – Chamber. In the territory of Galicia the basic provisions of the German school of accounting were dominant, but in their theoretical developments they used both the work of representatives of this school and the European heritage. In addition, the orientalist theorists' development orientation was influenced by practical approaches to building the balance sheet used by foreign firms operating in the area. Based on archival documents [24], first let's point to some big companies: “Malopolska” – Koncern francuskich towarzystw naftowych, pemyslowych I handlowych we Lwowie; Polsko-wloska spylka akcijna dla przemyslu naftowego “Bonariwa” we Lwowie; “Austria”. Petroleum-Industrie-Aktiengesellschaff in Wien-Towarzystwo akcijne dla przemyslu naftowego w Wiedniu; Holendersky syndykat naftowy. Spulka z ograniczonoj odpowiedzialnosci we Lwowie). The balance sheets of these corporations show that one of them (Italian) was dominated by the balance of the gross (consisted of indicating retained earnings), in others – the balance-of-net (consisted of taking into account the distribution of profits). However, a technical and procedural view prevailed in the region, recognizing the balance as “a synthesis of off-balance sheet accounts”.

Revealing the general landscape of theoretical and applied developments in Galicia concerning the solution of problems of objectification of the methods of balance generalization, we say that the basis for the development of scientists of the land was the “Encyclopedia of Accounting” Roberta Sterna. The starting point for establishing the bookkeeping value of the enterprise was the postulate that “only property that possesses the capacity and purpose of productivity is capital” [25, c. 290] . Another basic development was the work of Richard Reisch, Klemens Kreibig “Balance and tax”, where under the property values was presented “the totality of all tangible and intangible assets available to the accountant” [26, c. 1]. The work presented and the paradigms offered have argued in various ways the appropriateness of using the principle of subjectivity in valuing assets for accounting purposes. It was argued that each item should be valued according to the principles that are most appropriate for a particular group of assets. It was on the basis of the above doctrines that the objective expression of the value of capital was substantiated.

Both the common European practice of that time and Galicia's enterprises were dominated by the technique of calculating the so-called “net capital” (the main object of the annual report is the residual capital of the owners). Such an indicator was inherently comparable (identical in meaningful sense) with the insertion of a summary financial result. Methodologically, it was determined by simple arithmetic subtraction from the amount of assets of indebtedness to third parties. This basic basis was also observed in the scientific paradigms of Galician scholars: “assets minus foreign capital give the amount of equity”. This way of establishing the value of capital they articulated “recapitalization” [27, c. 15].

It was a common experience, if not sufficiently focused from a theoretical and methodological point of view, but recognized as a method of indirectly presenting in the public accounts the productive activities of the enterprises of that time. It should be noted that this technical and procedural methodology, by its very nature, still coincides with the basic approaches to reporting in some UK companies. On the basis of the developments of leading European scientists, as well as individual achievements in the financial and accounting sphere of the country, knowledge about the essence of the balance method was deepened, the rules for evaluating the balance sheet items were formalized, and the form, content and structure of the balance sheet.

The development of advanced forms of balance sheets was carried out in two directions – balances for small business entities (a prototype of modern simplified reporting for small businesses)

and balances for large enterprises and joint stock companies. However, in both cases, the development was based on the proposition that "the balance indicates the ultimate estate status of the enterprise through material and ideal values ... capital is the determination of the value of the estate" [28, c.14]

In the table. 1 for an example is given in the original statement formulated in the writings of Galle Ja [29] Tomanek [16] property balances (property balances). These forms of property balances, which are proposed by other Western Ukrainian researchers, look visually simplified. However, the justifications for the developed format and content of the articles of the balance sheet generalized numerous arguments, and for their practical application suggested methodological provisions.

*Table 1*

**Forms and structure of property balance, developed by the theorists of Galicia**

<table>
<tr><th colspan="5">Author and the name of work</th></tr>
<tr><td colspan="4">Galle Ja. (1938). Zarys ksiegowosti kupieckij [29, s. 76].</td><td colspan="2">Tomanek, F. (1932). Wartość w economice a w bilansach [16, s. 79]</td></tr>
<tr><td colspan="4">Bialans majatkowy</td><td colspan="2">Bilanz majakow</td></tr>
<tr><td colspan="2">Aktywa</td><td colspan="2">Pasywa</td><td>Stan czynny</td><td>Stan bierny</td></tr>
<tr><td>1</td><td>Kasa</td><td>1</td><td>Akcepty</td><td rowspan="8">I. Konta czysto zapasowe:<br>1) kasy,<br>2) remes,<br>3) dłużników.<br>II. Konta zapasowo-wynikowe:<br>1) towarów,<br>2) walut,<br>3) dewiz,<br>4) papierów wartościowych,<br>5) sklepu,<br>6) ruchomości,<br>7) nieruchomości.</td><td rowspan="8">I. Konto własnego kapitału.<br>II. Konto obcych kapitałów:<br>1) trat,<br>2) wierzycieli,<br>3) pożyczek hipotecznych.<br>III. Konta wynikowe:<br>1) odsetek,<br>2) prowizji,<br>3) koszów.</td></tr>
<tr><td>2</td><td>Towary</td><td>2</td><td>Wierzyciele</td></tr>
<tr><td>3</td><td>Weksle</td><td rowspan="2">3</td><td rowspan="2">Kapitał Jana Kosowskiego</td></tr>
<tr><td>4</td><td>Dłużnicy</td></tr>
<tr><td>5</td><td>R-k prywatny Jana Kosowskiego</td><td>4</td><td>Kapitał Witolda Kosowskiego</td></tr>
<tr><td>6</td><td>R-k pryw. Witolda Kosowskiego</td><td rowspan="2">5</td><td rowspan="2">Czysty zysk</td></tr>
<tr><td>7</td><td>Ruchomości</td></tr>
<tr><td colspan="6">Konto bilansu, dla wykazania stanu składników majątkowych, oraz wkładek kapitałowych.<br>Konto strat i zysków, dla zestawienia poszczególnych wyników gospodarowania.</td></tr>
</table>

The analysis of developments in this area shows that in almost all works, the emphasis was placed on the importance of the stage of recognition of assets (assets) and the importance of inventory for the accuracy of balance sheet data. For example, in the work Sciborski A. [30] in the section "Recognition of property" (in the original statement Rozdział I Rozpoznanie majątku Inwentowanie) and in the section "Spisanie majątku czyli sporządzenie inwentarza: use of prowadzenia inwentarza results when completing the balance sheet. A similar rationale for the reciprocal impact of inventory results and balance sheet data can be found in the development of Galle Ja [29] in the highlighted section "Inwentarz i bilans majątkowy".

We will highlight separately the important, in our view, aspects in the development of an improved form of balance. In particular, the emphasis in particular developments on such criteria components as the marking of property assets (definition and description of individual assets). This component at a high research level was developed [30] and with sufficiently high methodological support is given in the section "Oznaczenie właściwości majątku: Oznaczenie i opisanie individualsynczych części składowych majątku; Oszacowanie majątku". Similar

conceptual and methodological content and nature of approaches to the structural description of property ownership are given in the works of Lenkiewicz W. [14] and the development of Seifetr T. [15] and Au Juliusz [31].

In some developments such concepts as "active property" and "passive property" stood out. This can be seen both from the report form presented in the table by Tomanek F., and from the justifications given in the section "Oznaczenie ilości majątku: Majątku czynnego; Majątku biernego" in work [30].

The types of balance generalization were distinguished in the developments. For example, in the work of Corniak S. [32] the "balance sheet" (Bilans próbny), the "work balance" (Prace bilansowe) and the "general balance" (Bilans abrlaryczny; Bilans kontowy) are highlighted. The most important components of these developments should be considered by the authors formulated a balance sheet method. Let us point to the following approaches to the construction of the method of property balance in work [30] – "Bilans majątkowy Sposód sporządzania bilansu majątkowego" and in work [29] – "Bilans zamknięcia i bilans otwarcia". Methodological components of the development are also proposed approaches to establishing changes in property ownership – "Zmiany majątkowe: O zapisywaniu zmian zaszlych w stanie majątku i prowadzeniu w tun celu rachunków" [30] and property control – "Kontrola stanu majątkowego przedsiębiorstwa" [29]. The application in practice of the proposed components to the construction of balance sheets can be seen from the promulgated balance sheets of cooperatives that were members of the Audit Union of Ukrainian Cooperatives in Lviv [33].

In developing the conceptual and methodological principles of balance sheet generalization for public companies, the existing problems were comprehensively analyzed: "our balance sheets are somewhat unclear, since in many cases it is simply not possible to find out the significance of all the articles, especially when reserve funds, reserves and so-called balances are found in the balance sheet. mutual test scores" [9]. Specific shortcomings of the balance sheet reports at that time were presented, substantiating them inaccurate or incorrect (false balances). From the table. 2 shows that the standard form of the balance sheet of that time (Eine falshe Bilanz) was based on its own research, and in a comparative variant the format of the advanced balance sheet generalization (Eine richtige Bilanz) was proposed. Note that the improved construction of balance sheets, formulated in the works [9] and [13] nevertheless, they differ significantly both in conceptual content and structural structure.

*Table 2*

**The common and proposed forms of balance in the development of Eastern Gothic scholars**

| **Ciompa, P.** (1910). Grundrisse einer öekonometrie … natürliche theorie der buchhaltung;[9, s.186] | | | |
|---|---|---|---|
| **Eine falsche Bilanz** | | **Eine richtige Bilanz** | |
| **Aktiva** | **Passiva** | **Vermögen** | **Kapitalien** |
| 1 | 2 | 3 | 4 |
| Bargeld | Stammkapital | Bargeld | Beamtenu. Arbeiter: Gehalte, Löhne |
| Münzen | Reservefonds | Münzen: angekauft | Akzepte: nominale |
| Effekten | Dubiosen-Reserve f. Rimessen | Kurs-Verlust | Diskont |
| Effektenzinsen | Dubiosen-Reserve f. Debitoren | wirklicher Wert | wirklicher Wert |
| Rimessen | Kursdifferenzenreserve | Effekten: angekauft | Rimessenkreditoren: begeben |
| Devisen | Erneuerungsfonds f. Maschinen | Kurs-Gewinn | Diskont |
| Debitoren | Trapsitorisches-Konto (Depositen) | wirklicher Wert | wirklicher Wert |
| Waren | Akzepte | Effektenzinsen | Kreditoren: Nominale |
| Mobilien | Kreditoren | Rimessen: im Portefeuille | Diskont |

*Continuation of table 2*

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Maschinen | Nachschüsse | begeben | Verlustanteil wirkl. Wert |
| Nacrhsdhüsseverpflichtung | Antizipationen | (Dubiosen: keine) | Rimessendubiosenreserve – Kapital |
| Transitorisches-Konto (Kautionen) | Diskont der Rimessen K | Diskont | Verlustanteil wirklicher Wert |
| Antizipationen: Provision K | Gehalte und Löhne | wirklicher Wert | Reservekapital: |
| Diskont der Akzepte | | Devisen: angekauft | Reservefonds |
| Verlust | | Zinsengewinn | Verlustanteil |
| | | Kursgewinn | wirklicher Wert |
| **Gora W.**(1920). Bilanse. Studja ekonomiki prywatnej [13, s.176] | | wirklicher Wert | Kapitalreserven: bei Effekten |
| **Aktyva** | **Passywa** | Debitoren: Nominale | Devisen |
| Kasa | Kapit ałakcyjny | Dubiosen | Waren |
| Pożyczki hipoteczne | Zwycz. fundusz reserw. | Diskont | Immobilien |
| Weksle | Nadzwycz. fundusz reserwowy | wirklicher Wert | wirklicher Wert |
| Debitorowie | Specjalny fundusz rezerwowy | Waren: angekauft per Kassa und 3 Monate | Stammkapital: |
| Udziały konsorcjalne | 4 $^{0}/_{0}$-owe listy zastawne | Diskont | Verlustanleil |
| Efekta kantoru wymiany | $4^{1}/_{3}$ $^{0}/_{0}$-owe | Gewinn | wirklicher Wert |
| Pożyczki na zastaw efekt | 5 $^{0}/_{0}$-owe prem. listy zast. | wirklicher Netlowert per Kassa | Nachschuss- kapital: |
| Gmach bankowy we Lwowie | Fundusz umorzenia pożyczek hipotecznych | Mobilien: angekauft | Verpflichtung |
| Zabudowania i magazyny filjalne | Asygnaty kasowe wraz z odsetkami | Reparaturen | nicht eingezahlt |
| Nabyte nieruchomości | Kredytorowie | 10 % Amortisation f. | wirklicher Wert |
| Ruchomości | Dyskont werslowy | 6 Jahre | |
| Kasa zaliczkowa | Kypony od listów zast. aż do 31/XII | wirklicher Wert | Verlust: |
| | Fundusz premjowy dla 5 % – wych list. zast. | Maschinen: angekault | Rimessendubiosenreserve |
| | Reserwa podatkowa | Amortisation | Reservefonds |
| | Wylosowane, zapadłe listy zastawne | wirklicher Wert | Aktienkapital |
| | Niepodjęte dywidendy i kupony | Kaution: fremde | Kreditoren |
| | Czysty zysk | Agenten:f. Provision | wirklicher Verlust |
| | Kurs akcyj | Immobilien: angekauft | |
| | Dywidenda | Wertzuwachs | |
| | w procentach | wirklicher Wert | |

The developers first of all argued that the right balance should represent the real (productive) tangible and ideal (intangible) values and the objective value of capital, expressed by the energy of productive property. In addition, in some developments it was argued that to refer to the balance sheet instead of the terms “Assets” and “Liabilities” should be used the terms “Property” and “Capital”, since any accounts payable from a financial and economic point of view must be recognized as foreign (invested, borrowed, borrowed) capital.

At that time, a whole system of capital reservation (see falch Bialanz) was developed, which was mainly implemented in practical accounting. In particular, it was mandatory to create a reserve fund through handicrafts, doubtful reserves for debtors, reserves for a change of course, a fund for the restoration of equipment. However, in the proposed development [9] these reserves are significantly expanded (see correct balance). In particular, the concept of "antizipaziren" (antizipaziren), which in its content envisaged the accounting method of extended provisioning (an action that precedes the onset of real events). Their division into active and passive antisipations is justified; for securities and bills, "reserves of capital", "capital on handicrafts" and some others.

In order to substantiate the proposed balance [9], the importance and the critical opinion of the author to the rules of valuation of different balance sheet articles are formulated first of all. (Die Bedeutung der Bewertung). Improved balance sheet valuation principles are formulated and substantiated (Grundsätze der Bewertung in der Bilanz) and the methodological provisions for the valuation of assets are formulated (Die Bewertung des Vermögens). The same was suggested for the valuation of the company's equity (Die Bewertung einzelner Kapitalien), including and in terms of its components: evaluation of the authorized capital (Die Bewertung des Grundkapitals); estimation of reserve capital (Die Bewertung der Reservekapitalien); valuation of foreign capital (Die Bewertung fremder Kapitalien); estimation of capital reserves (Die Bewertung der Kapitalreserven); assessment of passive expectations (Die Bewertung der Passiv-Antizipationen).

A comparative analysis of the "wrong" and "proposed" format of the balance sheet "Falsche und richtige Bilanzen" with a focus on producing a caricature of the balance – "Eine Bilanzkarikatur", noting on this basis the shortcomings of the legal regulation of the balance sheets "Kritik der gesetzlichenhen" basis. In order to substantiate the proposed balance, the relationship between its data and the main indicators of the income statement – "Das Gewinn- und Verlustkonto", taking into account its key indicators - The calculation of net profit or loss in practice (Die Berechnung des Reingewinnes oder Praxlis) and providing the correct (in the author's view) methodology for calculating net income (Eine richtige Berechnung des Reingewinnes).

## Conclusion

Formulation of further principles and approaches to improving the existing balance sheet is advisable to take into account the results of a systematic study of the history of this accounting category, analysis of developments in the field of balance studies, which will make it possible to reflect the experience of predecessors and take into account their experience in modern theoretical and applied developments. The analysis of individual developments shows that some developments in the historical past can objectively enhance the balance sheet's visibility, make it more informative and real, so that the economic resources and capital of economic entities are more objectively represented. These include the methodology for preparing balance sheets for small businesses, as well as sufficiently substantiated balance sheet items for publicly traded companies, especially those related to the provisioning of fixed assets.

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# ACCOUNTING AND ANALYTICAL SUPPORT FOR FORMATION OF ENTERPRISE ECONOMIC SECURITY COSTS AND THEIR CONTROLLING PROCESS

**Abstract.** The article reveals the interdependence of enterprise property preservation and quality of information for ensuring management and controlling processes efficiency. The dependence of economic security on qualitatively-formed accounting and analytical support for such purposes is substantiated. It is analyzed the enterprise's activities in terms of economic security formation by rational costs, in particular the influence of spent financial resources on employees' physical and moral security, formation of intellectual property, etc. The authors prove that nowadays, there are inconsistencies of the current accounting with the enterprise economic security requirements. The scientific validity of this study is to overcome the inconsistency of different user groups' information needs with appropriate accounting data that causes difficulties to make timely and reasonable management decisions. It is emphasized that there are no methodological recommendations for reflecting enterprise economic security costs in its accounting. The novelty of the research paper is to partially solve the outlined problems because of using a subaccount "Economic security costs" in accounting. The authors argue that this additional methodical measure will help to find necessary data and use information more quickly for managing economic security costs. Considering no imperative restrictions on creating separate articles in reports for these types of costs, the authors suggest internal management accounting report forms. Their usage will create the environment of whole information about enterprise economic security costs for conducting analysis and maintaining control in this field. Some forms are proposed to be used in internal management reporting system ("Consolidated statement of enterprise economic security costs accounting" and "Statement of analytical accounting of the enterprise economic security costs"). The suggested form "Control statement of economic security costs by articles" allows a more detailed study of costs deviations from the planned or allowable amounts in terms of economic security costs. As internal control is a measure it is possible to verify the expediency, efficiency or legitimacy of business operations associated with enterprise economic security. For conducting the research, general scientific methods, special approaches in the subject area of knowledge and comparative analysis means have been applied.

**Key words:** enterprise economic security costs, management, accounting and analytical system, reporting, control.

## Problem statement

Today, there are inconsistencies of the current accounting with the enterprise economic security requirements, because the different user

groups' information needs are not satisfied with appropriate accounting data. In addition, there are no methodological recommendations for reflecting enterprise economic security costs and no internal management accounting report forms, which would systematize information for operational management and maintaining costs control.

A properly formed accounting and analytical subsystem of the enterprise will help to anticipate and avoid problems that affect the enterprise economic security, as well as to adjust its operations.

## Analysis of recent research and publications

Some aspects of the enterprise economic security are considered in [1], [2], [3]. The expediency of providing users with relevant accounting information has been proved in [4] and [5], and the need for its documentary confirmation has been demonstrated in [6]. The issues of organizing and methods for controlling economic activity costs in the field of enterprise economic security costs were raised in [7], [8] [9]; the problem of accounting for the enterprise economic security costs was firstly mentioned in [2] and [9]. But these issues have not been sufficiently resolved yet. As result, they require further investigations.

## Goals statement

The aim of our research is to give the definition of the term "enterprise economic security costs", analyze information about these costs in the accounting and enterprise statements, and study peculiarities of the process of controlling these costs.

## Results

### 1. The concepts of economic security and enterprise economic security costs

Theorists and practitioners have recently paid more attention to economic security, as a subject of economic science research, because growing competition emphasizes the need for protecting economic interests. Due to economic security an enterprise can respond to external and internal impact factors in time. It does not only ensure the economic stability of the enterprise but also helps to improve its employees' well-being level.

The interpretation of the economic security system is given in [1], as an organizational complex, which forms a set of measures for organizing, management, technical and legitimate support aimed at fulfilling interests of enterprise management and investors for security and stimulating enterprise sustainable development.

In order to realize these functions and fulfil the challenges that the economic security system faces with, it is important to identify necessary means and resources for this. The enterprise economic security system performance and viability depend entirely on the coherence and systematic functioning of the interaction mechanism of all elements in the enterprise economic security system. The economic security system with a well-organized cost base of the enterprise is known to be effective.

Despite the fact that economic security costs management is one of the important elements of the enterprise operations, this type of costs is not distinguished in the regulatory base. We should consider the term "economic security costs" as an aggregate of all resources increasing enterprise liabilities and further bringing economic benefits in the form of an efficient operation of the enterprise security service.

National accounting principles (standard) (NAP(S)) 16 "Costs" [10] shall distinguish several articles which would partially reflect the economic security costs. For example, there are safety costs that are included in representative, total production and total economic costs referring to administrative costs, or the costs of non-current assets protection related to sales, which are part of the costs of sales.

We distinguish the following approaches to defining enterprise economic security costs, such as: organizational, functional and managerial. An organizational approach is mainly used in management accounting and mostly allows specifying costs by assigning them to the appropriate economic security services of the business entity. A functional and managerial approach is used in accounting, on which basis

costs are determined by a set of costs that are associated with the performance of individual functions. In general, enterprise security is possible due to the effectively arranged accounting and analytical system, which will help the enterprise to identify its problems, risks and operational threats, as well as to prevent the negative impact of internal and external factors, which are presented in Fig. 1.

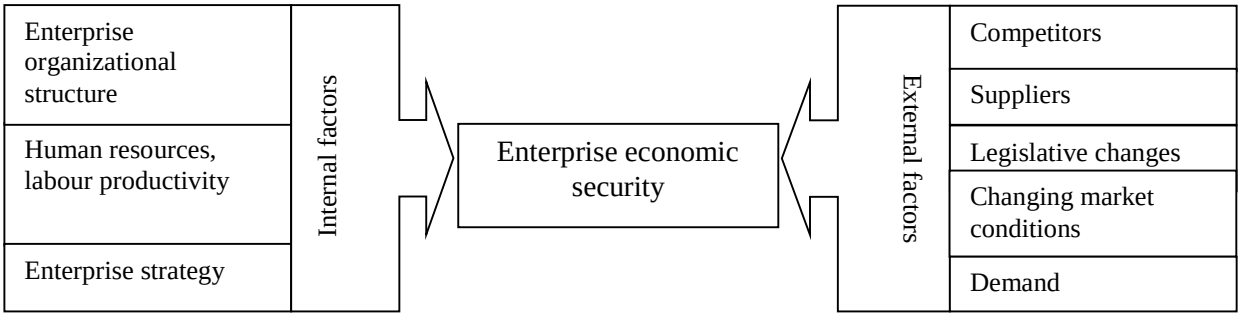


*Fig. 1. Factors affecting economic security**

** Source: [3]*

Therefore, we suggest considering the enterprise economic security as such its condition that will provide opportunities for preserving enterprise's interests before internal and external threatening factors, ensuring its sustainable development, achieving its mission and goals, and maximizing profits. At the same time, we define "economic security costs" as a disposal of assets or increasing entity's liabilities that are arising for preserving its interests in the context of internal and external threatening factors, ensuring its sustainable development, realizing its mission and goals, and maximizing profits.

## 2. Accounting and analytical reflection of information on economic security costs

The functioning of the enterprise economic security system depends on the quality, completeness, reliability and timeliness of the information generating by the enterprise itself and coming outside. Quality information can be generated only due to the interconnection of the accounting department with other enterprise's structural units. Costs spent on such security formation and management is an important part in accounting and analytical information on the enterprise economic security. Studying of the role of costs in enterprise economic security management may have a sufficiently branched network of directions [1].

In accounting, the basis for formation of the costs associated with a particular activity is grounded on a functional approach, which involves the attribution of costs to one type or another, depending on the areas of activities – production or non-production. Such approach is not reasonable enough in terms of economic security costs. For example, according to accounting legislation rules, employee safety costs are shown in the account 91 "Total production costs" and are considered to be production costs, i.e. they relate to all enterprise personnel, including those involved in the non-production area. However, according to the instructions in the accounting plan, total production costs relate to supporting production activities, and in this case, their content does not quite correspond to their economic nature. Considering costs on physical protection of fixed assets and other tangible fixed assets that cause enterprise products sales, we understand that ensuring of their preservation applies to all areas of the enterprise activities, not just product sales related activities. In the accounting system, the costs are distinguished as costs included in the cost of production (production costs), and costs financed by profit (non-production costs). Using these rules, occupational safety and health costs shall be written off to the cost of production, and representative costs shall be offset by profit. Therefore, economic security costs can be classified as internal organizational and transactional ones. It is worth finding out what costs should be included in a particular classification group. The classification of enterprise economic security costs is illustrated in Table 1.

*Table 1*

**Classification of enterprise economic security costs**

| Distinguished feature | Internal organizational | Transactional |
|---|---|---|
| Notion | caused by ensuring control and distribution of resources within the enterprise | related to minimizing the opportunistic behavior of external counterparts that requires additional information resources while choosing relationships with them |
| Reflection in financial statements | reflected in financial statements as operating expenses | mostly are not legally regulated |
| Differences in registry on accounts | ease of determination to certain accounts in accounting | difficulty of determining accounts to which costs should be included |
| Documentary confirmation | costs were recorded in primary documents (work completion certificate, act of delivery and acceptance) | this type of cost is mostly not recorded (in some cases checks are used) |
| Examples | administrative needs expenses: salaries, payment of bills, funds for ensuring confidentiality of information; making programs for economic security system effectiveness, social events, depreciated cost, personnel training costs | costs of getting information about external users: counterparties, suppliers, competitors |

At the present stage of business development and cooperation with international partners, the issue of enterprise economic security transaction costs accounting, being paid a special attention to, is increasingly raising. Considering economic security transaction costs, we find out the following interpretations:

– costs considered as costs of agent's behaviour monitoring and his self-restraint [11];

– costs of collecting and processing information, costs of contract performance controlling and legal protection [12];

– time consumption and other valuable resources of the enterprise for various contacts with its external environment, as well as internal communications: contacts with tax and other state bodies, communicating with its customers, suppliers, partners, etc.

– costs of finding counterparties, determining sales price and volume for each transaction, and providing redistribution of property rights [13].

First of all, it is difficult to reflect economic security costs on accounts of accounting. To summarize these costs, we suggest presenting them in a separate complex Article 92.*nb* "Enterprise economic security costs" as part of administrative expenses. After all, these costs fully coincide with nature of the administrative costs, because they are aimed at supporting the main activities of the enterprise, are permanent and anyway are not associated with volume of output.

Additionally to the suggested account, it is of paramount importance to open the following analytical accounts:

a – costs of establishing economic security system;

b – costs of maintaining economic security service staff;

c – costs of creating economic security database;

d – other costs associated with activities of economic security service.

Typical correspondence of accounts from economic security costs accounting are presented in Table 2.

*Table 2*

**Correspondence of accounts from enterprise economic security costs accounting ***

| № | Contents of business operations | Correspondence of accounts | | Initial documents |
|---|---|---|---|---|
| | | Debit | Credit | |
| 1 | 2 | 3 | 4 | 5 |
| **Costs of establishing economic security system** | | | | |
| 1 | Personnel searching costs | 92.*na* | 661 | Work completion certificate |
| 2 | A single social contribution has been calculated | 92.*na* | 651 | Summary statement of deductions to the Funds |
| 3 | Premises searching costs | 92.*na* | 685 | Work completion certificate |
| 4 | Costs of equipment, computers, that will be used by enterprise security service | 152, 104 | 631 | Act of delivery and acceptance, Work completion certificate |
| | | 92.*na* | 131 | |
| 5 | Costs of an outside organization involved in establishing economic security service | 92.*na* | 685 | Work completion certificate |
| 6 | Other costs associated with establishing enterprise economic security service | 92.*na* | 20, 22, 372 | Work completion certificate, Checks, Accounting certificate |
| **Costs of maintaining economic security service staff** | | | | |
| 1 | Calculating the basic and additional salaries of the staff | 92.*nb* | 661 | Working hours record sheet, After-payment sheets |
| 2 | Calculating a single social contribution | 92.*nb* | 651 | Summary statement of deductions to the Funds |
| 3 | Calculating depreciation of technical means for ensuring economic and staff security | 92.*nb* | 131 | Statement of charging fixed assets depreciation |
| 4 | Reflecting costs associated with advisory recommendations for personnel's skills | 92.*nb* | 685 | Work completion certificate |
| 5 | Reflecting costs of exchanging experience in the field of economic security | 92.*nb* | 372 | Certificates confirming speciality and obtained skills |
| 6 | Reflecting costs of staff training for improving their skills | 92.*nb* | 685 | Work completion certificate |
| 7 | Costs of maintaining public transport vehicles for security service activities | 92.*nb* | 205, 131 | Checks, Work completion certificate, Travel itinerary form |
| **Costs of creating economic security database** | | | | |
| 1 | Depreciation deductions for software used by the service | 92.*nc* | 133 | Statement of charging intangible assets depreciation |
| 2 | Costs of purchasing special literature used in employees' practical work | 92.*nc* | 109, 11, 127 | Act of delivery and acceptance |
| 3 | Depreciated costs of books, office literature, and literature used by the service | 92.*nc* | 133, 131 | Statement of charging intangible assets depreciation |
| 4 | Internet services costs | 92.*nc* | 685 | Work completion certificate |
| 5 | The cost of software maintenance services | 92.*nc* | 631 | Work completion certificate |

*Continuation of table 2*

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| 6 | Other costs associated with the activities of information security staff | 92.*nc* | 661, 651, 91 | Accounting certificate, Working hours record sheet, After-payment sheets, Summary statement of deductions of Single premium insurance |
| **Other costs associated with activities of economic security service** | | | | |
| 1. | Costs of engaging the services of auditors, audit firms, lawyers, controllers, experts | 92.*nd* | 685, 66, 65, 683 | Work completion certificate, Working hours record sheet, Summary statement of deductions of Single premium insurance |
| 2. | Representative costs | 92.*nd* | 372, 66, 65 | Calculation of representative costs, responsible person's report |
| 3. | Services of external auditors in external environment monitoring and verification of counterparties reliability | 92.*nd* | 685, 631 | Work completion certificate, service notes on cost efficiency |
| 4. | Payment for the services of representatives of the public authorities | 92.*nd* | 683 | Service notes on cost efficiency |
| 5. | Cost of purchasing stationery, containers | 92.*nd* | 22 | Act of delivery and acceptance, Write-off certificate |
| 6. | Cost of keeping information confidential | 92.*nd* | 685, 683 | Service notes, Accounting certificate |
| 7. | Cost of utilities used for maintening security services | 92.*nd* | 685 | Accounts |

**Sources*: [2, 7, 9, 10]

### 3. Reflecting economic security costs in the enterprise management reporting

In accounting, documentary confirmation is a basis for recognizing transactions related to economic security costs. It is worth creating a mechanism for costs documentary regulation, as they are a source of enterprise's economic benefits. This mechanism shall provide the procedure for determining and spending economic security costs using documentary confirmation. It shall be fixed in the administrative documents of the enterprise, such as: manager's orders or instructions. Such documents shall include number of responsible persons involved in performing economic security service objectives, the purpose and expediency of carrying out its activities, etc.

The formation of cost estimate is a special element of accounting, because not all economic security costs can be documented (negotiation costs, counterparty audits). This cost estimate is calculated on the basis of approved allowable amounts of costs in the section of enterprise economic security. It consists of establishing responsible persons for the actual write-off. Documentary confirmation is the following:

– Statement of actual costs incurred, indicating the date of actual write-off, as well as the measures related to it;

– Costs incurred certificate is an internal document confirming the financial security work performed and the amount of cash incurred, and also including a date and a responsible person;

– Accounting note is a document that records the date of measures with the specified amounts and correspondence of the transaction accounts.

Developing internal management reporting forms, such as "Consolidated statement of

enterprise economic security costs accounting" and "Statement of analytical accounting of enterprise economic security costs" is justified. A more detailed study of cost deviations from the planned or allowable amounts in terms of economic security costs will give "Control statement of economic security costs by articles".

For management accounting at the enterprise it is necessary to develop a plan of carrying out measures (control, checking) for economic security with indicating terms, the subject of these measures, as well as responsible persons.

Keeping the suggested forms of accounting registers will create an environment of complete information for carrying out analysis of enterprise economic security costs.

**4. Controlling economic security costs**

Control is one of the functions ensuring enterprise economic security. At all stages of the enterprise activities, the main issue is cost, which in turn requires constant improvement and organization of its control.

Since, economic security of an enterprise is defined in [2] as a set of measures that facilitate improving enterprise financial stability, we come into the conclusion that controlling economic security costs is a mechanism for preservation and multiplying resources that provide enterprise financial stability.

The system of internal control of economic security costs provides distinguishing the following organizational and methodological components: style and basic principles of control, organizational structure of the enterprise, interconnection among departments, distribution of powers among employees, and the procedure for reporting (financial, tax, statistical), its accessibility to users, availability of control services at the enterprise (audit committee, internal audit, economic security service) [7].

Internal control is an element of the enterprise economic security, which makes it possible to verify the expediency, efficiency or legitimacy of its business operations.

An efficient functioning of control in the system of enterprise economic security is achieved with following the basic principles - specific rules applying to all types of control activities of the enterprise:

– responsibility (indicating that each employee of the enterprise economic security service for the improper performance of his official duties (control functions) must bear administrative and disciplinary responsibility);

– timeliness (obliges each control procedure executant to inform about his activities including risks and deviations in time, because in case the information is not submitted to a higher level of control in time, the deviation consequences can increase. Because of this an object gets another meaning of investigation in this direction that will cause meaningless of conducting control);

– complexity (efficiency will not be achieved when control attention is focused only on a relatively narrow range of objects);

– staff skills (involving subordinates in the formation of goals and providing training and retraining for increasing their skills level);

– integration (causes considering control in correlation with other elements in a single management process. When solving specific tasks related to control, it is necessary to create appropriate conditions for closer cooperation of employees from different functional areas);

– sharing responsibilities and duties (duties and responsibilities should be shared in such a way that no employee bears responsibility for the task as a whole. The functions should be shared between several employees in order to avoid abuse and for efficient control).

Using control in the enterprise economic security costs management, a set of measures is carried out in the interest of protecting business activities against internal and external negative economic risks [8]. In turn, it allows the enterprise to:

– ensure sustainable economic development;

– achieve strengthening of the control system by forming effective accounting of financial flows;

– develop and implement a system of continuous monitoring of deviations from the planned indicators of business activities results.

The enterprise control environment affects the economic security and its business activities efficiency. There are organizational and

methodological components of the control environment, such as : organizational structure of the economic entity; sharing responsibilities and powers; procedure for preparation of financial statements; existence and peculiarities of organizing work of enterprise economic security service, audit committee, internal audit service.

## Conclusions

Enterprise economic security is a degree of its protection against external and internal factors that allows stable activities and sustainable development and mostly depends on a well-organized management system. The functioning of economic security system is accompanied by many problems, a partial solution of which is possible due to the use of a suggested subaccount "Economic security costs" in the accounting. This will facilitate finding necessary data and using information to manage economic security costs. In addition, we suggest different forms of internal management accounting registers, which using will allow accumulating information on enterprise economic security costs for conducting analysis and control in this area.

The results of the conducted research show that under current management conditions, a correct estimation of enterprise financial activity is necessary not only to owners and management, but also to state bodies and competitors. The latter is mostly interested in the negative aspects of the financial situation, because they focus on weakening competitors' positions in the market. To prevent this, it is necessary to conduct control measures directly during enterprise activities, as well as to take measures to ensure enterprise economic security in time. Controlling of enterprise economic security costs is not solely the prerogative of any one department, service, or group of individuals. It must be maintained and followed by the whole internal structure of the entity.

## Prospects for further research

The further research works can be devoted to making revision and suggesting advanced approaches to analysing enterprise economic security costs. The organization of accounting and forming documentation of enterprise economic security costs affects control quality. Not only methods and measures of control but also its goals, directions and objectives require further improvement and specification. The prospects of further scientific investigations are also improving of analytical control procedures, formation of measures for implementing control results and developing particular methodological decisions.

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# CLASSIFICATION OF FACTORS DETERMINING THE NECESSITY FOR SEARCHING OF A PARTNER WITHIN INNOVATIVE ACTIVITIES

**Abstract**. In the article the authors substantiated the connection between the indicators of innovation activity efficiency and indicators of innovation cooperation in the course of innovation processes. The importance of research into the problems of forming systems of interaction in Ukraine has been proved. The advantages for the formation of systems of interaction in innovation, the goals of the formation of systems of interaction in different temporal dimensions and the principles of cooperation have been identified. The analysis of factors for the establishment of interaction, their grouping by a number of features was conducted. The authors have formed a system of factors for establishing interaction based on the concept of the value of establishing interaction. The system of factors covers the following five groups: cost property, information and communication, quality and market. Being set forth forcibly, the group of cost and property factors form the cost of interaction, while the groups of information and communications technology, quality and market factors guide the cost of interaction between the participants of the interaction system within innovative processes. The authors of the study justified the need to identify a separate new group of factors as well as the types of relationships of the selected factors with the factors grouped according to the traditional features of classification. For formation of the administrative decision concerning participation in the system of interaction in innovative processes subjects shall substantiate system of factors on functional aspects of implementation of innovative activity, define importance of each of them for achievement of the purposes of innovative process, as well as estimate power of influence of each factor on the determined criteria. Once the benefits and threats from participation in the system of interaction have been identified, the subject of innovative activity shall justify the decision regarding the innovation form. While carrying out the research, general scientific methods as well as methods of theoretical / applied innovation were used. In order to undertake the research, the authors involved general scientific and special principles, techniques and methods of scientific knowledge applied within the field of innovation management, in particular: semantic analysis, comparative analysis and method of systematization; grouping terms, factor analysis and synthesis, abstract-logic method.

**Key words:** innovation activity, interaction, innovative cooperation, interaction building factors, partners.

## Introduction

Ensuring the economic development of the state is to a large extent achieved by high innovative activity of business entities, revival in the market of investment and innovation capital as well.

In the framework of modern languages, innovation is becoming more complex as the course of innovation processes accelerates,

consumer demands become higher, besides, more and more dynamic and natural resources are being exhausted. In order to be successful while carrying out innovation activities, the participants are not forced to compete for the attention of consumers, but rather to join powers with a view to obtain extra benefits from the conjoint implementation of the innovation process stages.

Consequently, the level of efficiency of innovation processes is determined by the level of interaction between different market participants within innovation processes.

Formation of the management decision on refusal of independent implementation of innovative activity in favor of joint actions with partners is carried out on the basis of the analysis and estimation of certain system of factors which cover a complex of conditions and parameters of implementation of innovations. The list of factors is objective and the power of their influence on the adoption of an informed management decision depends on the specific conditions of the assessment.

Globalization and the emergence of economic development opportunities through partnerships has had an impact on quantitative innovation performance as evidenced by the data presented in Fig. 1. For the period from 2012 to 2018, the share of innovatively active enterprises involved in innovative cooperation in Ukraine has increased by 40 %.

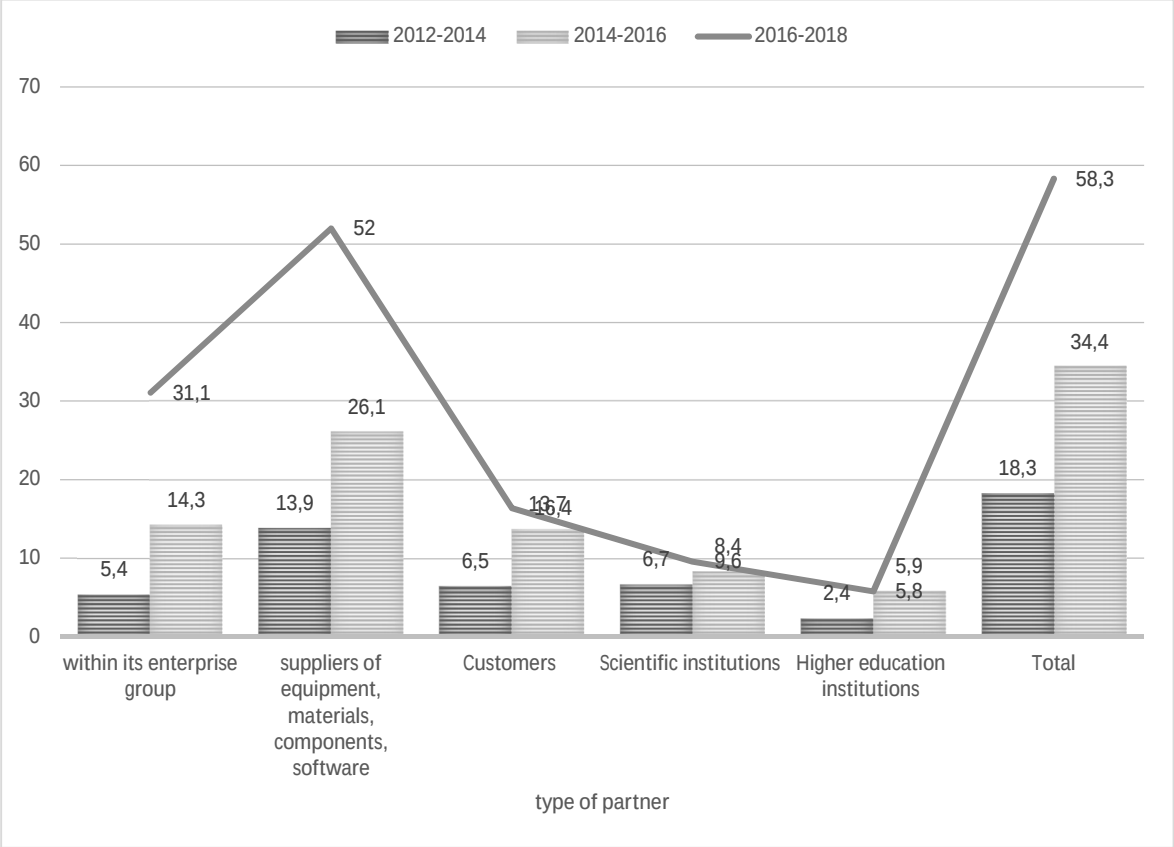


*Fig. 1. Share of innovatively active enterprises involved in innovative cooperation by type of partner ( % of total number of innovatively active enterprises in the relevant group) **

** Developed by authors on the data of [Scientific and innovative activity in Ukraine, 2017, 2018]*

The largest share of partners represents suppliers of equipment and materials, their share in 2018–2016 grew by 38.1 % over the analyzed period, constituting 52 % of the total number of innovatively active enterprises. Increase in the share of scientific institutions as partners during 2018–2012 occurred by 2.9 % (or a third), higher education institutions – by 3.4 % (more than twice).

Thus, on the one hand, we can state the fact of growing interest in the building-up of innovative

cooperation. However, another conclusion is the low level of partnership with those market participants who develop cutting-edge technologies and offer developments at the initial stages of the innovation process.

Accordingly, it should be determined which factors prevent the expressed interest from being transformed into practical cooperation.

**Analysis of recent researches and publications, problem statement**

There is a number of scientific works written by national scientist that are devoted to the study of factors influencing various aspects of innovation activity. In particular, many authors refer to the research of factors affecting the indicators of efficiency and effectiveness of innovation activity throughout Ukraine. In particular, A. I. Yashkina [Yashkina, 2013] researched and ranked the factors influencing the efficiency of innovation activity of Ukrainian enterprises. The author identified the following factors that determine the effectiveness of innovation activity of enterprises: the cost of scientific and technical works, the cost of innovation of enterprises.

Skiba M. [Skyba, 2011] substantiated the factors of decrease in innovation activity of industrial enterprises. The author divides such factors into two groups: institutional / legal factors and financial factors. The most significant factors that have led to a decline in innovation activity include a decline in the volume of financing and expenditures for the implementation of state programmes, an imperfect institutional and legal environment, gaps in legislation governing legal relations in the area of innovation and contradictions that lead to legal conflicts, a decline in international cooperation activities, restrictions on participation in international programmes, in particular, the EU's 7th Framework Programme, etc.

A. F. Morozov and M. I. Shumovetskyi [Morozov &Shumovetskyi, 2016] highlighted the main factors of the state innovation policy affecting the development of innovation activity at the enterprises of Ukraine. The authors marked down the factors of the scope of scientific work, the number of scientists and organizations carrying out scientific researches, the amount of funding for innovative activity, the share of innovatively active industrial enterprises. These factors can be attributed to quantitative parameters that determine innovation activity.

O. O. Maslak and K. O. Doroshkevich [Maslak&Doroshkevych, 2012] laid special emphasis on positive and negative factors influencing innovative activity of Ukrainian enterprises. In particular, technical-economic, legal, organizational-administrative, social-psychological factors are referred to negative ones, while globalization processes, presence of innovative research institutions, existing forms of ownership, microsystem of innovation infrastructure and territorial factor are referred to positive ones.

V. P. Miklovda, K. I. Latynin, A. H. Fialkovskyi [Miklovda&Latynin& Fialkovskyi, 2019], having carried out their classification, investigated the factors of influence on the development of regional economy as a synergistic system. The authors pointed out the antecedent, current and forward development factors at the stages of the system functioning.

O. O. Zakharkin [Zakharkin, 2013] has developed groups of factors of negative influence on innovative activity of the domestic enterprises. Thus, such factors were divided into the group of endogenous factors and the group of exogenous factors of influence. Financial factors are attributed to two specified groups of influence.

Semenova V. G. [Semenova, 2017] devoted a research to the factors of negative influence on development of innovative activity. The author highlighted such negative factors as limited sources of funding, significant costs of implementing innovative projects and a high level of economic risk.

Poliakova Yu. V. [Poliakova, 2018] identified the factors of innovation activity throughout Ukraine, the key of which represent the level of development and application of innovation potential.

It is necessary to mention that in the researched works the factors of adjustment and building-up the interaction within innovative

processes remain poorly studied. Hryha V. Yu. [Hryha&Bohdan&Isakova, 2014] in his works studies value of the factor of small business in innovative processes and its interaction with other participants of the market in terms of innovative activity. Factors of development and issues of adjustment of interaction between business partners are investigated in works of Chukhrai N. I. [Chukhrai& Kryvoruchko, 2008], as well as factors of adjustment of interaction are divided into solving ones (important reasons) and facilitating ones (environmental reasons). Hirna O.B. [Hirna, 2006] singles out the factors of interaction within supply chains through the factors of utility for the partners. Pushkar A. I. [Pushkar & Kurbatova, 2013] described the key factors influencing the processes of formation and development of interfirm relations, having grouped them as follows: external factors, internal factors, factors of compatibility, and factors of consistency.

Factors of development of interaction between institutional environment and innovative entrepreneurship in Ukraine are highlighted by I. Prylutska [Prylutska, 2014]. Such factors of interaction include political and legal, scientific and technological, innovation, economic, socio-demographic, cultural and mental factors. I. Prilutska also identified the most influential institutions of innovative entrepreneurship development in Ukraine: the state, innovation infrastructure and investment intermediaries.

Fernández-Esquinas, M., Pinto, H., Yruela, M. P., Pereira, T. S. [Fernández-Esquinas, M., Pinto, H., Yruela, M. P., & Pereira, T. S.,2016] are researching the factors of interaction between universities and firms. From the firm perspective, the authors consider three groups of leverage. The first group concerns the so-called structural elements of the firm, such as its size, operating years and sector of activity. The second group of factors covers the importance of the strategic search for the firm, while the third group relates to the opportunities available to firms to establish relationships with the academic sector. These may be referred to as 'situational factors' as they concern the social and economic structure of the firm. Networks and trust between agents from different sectors are important factors that influence university and industry linkages.

P. Anzola-Román, C. Bayona-Sáez and T. García-Marco [Anzola-Román, Bayona-Sáez & García-Marco, 2019] investigate the factors for successful collaboration in three areas of the innovation process that are of huge importance (i.e. R&D, production development and commercialization of innovation). In the research and development phase, intra-company collectivism and teamwork were the factors that contributed to the success of overall innovation development with an external partner. At the stage of implementation, the authors highlight the factors of exposure and permeability through building relationships and communications with external subjects, while the factor of focusing on their clients as well as allocation resources for building their loyalty are the key features at the stage of commercialization.

S. Hosseini, A. Kees, J. Manderscheid, M. Röglinger and M. Rosemann [Hosseini, S., Kees, A., Manderscheid, J., Röglinger, M., & Rosemann, M., 2017] identify such factors as strategic alignment, cultural factors and human resource management factors that influence the success of innovation collaboration.

## Purpose and tasks of the research

In the given research the purpose is set to substantiate and form the system of factors which are being analyzed and estimated by domestic subjects of innovative activity at building the interaction within innovative processes.

In order to achieve this goal, the authors identified and grouped the factors of interaction, as well as determined the interrelationships between different groups of these factors.

## Methodology

The methodological basis for this research is being formalized by the classical provisions of economic theory, general scientific methods as well as methods of theoretical and applied innovation. In order to carry out the research, the authors follow general scientific and special principles, techniques and methods of scientific

cognition in the field of innovation activity management.

Semantic and comparative analyses as well as systematization method have been used for theoretical substantiation of the factors of interaction; grouping method and factor analysis method have been used for development of classification of factors, analysis and synthesis for generalization of the role and place of the factors of interaction within the processes of innovative development. The method of structural and logical modelling is used to build a scheme of general sequence of making managerial decisions.

For drafting the conclusions and theoretical synthesis of the results of the conducted research the abstract logical method was applied.

The application of the above-mentioned methods and techniques allowed for elaborating a comprehensive approach to the study. The implementation of this methodology is consistent with the requirements of the classification codes for scientific and economic research.

The described methods provided for carrying out the research of theoretical and applied fundamentals of economic development on the basis of implementation of innovations, therefore are coordinated with the O block Economic Development, Innovation, Technological Change, and Growth, within O1 'Economic Development' and O12 'Microeconomic Analyses of Economic Development'.

The proposed provisions and approaches are based on the study and generalization of the fundamental provisions of the theory and practice of innovative processes, so the selected methods are being mentioned in the O3 block Innovation, Research and Development, Technological Change, Intellectual Property Rights within O31 'Innovation and Invention: Processes and Incentives'.

Justification of approaches and drawing the conclusions in the framework of the present research are being performed by a set of methods specified in the block D Microeconomics, namely the justification of managerial decisions on joint innovation activities D7 'Analysis of Collective Decision-Making', D70 'General'**.**

Identification and systematization of the interaction factors within the innovation processes allows business entities to ensure the benefit from development potential, thus the methods applied relate to the D2 block 'Production and Organizations' and D25 block 'Intertemporal Firm Choice: Investment, Capacity, and Financing'.

**The main material**

In the methodological regulations on innovation statistics in Ukraine [Methodological provisions on statistics of innovative activities, 2015], active cooperation with other enterprises or organizations within the innovation projects is referred to as cooperation on innovation issues or innovation cooperation. According to the requirements of these regulations, entering into contacts without having evidenced the joint activity shall not be deemed as cooperation.

In the framework of the research, the concept of “interaction within innovative processes” shall be understood as a set of joint actions (relations) of subjects of innovative activity while creating, mastering, using and distributing the innovations focused on the improvement of efficiency and performance of innovative process.

The essence of interaction is manifested in the fact that the subjects coordinate their interaction within the processes of innovation activity management, while the particular result of each of them does affect the behaviour of the other participant and the innovation process as a whole. Such active relations influence the dynamic result of innovations, creating an integrated system, while interacting with each other as well as with the external environment.

Interaction within innovations may unite direct or other types of competitors, and competitive relations are possible when the resources remain within one system of creation of an innovation. Thus, an interaction of three types emerges [Brykova, 2006]:

– competition as a process of permanent competition between manufacturers, which stimulates their innovation activity;

– creation of innovation and production networks aimed at the transfer of information and technologies through building of informal links, cooperation and partnership of innovation market participants;

– a transaction that represents the exchange of goods and services, primarily technological, being carried out between economic entities.

The goals of interaction building are acceleration of processes at all stages as well as optimization of the result of efforts.

The participants in the systems of cooperation are those who can offer the necessary parameters of cooperation and meet the established criteria and goals of the innovation process. Interaction participants (partners) are representatives of various spheres of activity, legal entities or individuals, their associations (buyers, suppliers, competitors, sellers, consultants, customers, investors, contractors, etc.) as well.

Fig. 2 shows the conceptual basis for the interaction building within innovation processes at the strategic, tactical and operational management levels.

The decision-making regarding the need to engage in joint activities in terms of innovation is to be attributed to the strategic management level. The strategic level also includes the procedure for linking the goals and objectives of different partners in different temporal dimensions.

Cooperation is preceded by a mandatory analytical phase required to identify the benefits and threats of participation in a partnership. This monitoring is performed individually for each entity based on its own innovation performance and potential. However, a list of driving powers (factors) may be typical and justified aiming to improve the efficiency of innovation management.

When substantiating the expediency of transformation of an independent subject of innovative activity into a partner within the system of interaction, it is appropriate to apply the concept of the usefulness of building cooperation.

In the process of building interaction between participants in the framework of innovation activities, the keystone principles of interaction marketing shall be focused on (fig. 3).

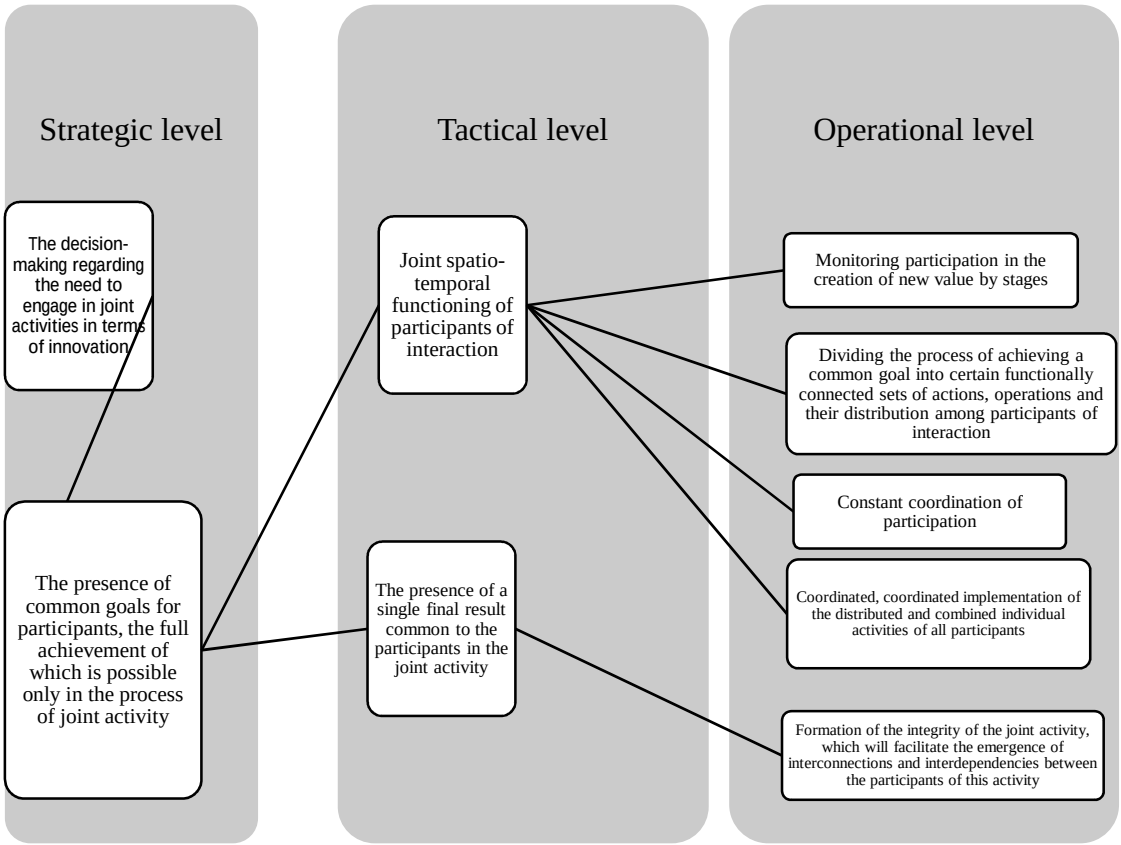


*Fig. 2. Conceptual basis for the interaction building within innovation processes**

** Developed by authors*

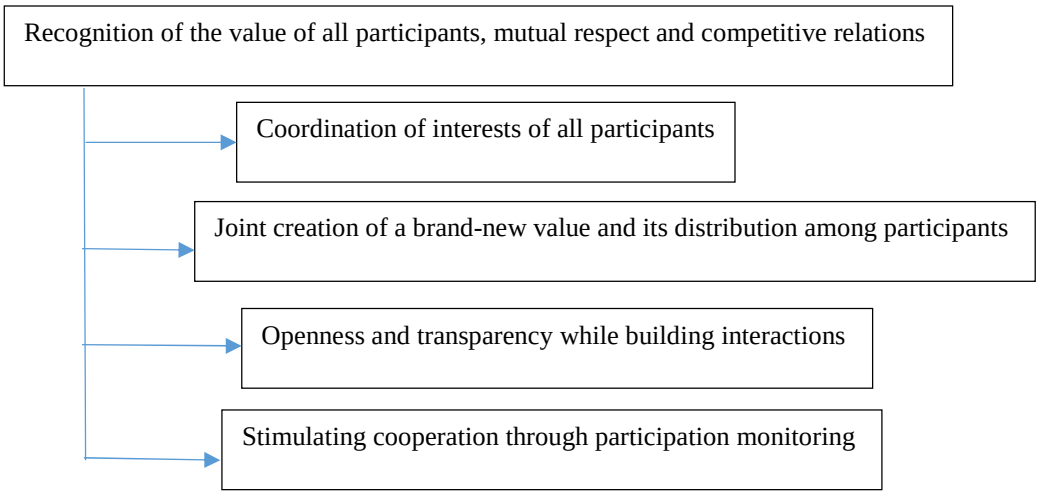


*Fig. 3. Principles for Building Cooperation on Innovation Issues**

** Developed on the bases of [Sviridova, 2013]*

Factors are a condition, a driving force, the cause of a process, determining its nature or one of its main features [A great explanatory dictionary of modern Ukrainian, 2005]. Correspondingly, the factors of interaction are the driving forces of the formation of actions or other active relationships that facilitate the determination of joint activities within innovative processes, ensuring their success, consistency and efficiency.

Table 1 provides the classification of interaction building factors according to a number of shared features.

*Table 1*

**Characterization of the cooperation building factors within innovative processes by groups of attributes**

| Attribute | Types | Comments | Examples of factors |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| Place of origin | Internal | Are being formed in the internal environment of a subject | Qualification of employees |
| | External | Are being formed in the external environment of a subject | Level of competition in the innovation market |
| Type of influence | Positive | A factor has a positive impact on the result of the innovation process | Availability of own patents |
| | Negative | A factor has a negative impact on the result of the innovation process | Lack of access to sources of raw materials |
| Direction of influence | Direct | A factor directly affects the flow and outcome of the innovation process. | Number of consumers-innovators on the market |
| | Indirect | A factor indirectly affects the flow and outcome of the innovation process. | Consumer income |
| Management opportunities | Manageable | The effect and magnitude of a factor may be changed as a result of an action | Resources used |
| | Unmanageable | The effect and magnitude of a factor may not be changed as a result of an action | Credit resource cost |
| | Partly manageable | The effect and magnitude of a factor can be slightly altered as a result of a targeted action programme | Cost of the resources used |

*Classification of factors determining the necessity for searching of a partner within innovative activities*

*Continuation of table 1*

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| Source of knowledge | Objective | The effect of a factor arises and exists regardless of the characteristics of the person making the management decision | Company market share |
| | Subjective | The effect of the factor is manifested in connection with the individual features of the person making the management decision | Brand awareness |
| Duration of influence | Permanent | The effect of a factor is permanent | Company location |
| | Discrete | The action of a factor occurs when the conditions of its action are being repeated | Resource price |
| | Non-recurrent | The factor has only affected once | Types of statutory activities |
| Source of formation of the factor that causes the need to find a partner in the innovation activity | Cost | The effect of a factor is determined by the amount of expenditure | Cost of innovation |
| | Property | The effect of a factor is determined by the availability and volume of tangible and intangible assets | Amount of own fixed assets for implementation / production of innovative products |
| | Information and communication | The effect of a factor is determined by indicators of information support and communication provider | Distribution channel maturity |
| | Quality | The effect of a factor is defined by indicators of management quality, business processes and production | Level of enterprise management efficiency |
| | Market | The effect of a factor is determined by the parameters of the state and dynamics of the innovation / innovation market itself | Development of innovation infrastructure |

** Developed by authors on the basis of [Khimchenko, 2013; Zharovska, 2015; Yashkina, 2013; Prylutska, 2014]*

The direction of action allows the grouping of factors into external and internal factors depending on the environment in which they occur. The external environment is the force that occurs outside the subject and affects its activities. The external environment includes other subjects of the market and a set of state and interstate institutions, conditions that operate and create the environment of the subject of innovation. It is divided into the macro, meso- and micro environment.

V. B. Ivanova [Ivanova, 2017] considers the following to be the factors of macroeconomic development influencing the innovation activity: factors characterizing the general economic level of development; factors characterizing the level of industrial development; factors characterizing the level of labour market development; factors characterizing the level of scientific and technical sector development.

A. M. Khimchenko [Khimchenko, 2013] considers organizational structure (owners, management, employees) and internal situational factors (finance and accounting, resource provision, personnel factor, production factor, product and process development factor, marketing) as internal environment factors.

In terms of the nature of impact, factors can be divided into positive (stimulants) and negative (distimulants), which do not significantly affect the innovation process.

The factors of resistance to innovations, which can be attributed to negative factors, are

considered in detail by Popov S. A. [Popov, 2012] in his work "State management innovations of mass character: systematization of resistance factors". The author systematizes such factors according to the features that relate to innovation, the authority and the key types and ways to support the process of their implementation, current and innovative activities as well.

Since 2007 the survey of innovative activity of enterprises and organizations is carried out with the help of a special EUROSTAT questionnaire. This survey allows for the identification of data on innovation cooperation with scientific, educational institutions and enterprises. Observations according to Form No. 1NN-Survey on the innovation activity of an organization (enterprise) for the relevant period provides data on factors that hold innovation activity [Methodological provisions on statistics of innovative activities, 2015].

Considering the direction of impact, factors can be divided into direct and indirect ones. Most commonly, the factors of direct influence include quantitative and qualitative indicators and parameters of functioning of internal environment of an enterprise and factors of external microenvironment.

Zharovska N. Yu. [Zharovska, 2015] considers measures of direct regulation of innovative development as factors of direct influence, while institutional regulation of innovative development of enterprise as indirect factors.

According to the sources of knowledge regarding the nature of the factors, the latter can be divided into objective and subjective.

Subjectivity of factors arises in connection with the manifestation of the subject's ideas about the cause of the issue, feelings, beliefs and desires of the subject. Objectivity of factors is confirmed by the fact of its independence from the subject. The objective factors include the state of the environment, geographical position, natural and climatic conditions of innovation activity, while the subjective factors include scientific potential, economic situation, and human resources. The main objective factors include: the gap between scientific and technological base of production; economic ineffectiveness of innovations; irresponsiveness of scientific and design centres to the practical needs of production; lack of personal interest of certain groups of researchers and workers towards innovations; imperfection of management and marketing methods; failure of the education system to meet modern requirements of training researchers and managers of production; shortcomings of legal protection of intellectual property. The subjective factors are as follows: lack of adequate comprehension of the development prospects of the keystone spheres of human activity; disregard of theoretical knowledge; vacancy of mind; rejection of innovations; fear of risk [Voronkova, 2008].

In terms of duration, the factors are divided into those that have a one-time effect (non-recurrent), those that permanently (permanent) and periodically (discrete) affect the process and the result parameters.

The factors of development of cooperation between institutional environment and innovative entrepreneurship in Ukraine are highlighted by I. Prylutska [Prylutska, 2014]. In particular, this author identifies the following factors of interaction as political and legal, scientific and technological, innovation, economic, socio-demographic, cultural, and mentality ones.

Sticking to the basic principles of interaction referred herein, it was proposed that the factors that make it necessary to find a partner in innovation shall be grouped as follows:

1. Cost
2. Property
3. Information and communication
4. Quality
5. Market

The cost factors cover those factors that are directly generated by the costs of the innovation process stages and can be measured in terms of money.

The cost factors include:

- innovation costs;
- borrowing costs (borrowed money);
- cost of used resources;
- opportunity of resource mobilization;
- lack of funding from external sources.

According to the Instruction on completing the State Statistical Observation Form No. 1-Innovation, the concept of "innovation costs" provides for the definition of costs associated with

research and development / design works; the production of a prototype; laboratory and market testing of innovative products; technological preparation of production of innovative products and the promotion of products on the market and their subsequent distribution.

Financial resources may be allocated to innovation activities in the form of borrowed funds, funds received for irrevocable use, funds received for the performance of a specific order, as well as in the form of the company's own resources. In connection with high risk of innovative processes cost of their financing is rather high. Besides, immaturity of the domestic financial market as well as its instruments lead to considerable complications for industrial enterprises while using of external sources, therefore, for financing of innovations the Ukrainian subjects benefit from, mainly, their own means.

Besides, it makes sense to identify factors related to the volume and availability of property of the innovation subject. Assets are not only means and objects of labour but also an element of relations in which assets participate in the innovation process and create added value that can be used in the following innovation activities, i.e. intangible assets. The common elements that form property are divided into two groups: tangible and intellectual capital. Tangible capital arises from the interaction of fixed assets and working capital as well.

The group of property factors includes:

· Lack of own fixed assets (current assets) for implementation / production of innovative products,

· lack of intangible assets (patent, copyright, design rights, trade secrets (know-how), trademarks, service marks)

· lack of basic and auxiliary research equipment.

For development of innovative processes and building the interaction systems necessary conditions are sufficient volume of information maintenance: formation of system of an information exchange between the organization and external environment and implementation of modern information systems. Information and communication factors shall build-up cooperation with counterparts of an enterprise, the established circle of strategic consumers, distribution channels, etc.

The informative and communicative factors are as follows:

· scope of information and technology;

· scope of information on the markets;

· immature consumer base;

· distribution chain maturity;

· market database parameters for the market as a whole and for its individual customers;

· level of the internal and external communication systems;

· level of brand awareness within the market as well as among market participants (reputation of the enterprise, customer base, commitment of consumers, order portfolio, franchise agreements, license agreements).

Quality factors are the technologies, methods and processes that contribute to the efficiency of innovation activities of an enterprise through quality management. The quality indicators shall include parameters of products and processes of innovative activity management.

The quality factors are determined not only by the quantitative composition of the personnel, directly or indirectly related to the innovative activity of an enterprise, as well as its qualitative characteristics, i.e. a set of creative abilities, problem solving skills, leadership, entrepreneurial and managerial skills of the personnel. Thus, quality factors referred herein have many common features with the factors of formation of intellectual capital of the subject of innovative activity. In the framework of a perspective of increase in efficiency of innovative activity as a complex classification of factors of intellectual capital management was carried out by H. O. Shyvanenko [Shvydanenko, 2016].

The quality factors that create the need for collaboration include:

· lack of work force;

· manufacturing experience;

· insufficiency (lack) of the research base;

· enterprise management performance level;

· supply chain performance;

· level of collective knowledge of employees of the enterprise, their creative abilities, opportunity to solve issues, leadership qualities, entrepreneurial and managerial skills;

· level of cross-functional cooperation in research and development;

· expertise in the innovation marketing.

Thus, the following are the market factors:

· number of professional intermediary agencies (venture capital companies, marketing and advertising agencies).

· innovation infrastructure development;

· market competitiveness level;

· innovation products demand;

· innovation demand emerging.

Fig. 5 demonstrates a schematic representation of the interrelationships between the identified factors of the necessity to find a partner to carry out an innovation processes. The affiliation of individual factors to the classification groups justified in Table 1 is also highlighted.

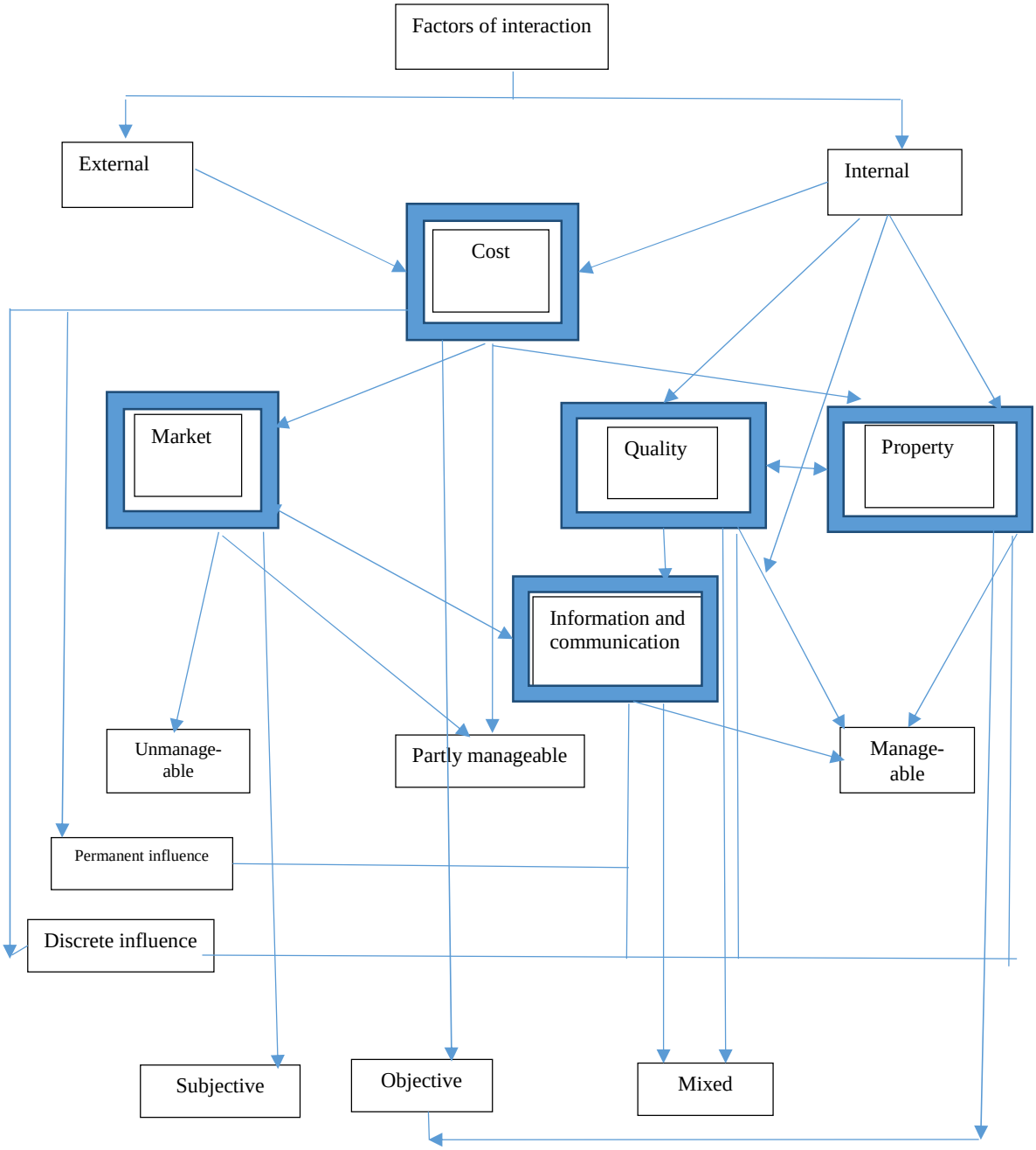


*Fig. 5. Schematic representation of the interrelationships between the identified factors of the necessity to find a partner to carry out an innovation processes **

** Developed by the authors*

In particular, cost factors shall be attributed simultaneously to the factors of the internal environment (features of innovation activity within the enterprise, innovative product of the enterprise, innovation management system) as well as to the factors of the external environment (rate of credit resources for financing, level of profitability of the internal market of bonds/ shares). Yakovleva-Melnik N. developed recommendations for managing cost factors to manage distribution of foreign innovative capital depending on the phase of his "cycle of life" [Yakovleva-Melnik, 2019].

The cost factors are closely related to other factors and affect other groups of factors. The size of expenditures on innovations determines the level of quality factors, the level of security of the subject's property and completeness of information support, the establishment of communications with other market counterparties as well. Petrovych, Y. [Petrovych, 2019] convinces in its work the importancevital socially – economic and production tasks, reasonable investment support for project activities, proper staff training and retraining.

While the cost factors can be categorized unambiguously as objective factors of interaction, the quality, market and information and communications technology factors are either mixed (depending on the valuation methods) or being represented as subjective ones.

We have developed the classification of interaction factors based on both existing grouping features, having supplemented it with new ones. The new feature "a source of the factor formation" allows to consider various functional and resource aspects of innovative activity in the most complex way. The groups of factors by sources of formation were singled out, as well as the presented scheme of interrelations shall form the basis of the mechanism for establishing cooperation between innovation subjects.

For the formation of interaction within innovation processes, subjects shall justify the system of factors on the functional aspects of innovation activity, determine the importance of each of them for the achievement of the goals of the innovation process, and evaluate the power of influence of each factor by the determined criteria. The general sequence of formation of the system of factors to substantiate the need to find a partner within innovative processes is shown in Fig. 6.

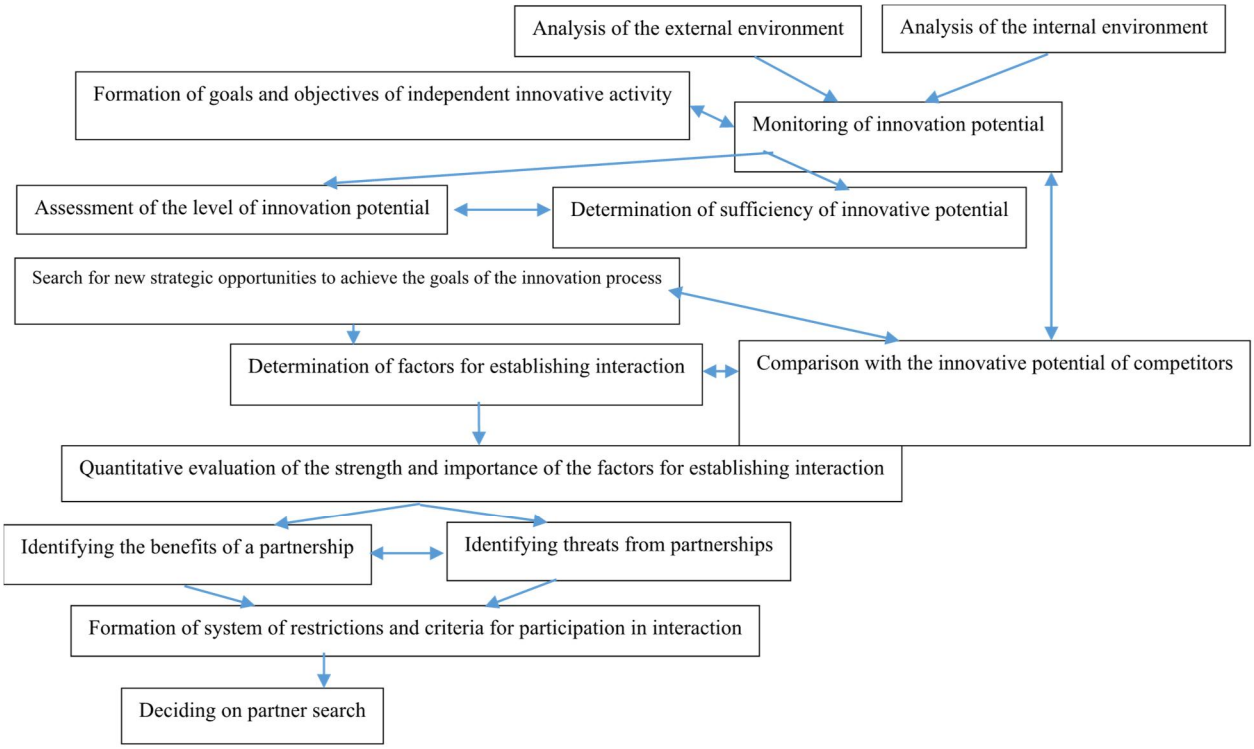


*Fig. 6. The place of factors of establishing interaction in innovation processes **

** Developed by the authors*

Having taken into account the nature of decisions regarding cooperation building, it is important to stress the assessment of the features of the external and internal environment in order to identify the strategic opportunities and threats of the innovative activity subject.

The monitoring of the subject's innovative potential shall provide the top management with information on the enterprise's innovative potential as well as the methods and opportunities for it to become more sophisticated and effective. According to the results of the monitoring of the innovative potential of the enterprise, it is possible to develop an acceptable strategy of innovative development of the enterprise, with the help of which the goals and mission of the enterprise are to be achieved in the course of the implementation of the innovative potential.

The monitoring of innovation potential shall be seen in the context of the strategic opportunities that an enterprise has to offer to identify real opportunities for independent innovation activities.

The results of monitoring of the innovative potential of an enterprise provide grounds for making a decision on independent achievement of innovation development goals or the need to find a partner. Available scope and quality of resources, researches concerning the information on competitors, a market conjuncture and technological development of an enterprise are key criteria for the corresponding economic decision-making.

## Conclusions

The factors of cooperation between subjects that are considering joint innovation activities' implementation have been suggested to be grouped according to a certain number of characteristics. The identification of these classification features should contribute to a better understanding of the mechanism of innovation cooperation.

The authors have profoundly considered the rationale for the "source of origin" identification. According to this criterion, all factors are divided into five groups: cost, property, information and communication, quality and market.

The cost factors are being determined on the basis of parameters of the cost of implementation of individual stages and the process as a whole. The property factors are being grouped based on parameters of provision of the subject of innovative activity with tangible and intangible assets. The information and communication factors are formed on the basis of parameters of information support of the subject and parameters of communication base for building relations with market participants. The quality factors which are considered while establishing interaction, are defined on parameters of quality of performance of particular processes within a business model used by the subject, and quality of initial resources needed to carry out an innovative activity. The market factors are defined by parameters of a condition and development of the market environment for development and commercialization of innovation.

The identification of the benefits and risks resulting from the participation in the innovation subject cooperation system shall be followed by a quantitative assessment of the power and significance of the factors. This is what the following research by the authors will be dedicated to.

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# EFFICIENCY OF THE ORGANIZATION OF THE GOVERNMENT SERVICE AND ITS IMPLEMENTATION IN THE PUBLIC GOVERNANCE SYSTEM

**Abstract.** The issues of efficiency and rational organization of the civil service as an object of research of domestic and foreign scientists and practitioners, international non-governmental organizations are considered. Key factors of influence of the global and national social environment are analyzed with the emphasis on their influence on the level of effective functioning and construction of the civil service system. The criteria of openness, transparency, professionalism, efficiency and modernization for establishing ways of adaptation of national state institutions to European standards and improving the level of efficiency of public administration are evaluated. The main problems are revealed in the article and some aspects of forming of adaptive state administration which efficiency of functioning will provide growth of capacity and consolidation of strategic positions of economy of Ukraine will be offered, will increase opportunities for social requests of the population. On the basis of the defined systematic methodology for this research and selected methods and tools, some aspects of forming a system of criteria that can objectively evaluate and improve the effectiveness of the functioning of the public service in the public administration system are proposed.

**Key words:** government, public service, efficiency, criteria system, assessment approaches and methods, international performance indices.

## Introduction.

Solving the existing problems of organizing an effective civil service is recognized as one of the most important factors for the successful implementation of political, economic, social and anti-crisis programs of any state. Growth and depth of problems before different states in the period of increasing risks and crisis phenomena of national and global nature become evident and additionally form problems in the system of rational and effective organization and functioning of the state apparatus. In these circumstances, the problem of improving the efficiency of the civil service system becomes especially urgent .

The activity of the whole system of state power in developed countries is oriented on democratic values, among which the protection of human and citizen's rights and freedoms, creation of conditions for economic and political freedom, as well as ensuring the proper level of well-being of all citizens are foregrounded. Practice has proven that an effective public service objectively solves all these and other problems of social, social and economic nature, providing competitive advantages of the modern state at the global level.

From a public point of view, a civil service in any state individually must ensure the effective and stable activity of all public administration, which is entrusted to it in accordance with the defined tasks, functions and powers. This system should be transparent, guarantee the rule of law, approve effective mechanisms of public control over the activities of the authorities. In a generalized sense, the effectiveness of the organization of the public administration system is determined by different criteria, since they aim to reflect the state of different aspects in its activities. In order to evaluate the public administration

system, this requires a special set and methods (specific methodology) for the synthesis of criteria among themselves. This issue is especially relevant for developing countries, including Ukraine, which actualizes such a field of applied research.

**Formulation of the problem.**

The rational and effective construction of the civil service system of Ukraine is the basic condition for the implementation of the declared socio-economic transformations, which can be carried out by means of an adequately formed to the real conditions complex of state means and mechanisms. Their most comprehensive application in practice ensures the fulfillment of the objectives of public service efficiency. Highly professional and rationally organized civil service is capable of ensuring democratic, legal, effective and efficient public administration. Contemporary Changes in the Target Vertical of Public Administration Actualize the Issues of Developing and Introducing New Ideas and Approaches to Ukrainian Practice.

**Problem definition**

The construction of an adequate state-of-the-art system of public administration, individual state institutions and civil service structures in Ukraine is in the process of exploration, and therefore the question of determining the effectiveness of public administration is unresolved, which opens a wide space for analytical research.

**Analysis of the latest publications.**

The scientific developments on the problems of building an effective civil service system raise the question of determining the basic legislative and regulatory frameworks for the rational construction and functioning of the civil service system. In theoretical developments of scientists, state and public-public institutions find expression numerous, sometimes diametrically opposite in content, formulation of the main categories, concepts and terms related to the development of systematic tools for the practical implementation of public administration. Different approaches to solving existing problems are presented in the works of Ukrainian and foreign public administration experts.

Numerical works on the basis of different criteria components provide an analysis of the quality, rationality and effectiveness of managerial activity in state institutions and organizations. Research and analytical reviews compare existing and new national and regional indicators of a particular institution in the civil service. The conclusions are drawn that the effectiveness of the administrative process and in the public administration is increasingly reduced to the successful introduction of innovative management technologies.

The effectiveness of managerial activity in the civil service system by national scientists is generally defined as a socio-economic category, and its measurement is reflected through the result of the management realization of professional activity, the use of personal, social and professional potentials by individual leaders, employees, etc.[1]. In scientific researches it is substantiated that the basic principles of ensuring the effectiveness of managerial activity in the public service system and, accordingly, the criteria for its evaluation are such components as complexity, cross-cutting, humanization, democratization, compliance with state requirements, taking into account the individual approach.

**Results of the research**

The organization of the civil service in Ukraine is currently governed by the Law of Ukraine “On Civil Service”, the basic provisions of which are introduced numerous changes in order to increase the efficiency of the civil service institute. Dynamic changes in the strategic guidelines for the development of the state will change the view of the effectiveness of the activity of state bodies. Therefore, new views on the structure of the state administrative vertical are emerging, new criteria of competences and technologies for determining the quality and effectiveness of decision-making in the public service system are being formed. The objectivity of defining the criteria for the effectiveness of the civil service system and the existing problems, in our opinion, lie in the plane of a rather complicated formalization of individual indicators into the system of efficiency.

The problematic nature of the methodological nature and the inconsistency of the application of the criteria and methods of performance

evaluation is due to the fact that efficiency as an evaluation category covers the issues of selection and implementation of the management process, the results of which can be obtained in a rather remote period. In the parameters of assessing the level of effectiveness of managerial activity in the civil service system, in our opinion, it is obvious, in our opinion, that the criterion value of institutional stability and the dynamics of expedient and effective administrative changes should be taken into account more. The basic performance criteria justify the competence of public sector personnel and the independence of the public service from political influence. However, in our view, these criteria should be inward-looking and take into account public appraisal judgments formalized in one way or another.

From the point of view of the purely economic efficiency of state institutions, the flexibility and stability of the tax system, which is expressed in the indicators of tax evasion, are crucial. The criteria for this evaluation group of public administration should also include rational changes in the structure of public spending and transparency of legislation, which is important for internal and external investors. For the sake of argument, let us say that the World Bank uses similar criteria to evaluate the effectiveness of management activities in different countries of the world. Undoubtedly, criteria for taking into account the opinion of the population and the accountability of public authorities are taken to determine the effectiveness of the public administration system of this international institution; political stability and lack of violence; the efficiency of the government and the effectiveness of the fight against corruption.

The World Bank Economic Criteria Group is interconnected with approaches to the set of social performance assessment criteria. In order to form adequate for the individual countries, it is recommended to take into account the degree of conformity of the directions, content and results of management activities of bodies and officials with the parameters that are reflected in the legal status of the body and individual position.

In most developed foreign countries, similar indicators of efficiency and effectiveness are the basis for evaluating the socio-economic performance of the public sector. The basis of the evaluation processes is based on the fact that the system of criteria of efficiency lies in the coordinates of spending of budget funds. That is, the evaluation system is constructed in such a way that the selected indicators make it possible to obtain a comprehensive assessment of the effectiveness of the functioning of public authorities.

In international practice, a special analytical method for assessing the effectiveness of the activities of state bodies, called “functional review” [15]. Let us also point to the development of the concept of Balanced Scorecard (Balanced Scorecard), which has become quite widespread in business structures. Some Public Administration Effectiveness Conclusions Conclude the Possibility and Feasibility of Using Some of its Elements in Public Sector Organizations [17]. Similar is the tableau de bord (Tb) tool that is used in France to interpret combined cause and effect relationships of financial and non-financial indicators to measure the performance of individual large business entities. The ability to use this tool to determine the effectiveness of government is linked to its methodology, which provides the ability to integrate strategic and operational indicators into one structure and coordinate specific measures to achieve the targets.

In the subject area of development also use the Prism of efficiency. It is believed that this concept allows you to focus as flexibly as possible on different levels of problems: a particular business process or improving the effectiveness of a business unit. In order to assess the effectiveness of a public authority, it may be considered to enable it to identify important components of strategies in the general public administration system.

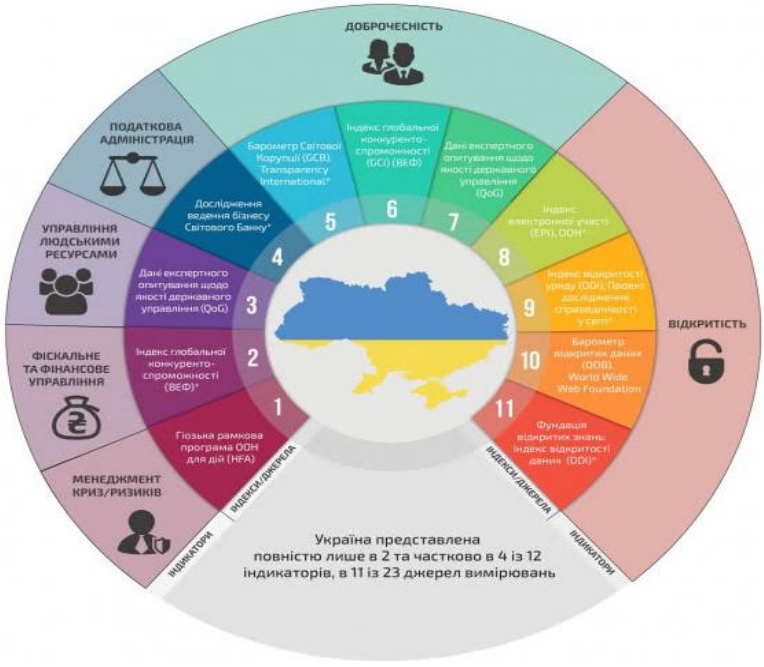
In Ukraine, the evaluation of the activities of public authorities is based on the provisions of the Cabinet of Ministers “Some Issues of Evaluation of the Work of Central and Local Executive Bodies”. This provision provides a system of indicators based on statistics on the economic and social development of the national economy. Additional criteria in the system of determining the effectiveness of public administration are the criteria set out in the Cabinet of Ministers of Ukraine “On Approving the Concept of Application of the Program-Targeting Method in the Budget Process” [14]. These regulations define the quantitative and qualitative indicators that characterize the results of the implementation of the budget program, which allows to show the

efficiency of use of budgetary funds, the ratio of results achieved and the costs.

To compare national approaches to performance evaluation, we will outline the international conceptual framework of evaluation and analytical systems. For example, the International Civil Service Effectiveness Index (InCiSE) was developed and tested in 2017 with the support of the University of Oxford, the Institute for Governance and The International Civil Service Effectiveness – InCiSE. The index includes an assessment of the main functions and attributes of the civil service in the 31st country, of which Ukraine is not included (Picture 1).

For the sake of visibility, we will present the Civil Service Performance Index, based on the systematic basis of the Ukrainian government (picture 2).


*Picture 1. The International Civil Service Effectiveness (InCISE)*




*Picture 2. The International Civil Service Effectiveness (InCISE)*

We believe that the proposed tool for assessing the effectiveness of the civil service should be adapted to use in Ukrainian practice. On this basis, it is possible to build a national civil service evaluation index, which will provide more objective indicators of the performance of ministries and central executive authorities.

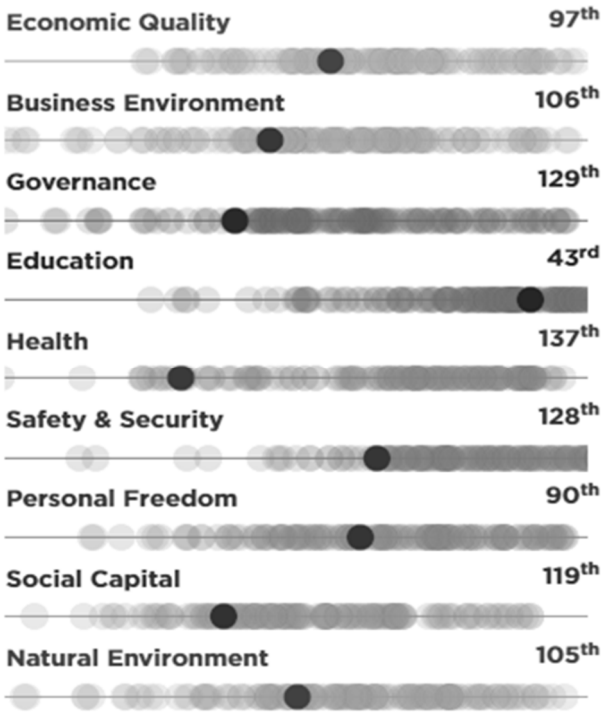
Indicators of the Global Competitiveness Index of States in terms of such category as influence of government bodies in terms of such category as government effectiveness presented at the World Economic Forum [33]. In 2019, Ukraine was ranked 85th among 141 countries. The components of the category "government effectiveness" are the criteria of "transparency of public policy making" (104th place), "public sector activity" (72nd place) and "burden of government regulation" (62nd place).

Low ratings indicate the performance of the state apparatus.

The efficiency (effectiveness) of the functioning of public administration is related to ensuring the social welfare of the population. As an example, we will cite the results of the global survey Social Development Index (American non-governmental organization Social Progress Imperative and Deloitte Company) evaluated these criteria and determined that by the level of social development among 146 countries of the world, Ukraine in 2018 occupies 64 position (Picture 3).

Securing the well-being of its citizens is the primary task of the government of any state. Here is a global welfare rating calculated by the methodology of the British think tank The Legatum Institute. This index (The Legatum Prosperity Index) in 2018 showed that Ukraine ranked 111th among 149 countries. At the same time, analysts say that the well-being of countries is estimated on the basis of the results of polls of citizens in the following key categories: state of the economy and social sphere, adjusted for other additional criteria (picture.4).


*Picture. 3. Index of social development of Ukraine by individual components by method of Social Progress Imperative*




*Picture 4. Ukraine's welfare index by major categories by The Legatum Institute*

Based on the key components of this rating (the level of economic development and, accordingly, the security of the social sphere), we will analyze the gross domestic product (gross national product, national income indicators) obtained within macroeconomic parameters. It is the main macroeconomic indicator that characterizes the socio-economic development of the country. The dynamics of this indicator embodies the inflation index, the unemployment rate, external and internal government debt, foreign investment and others. Macroeconomic results reflect the tendency and dynamics of the functioning of the economic system, formed on the basis of state regulation and management of different sectors of the national economy, their level of balance. That is why the GDP indicator is the basic one for characterizing the efficiency of public administration.

Here is the gross domestic product of Ukraine from 2014 to 2018 (Table 1), nominal GDP of Ukraine from 2014 to 2018 according to World Bank and IMF data (Table 2) and nominal GDP of Ukraine from 2014 to 2018 per capita (Table 3).

The Ukrainian economy is developing at a rather slow pace, which shows GDP. Many factors influence this situation. For example, according to the IMF, high corruption consumes up to 2 % of GDP annually in Ukraine. The slow pace of economic development in Ukraine is generally of an internal nature, where high levels of corruption, events in the East, rising inflation, rising NBU discount rates cause low investment attractiveness of the state. Absence of a strategy of economic development of the state, imbalance of governmental institutions have a direct impact on the nominal GDP of the state (Table 2).

Table 1

**Gross Domestic Product of Ukraine from 2014 to 2018 (million UAN)**

| Year | Nominal GDP (in actual prices) | Real GDP (in 2018 prices) | Difference |
|---|---|---|---|
| 2014 | 1566728 | 1365123 | -201605 (-12,9 %) |
| 2015 | 1979458 | 1430290 | -549168(-27,7 %) |
| 2016 | 2383182 | 2034430 | -348752(-14,6 %) |
| 2017 | 2982920 | 2445587 | -537333(-18,0 %) |
| 2018 | 3558706 | 3083409 | -475297(-13,4 %) |

The overall absolute figures for the slow rise or fall of GDP directly affect its importance for each individual citizen of the country (Table 3).

The cited GDP per capita figures should be recognized as one of the most problematic for the Ukrainian social and social environment. In our view, they may be recognized in Ukrainian practice as the most objective criteria for evaluating the performance of public institutions and the general government. As an example, let's say that the 2018 report by The Heritage Foundation's Index of Economic Freedom on GDP and GDP per capita is ranked 138th among 184 countries in the world.

*Table 2*

**Nominal GDP of Ukraine from 2014 to 2018.**
**(GDP in US dollars – according to the World Bank and IMF search at http://www.worldbank.org, http://www.imf.org**

| Year | Million UAN | | Million dollars USA | |
|---|---|---|---|---|
| | sum | change | sum | change |
| 2014 | 1566728 | +111797 (+7.7 %) | 131805 | -51505(-28.1 %) |
| 2015 | 1979458 | +412730(+26.3 %) | 90615 | -41190 (-31.3 %) |
| 2016 | 2383182 | +403724(+20.4 %) | 93270 | +2655(+2.9 %) |
| 2017 | 29822920 | +599738(+25.2 %) | 112154 | +16884(+20.2 %) |
| 2018 | 3558706 | +575786(19.3 %) | 130832 | +18678(+16.7 %) |

*Table 3*

**GDP per capita**
**Nominal GDP of Ukraine from 2014 to 2018 per capita**

| Year | UAN | | USA dollars | | Population (thousand) |
|---|---|---|---|---|---|
| | sum | change | sum | change | |
| 2014 | 35834.0 | +3845.3 (12.0 %) | 3014.6 | -1015.7(-25.2 %) | 43722 |
| 2015 | 46210.2 | +10376.1(+29.0 %) | 2115.4 | -899.2 (29.8 %) | 42836 |
| 2016 | 55853.5 | +9643.3 (20.9 %) | 2185.9 | +70.5 (+3.3 %) | 42668 |
| 2017 | 70224.3 | +14370.8 (25.7 %) | 2640.3 | +454.4(+20.8 %) | 42477 |
| 2018 | 84192.0 | +13967.7(+19.9 %) | 3095.2 | +454.9(+17.2 %) | 42269 |

**Conclusions.**

The dynamics of Ukraine's GDP and other indicators above show that in recent years the state of the national economy has been characterized by a recession. The main reasons should be considered the action and signs of internal factors influencing the economic system of the country, ie the entire system of public administration. The indicators show periods of deep and long recessions. Such recessions cause significant losses to the economy and coincide with the unsuccessful reform of state institutions, inefficient construction of the government apparatus, which in practice should be reflected in the synthesized indicator of "public administration efficiency". In order to objectively evaluate the effectiveness of the whole system of public administration, it is necessary to take into account formalized indicators of the state of the national economy with their correction to the indicative components of international concepts of rating.

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