

ISSN 1895-9911

# PNAP

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SCIENTIFIC JOURNAL OF POLONIA UNIVERSITY  
PERIODYK NAUKOWY AKADEMII POLONIJNEJ



**23 (2017) nr 4**

**CZĘSTOCHOWA 2017**

Periodyk naukowy Akademii Polonijnej, Częstochowa, Akademia Polonijna w Częstochowie, 2017, 23 (2017) nr 4, s.147.

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ISSN 1895-9911 Print  
ISSN 2543-8204 OnLine  
Nakład 100 egz.

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Częstochowa 2017



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## Wprowadzenie

Na obecnym etapie rozwoju społeczeństwa najważniejszym zadaniem jest wychowanie osoby, dla której najwyższy ideał to jedność interesów osobistych i narodowo-państwowych. Wychowanie, edukacja, tworzenie kultury dla społeczeństwa są priorytetowymi zadaniami w warunkach globalizacji edukacyjnej i kulturowej. Właśnie tym kwestiom poświęcono aktualny numer periodyku naukowego PNAP.

Autorzy analizują kwestie myśli filozoficznych na temat dylematów życia młodego pokolenia, funkcjonowania edukacji, jej społecznego systemu zarządzania oraz integracji w przestrzeni edukacyjnej, nauczania i pedagogicznych technologii komunikacji międzykulturowej, cech lingwokulturowych w procesie uczenia się nauk humanistycznych, kursów językowych w szkoleniu zawodowym przyszłych ekonomistów, przedstawiono analizę porównawczą ustawodawstwa dotyczącego szkolnictwa wyższego w poszczególnych krajach.

Wartością łączącą społeczeństwo jest religia i rodzina.

W tę problematykę wpisuje się PNAP - Periodyk Naukowy Akademii Polonijnej, skupiający ludzi nauki z różnych kontynentów, gdzie artykuły naukowe podejmują problematykę o charakterze historyczno-kulturowym, polityczno-prawnym, ekonomiczno-społecznym, edukacyjno-zdrowotną. W PNAP występuje także dział recenzji i omówieni oraz sprawozdań.

Zapraszam do współpracy przedstawicieli ośrodków naukowych, których brak w Radzie Naukowej, praktyków, nauczycieli naukowo-dydaktycznych, doktorantów, studentów, których publikacje w PNAP, dzięki punktacji Czasopism Naukowych MNiSW oraz posiadaniu prefiksu DOI, będą czytane i staną się przedmiotem dyskusji, debat i poznania innowacji naukowych poszukiwań.

Dziękuję autorom, którzy podjęli i podejmą współpracę, zamieszczania swoich publikacji oraz szczególnie rodzaj podziękowania kieruję do członków Rady Naukowej, którzy życzliwie przyjęli zaproszenie do współpracy do współtworzenia PNAP.

Juan Campechano Covarrubias

## Introduction

At the present stage of society development, the most important task is the education of a personality whose highest ideal would be the unity of personal, national and state interests. In the context of educational and cultural globalization upbringing, education, and cultural development are the priority tasks for the society. Therefore the current number of the scientific journal PNAP is dedicated in particular.

The authors consider the philosophical thoughts about life dilemmas of the younger generation, education functioning, its social management system and integration into the educational environment, teaching and educational technologies of intercultural communication, linguocultural characteristics in the study of humanities, language courses in the professional training of future economists, etc. There is also a comparative characteristic of higher education legislation in separate countries.

And the unifying value of society is religion and the family hearth.

PNAP - the Scientific Journal of Polonia University fits in these issues bringing together scientists from different continents, whose scientific articles address the issues from the following fields: history and culture, politics and law, economics and social science, education and health. PNAP also includes the review and discussion sections as well as a report section.

I invite You to cooperate with the representatives of research centers, whom the Scientific Council lacks in, practitioners, teachers, academics, Ph.D. candidates, students, whose publications in PNAP, thanks to the scoring system of the Ministry of Science and Higher Education and having the prefix DOI, will be read and will become the subject of discussions, debates and exploration of scientific innovations.

I thank the authors who have already established cooperation and those who will do so in terms of submission of their publications. I would also like to express particular gratitude to the members of the Scientific Council, who kindly accepted the invitation to work together and to contribute to the creation of PNAP.

Juan Campechano Covarrubias

## THE PROBLEM OF ELECTION ADMINISTRATION PROFESSIONALIZATION IN MODERN PUBLIC ADMINISTRATION IN UKRAINE

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**Abstract.** The crisis of confidence in the authorities in Ukraine is largely caused by the lack of public confidence in the bodies performing public functions. Especially, it is true for election process which accumulates problems of political choice and legitimacy. In most cases, voters' disbelief in the election results and fair ballot is caused by non-professionalism of election commissions. Since the elections in Ukraine have become a permanent phenomenon, there is a contradiction between the nature of the authorities of the election commissions and lack of professionalism of the members of these commissions which otherwise would facilitate the strict observance of electoral procedures and rules. This institutional problem of the current political spheres of society leads to negative trends in political life. Meanwhile elections at all levels are characterized by the experience of Ukrainian citizens of elections participation to seek earnings during campaigns. Commercialization of the election process creates the phenomenon where political power delegated to the election commissions as collegiate bodies performing public functions to legitimize power, is executed by not professionals but politically loyal mercenaries who stand not for compliance with election law but for earnings. The solution is seen in as wide as possible professionalization of election commissions of all levels. This will improve the system of election administration, increase public confidence in the election results and eliminate the tendency to commercialize the process.

**Keywords:** public administration, election administration, professionalization, election commissions, electoral procedures commercialization

*DOI: <http://dx.doi.org/10.23856/2301>*

### Introduction

The tasks and functions of state within constitutional model operating in Ukraine are assigned to various bodies of public administration. In the context of society democratization the possibilities of different elements of civil society to perform these functions are greatly expanding. Especially it concerns the community councils both as advisory body of government organizations, political parties, and as a part of the political system. One of the bodies performing the tasks of state character and simultaneously remaining essentially self-governing part of the electoral system is the election commission. As election administration bodies at all levels they ensure the implementation of electoral procedures and have the status extremely close to the status of authority. Quite relevant is the requirement of professionalism and special training of members of the administrative bodies who carry senior administrative functions.

The problems of conceptualization and theoretical comprehension of election in terms of governance and administration mechanisms of the electoral procedures are little researched

in the modern science of public administration. It should be noted that the research achievements of some legal authors who investigated the mechanisms of legal regulation (formation of legal status of election commissions) may be considered as a scientific comprehension of the legal institutional aspects of the problem.

Today there is an objective need for theoretical comprehension and the formulation of new functions and tasks of election commissions and their changing role in the election process. It is determined not only by the need in codification of the electoral legislation, but also by considerable differences in the interpretation of election commissions' tasks in legislative acts.

### **The investigation of profesionalization problem the subject of administration the electoral procedure**

Ukraine's electoral system as a system of social relations associated with the formation of representative bodies through elections, today is not perfect. The reason for this is the existence of the following threats:

- the influence of individual officials, political parties and business groups on the election results;
- the influence on the election results from abroad;
- low level of training of the lower election commissioners, manifested in the conscious or unconscious violation of election law or their lack of ability to properly evaluate the election process in terms of electoral law;
- falsification and distortion of the will of the citizens in the post-election phase of the political process and, consequently, lack of legitimation of state and local governments.

In spite of the current system of legal regulation of election processes these threats appear in violations of electoral legislation, which adversely affects the efficiency of the process. It is the state that can prevent deepening of contradictions, as it is the institution that plays a central role in the mechanism of the election process.

The mechanisms of government administration of electoral procedures, in our opinion, are found in two main aspects. The first one concerns the organizational and legal support of the election process, and maximum simplification of the election process and procedures as well as the effort to make them understandable, transparent and economical. In doing so it is necessary to comply with the basic principles and standards of elections. The second aspect implies the formation of conscious activity and a high level of political and legal culture of the election process.

Tasks and functions of the state in the election process are imposed on election commissions, which have authority and powers to carry out their functions. The powers of election commissions are manifested in the mandatory enforcement of all the commissions' decisions by all subjects of election process; in commissions' control functions and administrative activities within certain types of elections.

V. Telipko stresses that the key role in the creation of the electoral infrastructure belongs to election commissions. The system of election commissions is a tool of civil society intended to perform these critical functions (Telipko, 2009).

At the same time, the structure of these election subjects endowed with a large degree of competence on the election process is not formed in the way provided by law on public service. This contradiction, in our opinion, under condition of lack of the mechanism of normativisation of requirements for people who perform the functions of the state, seriously

affects the efficiency of the process. Violation of electoral procedures can either distort the will of citizens or cause voters' distrust to the results of the election process due to election commissions' unprofessional performance of their duties.

As confidence in the authorities in Ukraine is a key political and legal institutional and managerial problem, the minimization of the negative consequences of unprofessional exercise of the duties by people charged with public functions becomes a key task of ensuring the efficiency of the entire system of elections administration. This is especially true of election processes that reflect the results of political choice, implement the will of the citizens and form the legitimate government. The current situation involves the frustration of voters in the election results and a fair vote made by unprofessionals in the conditions of lack of responsibility on the part of election commissions or individual members.

Modern election processes are marked by significant dynamics that are to be provided by the professional staffing component. Today political parties in Ukraine, that regularly take part in elections, are facing the problem of finding experienced members of election commissions at all levels, which often results in relying solely on those who are motivated for such work only by material factors.

Among the election commissions of all levels it is the Central Election Commission and the Central Election Commission of the Autonomous Republic of Crimea that are based on clearly defined qualification requirements for education, training and experience of their members and senior staff. Other election commissions consist of a number of citizens without restrictions on any requirements other than citizenship and residence in a particular locality. Thus, ubiquity and equal implementation of electoral law at all levels of election administration are not provided by the elections and referendum legislation of Ukraine.

Given the fact that the elections in Ukraine have become a virtually permanent phenomenon, there appears a contradiction between the nature of the powers carried by the election commissions, and the low level of professional training of the members of these commissions, which would facilitate the strict observance of electoral procedures and standards at all stages of the election process. This problem leads to a number of other negative tendencies in political life. It is particularly evident in the context of power decentralization, when the formation of local authorities may cause different legal evaluations, which negatively affect the process of legitimization of local authorities and their officials.

However, the practice of elections at all levels confirms the desire of Ukrainian citizens who have experience of participation in election campaigns to seek earnings as the members of election commissions of all levels except the central one do. The administration of electoral procedures is thus too commercialized; among the members of the commissions acting on behalf of different political subjects there are people who perform their functions in the interests of these political subjects, ignoring the rules of law and the interests of other actors.

Commercialization of the election process creates the phenomenon where political forces delegate to the election commissions as collegiate bodies performing public functions, loyal political mercenaries for which income is more important than compliance with election law. The solution can be found in professionalization of election commissions at all levels and their formation by people who have the status of civil servants. It will improve the system of election administration, increase public confidence in the election results and help to avoid further commercialization of the election process.

The analysis of foreign experience shows that there are two main implemented approaches to the formation of electoral management and administration procedures. The first

approach that emerged mostly in countries with developed democracy and has become a tradition of democratic electoral systems involves the performance of the tasks of election management and organization by public authorities (in some cases – local authorities). The advantages of this approach, in our view, are the minimization of the cost of the elections organization carrying them out by the state administration and professionalism of the subjects of electoral procedures. At the same time, the political corruption in public administration, the negative effects of other subjects' intervention in state activities, actualize the risks of illegal use of the state government officials as the administrative resource in achieving political goals.

Fairly right seems the opinion of N. Bogasheva that the advantage of formation of election commissions by the authorities is that they consist of the members having high professional level who are mostly civil servants and have the knowledge and experience of such activities. The election commission formed in that way will lack tough fight possible if including the supporters of some electoral subjects.

Formation of election commissions of civil servants may, however, affect the functioning of governmental bodies. It can be explained by a considerable number of election commissions, which distracts a significant number of officials from their direct duties and slows down the work of authorities. In addition, the government influence on the formation of election commissions can reduce the level of their independence as officials because of the temporary character of the committees and the need to return to their previous work, feel subordination to senior officials, which opens almost unlimited possibilities for the notorious "administrative resource" (Bogasheva, 2005: 535).

The second approach is implemented in most countries of the transitional type, where the development of democracy is an ongoing process. This approach implies that the public authorities are not allowed to interfere in the election process. Administrative functions, including the function of the election process organization, are entrusted to bodies formed of the citizens, who, as voters, carry out the objectives and functions of the state through the system of election commissions.

The advantages of this approach can be seen in the realization of the principle of self-government that enables civil society to organize the process of forming a government. However, the disadvantage of this alternative model of election administration is the lack of professional requirements in relation to members of election commissions as well as their large dependence on sometimes corrupted leadership of political parties, backed by powerful economic actors. This variant of system of electoral procedures management is very similar to the hidden and non-legal way of intervention in the process of forming the government, and sometimes overt dependence of individual members of election commissions on political subjects.

Ukraine has implemented some elements of both approaches: on the one hand there is a permanent central election administration body – the Central Election Commission, which is formed on the basis of quota allocation of opportunities to influence its composition between the President and the Parliament. On the other hand the electoral legislation stipulates a system of delegation of the political forces representatives to the election commissions which are sometimes not even the parties of the election process. These members of election commissions instead of performing the state's tasks fulfill exclusively the representative functions and functions of surveillance in favor of the subjects who delegated them.

The analysis of the election legislation leads to the conclusion that there are different approaches to the formation of the supreme bodies of administration and those of lower level

applied in Ukraine. Party-representative approach is implemented in organization and administration of elections to form precinct and district (territorial) election commissions, and mixed or executive-expert approach is applied to the creation of the Central Election Commission of Ukraine and the Central Election Commission of the Autonomous Republic of Crimea.

There is a paradoxical situation. On the one hand the possibility of applying a governmental or judicial approach in Ukraine has not yet been set, but the second approach to the formation of election commissions has clearly been exhausted as in actual conditions its application turns into overt political corruption. That means that the fundamental question of independence and impartiality of the election administration in Ukraine, unfortunately, is still unsolved.

In this regard, there is a need to find adequate models of election administration. This is so important because the solution of this problem determines the legitimacy of the public authorities formed within such system.

The problem of professionalization in the context of recent integration challenges in Ukraine should be considered in the complex of solving the questions of public administration reform in Ukraine. Today there is a need to solve the mentioned problem because:

1. The new standards of governance, including public governance, are being introduced in Ukraine. They are aimed to building a new system of professional public administration with its inherent features – professionalism, accessibility, quality, proximity to the customer.

2. The system of election administration that has developed in Ukraine today suffers to some extent from imbalance – on the one hand the election processes and procedures are characterized by high dynamics, legal complexity and specific organization of collective bodies. On the other hand, the performance of a significant amount of election procedures are appointed to the temporary bodies of administration created almost "temporarily" – from elections before elections, with almost any mechanism to guarantee responsibility of its participants' lawful execution of their duties.

3. The system of election commissions today is largely (according to the order of formation, and the basic principles of the organization) not able to carry out effectively its tasks imposed by the electoral legislation. The reasons include:

- The lack of an effective mechanism (described at least in one of the election laws) which would guarantee the formation of these bodies on the basis of selection according to professionalism criterion. This, in turn, directly contradicts the basic principles of accomplishment of the tasks and functions of the state, including professionals and bodies exercising public or non-public administration;

- The lack of real mechanisms to ensure continuous training of people involved in election commissions on a permanent and temporary basis;

- The lack of interest and will of the subjects of election process, including political parties that have the right to form the composition of election commissions, in professional performance of the duties of the delegated members. Moreover, there is an opposite trend when political actors encourage the misconduct of election commissions according to the interests of these political subjects. Thus, the basis of incompetence cultivated among potential members of election commissions is political corruption, which aims to achieve the objectives in election campaigns in any way including non-legal ones;

- The lack of real mechanisms of control by both the authorities and public of election commissions' activities in the implementation of and compliance with the current legislation.

Currently, there is a need in the formation of a new system of elections based on the

peculiarities of electoral legislation. Under these circumstances, we consider it necessary to carry out a radical reforming of the institute of election commissions in Ukraine, which will turn it into an effective mechanism for ensuring the legitimacy of the electoral procedures and of bodies formed in that way.

One should also pay attention to the problems of district election commissions. There is also a contradiction here. On the one hand there are quite a large number of people who in majority are the employees of budgetary institutions and have become quite professional participants in the procedures. On the other hand the dynamics of the number of violations by members of election commissions, according to long-term observations, on the contrary, increases. This is proved by the published results of the election monitoring carried out since 1998 by GO "Civic Network "Opora".

So, the problem is that on one hand there is an elaborated system of the professional and experienced electoral procedures executives, while on the other hand their professionalism is questionable because of the lack of need for constant improvement of skills and control over the development of their competences on the part of the state and public authorities.

Moreover, today the problem of organization and administration of electoral procedures goes beyond the exclusively political system or the system of election authorities. Similar procedures are increasingly used in other fields, particularly in personnel management of public authorities, institutions of public sector when positions are assumed according to the selection results and some of the specific procedures. The latest example is the election of rectors which recently were held in most higher educational institutions of Ukraine. This practice will continue to spread but the professionalism of the organizers and administrators of such campaigns is not actually confirmed by any authority.

The constant change of the statutes of elections doesn't resolve the problem. Every new election to Parliament or to local authorities is held under a new legal instrument, which means that the experience gained by the members of election commissions in the previous campaigns is virtually leveled. The way out of the situation can be the codification of electoral legislation that has long been an ongoing debate in academic and political circles.

We believe that the creation of permanent electoral administration bodies of electoral procedures to which the tasks and functions of the state during elections are entrusted will in perspective allow the solving of the staffing problem in each campaign.

### **Conclusions and suggestions**

Thus, to solve the problem of improving election administration processes there is a need to apply an integrated approach that involves the following basic steps:

1. Codification of election laws, their unification with European standards. Although in fact there are no common European standards in this area, the model of electoral system should be institutionalized. It must be based on the type of electoral system and unified vision of the main elements' functions, including the election commissions. Codification will summarize the functionality and basic procedures of the election process, minimize differences between different types of elections in functional aspects.

2. Launch of e-governance principles in the basic electoral procedures. The problem is a part of the task complex of administrative reform in Ukraine and can be solved with the introduction in Ukraine a basic concept of e-government. At the core of this cluster the existing system "Elections" administrated by the Central Election Commission, resources of



public administration and local government that has recently undergone major improvements may be involved. Forms of e-democracy which are being actively implemented in developed countries, unfortunately, are not fully developed in Ukraine. The need for the general public participation in decision-making in the public sphere is growing, but the practice of such activities is virtually absent. Let us take for example the referendum in 2000 and leveling of its results. The same is true of local referendums and initiatives that along with decentralization could become a major element in ensuring the legitimacy and real participation of citizens in managing the affairs of the state and those of local communities.

3. Application of an expert approach to the formation of election commissions according to the principles of the Central Election Commission formation. It involves the inclusion of professional experts with appropriate training, adequate experience and their well-known independence to the election commissions on the basis of consent of all social and political forces.

4. Formation of professional training, retraining and advanced training of election commission members and their certification. To solve this problem it is necessary to create a single state register of members of election commissions that apart from personal information will accumulate their experience, results of attestation, forms of training, career changes and so on.

5. The determination of the legal status of election commissions. This tendency includes the change of this category to category of civil officers with all consequences of the status – creation of special standing regulatory authorities at the central and local levels, tools to control observance by officials of the legislation on public service in Ukraine, at alternative elections.

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## THE CONCEPTUAL MODEL OF REGIONAL PARITY DEVELOPMENT OF UKRAINE WITHIN DECENTRALIZATION

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**Abstract.** The conceptual model of regional parity development in the context of decentralization is considered. It includes vision, goals, principles, priorities and mechanism for implementation of the state regional policy as the basis for the formation of a regional development strategy. The conceptual model allows achieving uniformity of economic development under conditions of decentralization and self-renewal of regions.

**Keywords:** regions, parity development, regional development, strategy, state regional policy, institutional growth, innovative growth, inclusive growth, decentralisation, public administration, local communities.

*DOI: <http://dx.doi.org/10.23856/2302>*

### Introduction

Within improving the state regional policy, the concept of regional development is offered. The concept was developed on the basis of the system approach, which allows improving of regional development strategy. We take into account the internal potential of the region, its capabilities and stability of the economic conditions preventing threats to the region's economy environment. It's the particular model of regional development and instruments of state governance of regional development.

The analysis of the socio-economic development of regions and systematization of regional development models revealed a number of problems and unrealized opportunities of regional development in Ukraine. The concept of regional development involves goals and mechanism for implementing new conceptual model of regional development. Thus, strategic goal is the identification and development of the latent potential of the region and intra-regional interdependence and consolidation.

### The concept of regional parity development within decentralization

We suggest a conceptual model of regional parity development for improving state regional policy (Fig. 1). It is identified imperatives of the model parity regional development according to the analysis of the socio-economic conditions of Ukraine. There are effects of institutional, innovative and inclusive growth.

The formulation of new strategic vision of regional development is based on the principles of decentralisation of state and regional governance. The necessity of a conceptual model of regional parity in terms of decentralization is considered. The successful implementation of the Strategy for Sustainable Development "Ukraine - 2020" means the achievement of main objective as European life standards. The effective reform of the system of regional development (public administration and regional policy) will put on Ukraine at the leading position in the world. There are mechanisms of decentralization where the local

communities will play a key role in the socio-economic, institutional and political development of the Ukraine's regions.

The objectives of the regional development are sustainable regional development through equalization and reducing disparities of regions' economic development, self-development of regions, imperatives of economic growth regions, and institutional support of decentralization for sustainable regional development state. The principles of conceptual model of regional parity development within the improvement of the state regional policy are "mutual aid", "environmental friendliness", "consolidation", "equality", "self-renewal" and "balance of interests". We consider these principles of that are correlated or enter the advanced system of principles of state regional policy within the framework of the regional development strategy in accordance with the current requirements of regional development of Ukraine and international experience, which will enable to bring the level of socio-economic development of regions to the level of the leading regions in Europe.

The conceptual model of parity for regional development within decentralization (hereinafter - Model) is a basic conceptual documents, which determines state regional policy according to external and internal conditions of regions development. The global and European trends of transformation of national economy form new vectors and patterns of economic growth of national and regional level.

The objectives of the regional development are sustainable regional development through equalization and reducing disparities of region economic development, self-development of regions, imperatives of economic growth regions, and institutional support of decentralization for sustainable regional development state. The principles of conceptual model of regional parity development within the improvement of the state regional policy are "mutual aid", "environmental friendliness", "consolidation", "equality", "self-renewal" and "balance of interests". We consider the principles which are either correlate or enter the advanced system of principles of state regional policy within the framework of the regional development strategy in accordance with the current requirements of regional development of Ukraine and international experience, which will give opportunity to bring the level of socio-economic development of regions to the level of the leading regions in Europe.

The conceptual model of parity for regional development within decentralization (hereinafter - Model) is basic conceptual document, which determines state regional policy according to external and internal conditions of regions development. The global and European trends of transformation of national economies formulate new vectors and patterns of economic growth of national and regional level.

The strategic vision of the state regional policy is solving the main problems of regional development in accordance with changes in the regional development in recent years. There are new approaches to strategic planning of regional development. The problems of regional development can be systematized in the following areas: structural and territorial development and self-development and effective management. The system and synergistic approaches of solving these problems give new level of economic growth regional economy.

The problems at the structural and economic sphere are characterized by imbalance and the concentration of economic activity and decrease of economic efficiency at the national and regional levels.

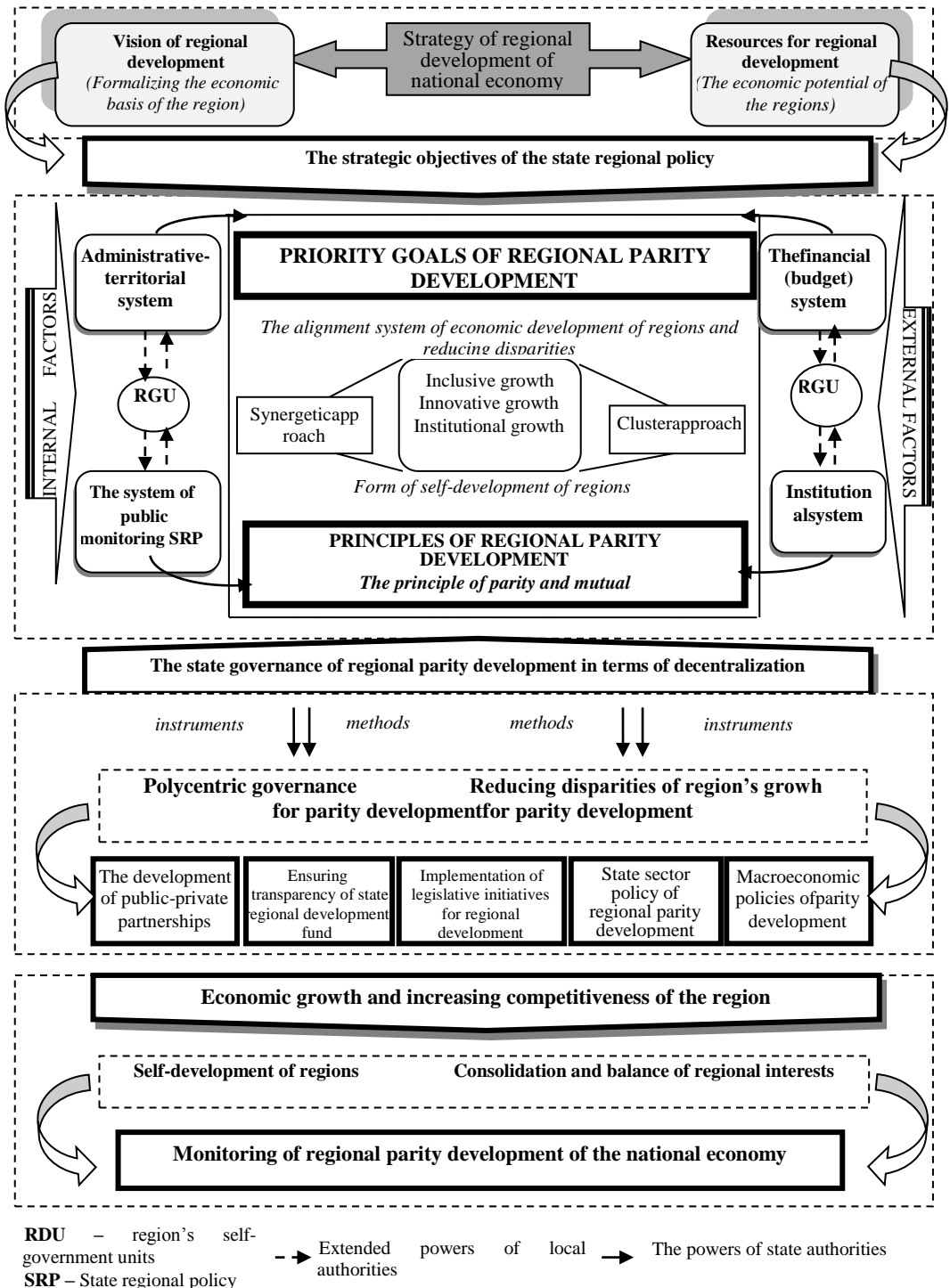


Fig. 1. The conceptual model of regional parity development in terms of decentralization

The territorial issues are characterized by differentiation of local development, which means inter-regional and socio-economic disparities of growth. In 2015, the social and economic developments of the country in terms of social cohesion in the regions considering migration are long divergent processes. The domestic incomes define social differentiation at regional level that makes the real problems with the welfare of the population.

The high territorial differentiation is defined by high rate of outflow of rural population, which leads to imbalanced structure of regional economies and their social and economic development. The increasing role of regional centers in the economic development determines the nature of further territorial differentiation of socio-economic situation in the country. The dynamic economic growth in large urban agglomerations accelerates migration from rural areas and small towns with limited potential of development.

The third area of regional problems is connected with the imperfection of the system of regional management at all levels and mechanism of self-development for achieving sustainable economic growth (table. 1).

Table 1

### The problems of regional development of Ukraine

Sphere of problems	Problems
The funding of regional policy at the level of government	<ul style="list-style-type: none"> <li>– low institutional capacity of local authorities to prepare regional development projects and narrow focus of the projects, including the renewal of infrastructure. The projects do not cover the objectives of the state strategy of regional development and regional strategies;</li> <li>– political engagement of preparation and realization of projects;</li> </ul>
The financial (fiscal) decentralization	<ul style="list-style-type: none"> <li>– complex administration of the property tax without setting exemption (each taxable sq. m);</li> <li>– lack of social standards for each of the delegated power to local authorities;</li> <li>– disparity of tax excise in different areas and lack of excise taxes of budgets of local communities.</li> </ul>
The territorial governments	<ul style="list-style-type: none"> <li>– concentration of local communities and low activity of the elections at the communities;</li> <li>- lack of long-term plans in Ternopol and Zakarpattya regions that constrain financing communities where elections were held;</li> <li>– lack of mechanism to define financial capability of local communities by state governments “Method of forming capable communities” criteria;</li> <li>– low capacity of the local communities (no additional financial capacity and authorities), the discrepancy promising plan and “Methodology of forming capable communities”.</li> </ul>

Despite the successful start of decentralization reform in the context of self-raising regions and strengthening inter-regional relations there are numerous problems, including such as imbalances and lack of consolidation of economic growth; regionsdependence on the center; infrastructure and financial weakness of local communities; lack of institutional support of local communities; degradation of rural areas; undeveloped mechanism of public control of local communities and their interaction with regional and local authorities; low financial capability of communities; low investment attractiveness of territories.

The state policy of regional parity development within decentralization should solve these issues. The aim of model is a complex system of approaches and mechanisms to ensure parity economic development of the national economy which is based on of the state regional development policy in the context of decentralization.

The regional parity development of Ukraine is based on the principles of mutual aid, environment protection, consolidation, equal development, and renewal and balances the interests of the regions. It means expanding and strengthening the rights and responsibilities of state and local authorities. These principles are convergent with the general principles of state regional policy. The implementation of models is based on the following principles: scientific basis; complexity; consistency; commitment; interdependence; integration; efficiency; adequacy; adaptability; comprehensiveness and consistency of regulations; subordination of the state strategy of Ukraine.

The task of the state regional policy for regional parity development are such as follows:

- reducing differentiation of territorial and economic development by index renewal;
- developing a system of consolidation of regional development, which is based on sustainable development and increase of the life quality and renewal economic growth at the regional level;
- the implementation of regions renewal mechanism through the use of internal resources by expanding the powers of local authorities;
- support of local governments for the effective use of the internal potential of regions by achieving inclusive, institutional innovation development of regions that enhances the quality of life in the full life environment;
- recovery of the national economy with increased social and economic relationships between the regions by establishing cooperation between economic entities of the regions;
- implementation of effective measures of state funding for regional parity development through intergovernmental relations within decentralization;
- effective institutional and economic regulations of clustering of regional development and public-private partnerships;
- regional competitiveness through implementation of inter-regional programs and projects improving the competitiveness of regions and local communities for the recovery of the economic interests of regional development;
- mechanism of implementation of the budget and tax legislation changes in the activities of state and territorial governments and local communities;
- formation of legislation which is based on basic documents of Council of Europe and the European Union in context of the state regional policy.

The basis of new vision of regional development should be implementation of principles of “consolidation” and “equal development of regions” for the achieving of parity economic development. It means a certain balance of regions system by synergy in the economic sector. There is growth of regional system at the financial, scientific and

technological, educational and intellectual, infrastructural, social, legal, economic, environmental and other spheres (table. 2).

Table 2

### The vision of regional policy in the context of regional parity development concept

	The vision of regional policy of sustainable development	The vision of the regional policy of parity development within decentralization
<b>Objectives</b>	Aligning of economic growth of regions through inter region aid	Identifying and developing the latent regions' potential and the consolidation of inter-regional relationship
<b>Approaches</b>	The approaches of management "top down"	Integrated development projects "horizontal and vertical" cooperation at the national, local and corporate levels of regional development
<b>Measures</b>	Subsidies and state aid mainly to objects of infrastructure	Public and private (at the level of business and local communities) investment
<b>Authorities</b>	State and local authorities	All levels of governments (priority of local communities)
<b>Subject of analysis</b>	Regions	Functional areas and local communities
<b>Results</b>	The competitive region involving all subjects of the development and use of the potential of the region	The regional economic system which is based on balance of region interests and local communities

The implementation mechanism of state policy of regional parity development within the decentralization involves the systematic and synergetic approach to achieve effects (inclusive, institutional and innovation regional economic growth) of regional parity development through the introduction of a comprehensive system of decentralization mechanisms as system ensured instrument.

The implementation mechanism is based on the formulation of major objectives of regional parity development by the principle of parity and mutual support. It provides the alignment of regional economic development and the reducing of disparities of economic growth through the effective forms of regions' self-development that implements parity regional development.

The objectives of regional parity development are the following:

- to achieve a steady regional development by alignment and reducing imbalances of economic development of the regions;
- to ensure the self-development of regions, providing inclusive, innovative and institutional growth of regions;
- to provide the institutional development of the decentralization as an instrument to ensure steady regional development.

The principle of parity and mutual support is implemented through alignment and reducing imbalances with a system of horizontal alignment of local budgets to increase region fiscal capacity, a system of partnership between principal-region and beneficiary-region to enhance the internal competitive advantages by creating cooperative relations, division of powers at local communities.

The principle of parity is implemented within using model of regional parity development. Also, this model is to be implemented through the principles of regional policy.

At the stage for the implementation of the objectives, principles and priorities of the regional parity development in the decentralization within the conceptual model of regional parity development the author offers a comprehensive mechanism for implementing the state policy of regional parity development through decentralization of regional development as system ensured instrument. The comprehensive mechanism provides a mechanism to ensure regional parity development which is based on the optimization model as a methodological approach, organizational and economic mechanism of decentralization for regional parity strategy.

### Conclusions

The conceptual model of regional parity development covers the main ways of regional development and measures of decentralization. The priority objectives, principles and mechanisms for achieving of regional parity development are defined. The new vision of regional development through parity regional development is considered. The principles of parity development implementation are consolidation and balance of interests. The comprehensive mechanism is based on the formulating major objectives of regional parity development according to the principles of parity and mutual support. The vision of the regional policy of parity development within decentralization is grounded upon exposure and development of the latent potential of the region and consolidation of inter-regional cooperation.

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## ESTIMATION MECHANISM OF ACTIVITY RESULTS OF HIGHER EDUCATION INSTITUTIONS OF DIFFERENT TYPES UNDER MODERN CONDITIONS

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**Abstract.** Estimation of education is gaining momentum with the entry of private institutions, change in people's attitude towards education and the changing scope for the different courses being offered. The education service can be described as a high contact, consumer and people based service.

**Keywords:** marketing research, SWOT-analysis, market segmentation education services, consumers' segment, universities innovation activity.

*DOI: <http://dx.doi.org/10.23856/2303>*

### Introduction

Estimation of efficiency of performance of higher education institutions (hereinafter – HEI) under modern conditions of educational environment is urgent from the point of view of competitiveness and importance of development of strategic solutions as to search of possibilities of probable diversification of educational activity.

### Efficiency evaluation of HEIs

At present in scientific research results special attention is paid to the problem of analysis of enterprise financial and economic activity and efficiency of its functioning (Kalenjuk, 2002; Bogolib, 2006; Niiazova, 2011). Economic reality of HEI functioning that conditions strengthening of control on the part of fiscal bodies over observation of tax discipline, introduction of statutory instruments and increased requirements to goods and services quality, respect of consumers' rights and uprising competitiveness among members of higher education market, for the purpose of achievement of maximum economic effect, promotes focusing on analysis of financial and economic activity and efficiency of key processes of HEI performance.

Thus, considering all processes providing creation of finished goods of any HEI one shall take into account that their estimation has to be focused on achievement of maximum social effect, but seeing that any enterprise's financial result is an important indicator of its performance, their estimation is urgent for achievement of maximum competitiveness level.

Financial results of HEI's activity as a state-funded organization is a final outcome of comparison of profits and deductions by special and general fund (deficit and surplus). As for private HEIs, a net profit indicator under report on financial results is a final result characterizing entrepreneurial efficiency.

Thus, for any HEI it's possible to estimate results of its financial and economic activity, but considering HEI's non-uniformity and specific nature depending on form of ownership, it's expedient to develop single approach to development of complex of parameters, which have to reflect all aspects of higher education institution's performance.

As shows analysis of domestic and foreign experience, much attention is given to all-round estimation of HEI's performance efficiency on the part of state and public organizations. HEIs are entities of external estimation in view of financial, quality and and/or quantitative indices. To increase the level of control by results of activity of higher education system entities, estimation methods are being continuously improved.

Special attention was paid to estimation of HEIs in socialistic period of development of Ukraine. There was a system of regulatory documents and control bodies, which estimated educational institutions by their level of conformity to various normative parameters, as well as influence on activity of material production (Verkhogliadova, 2005):

- economic role of higher education institutions in increasing public production efficiency;
- comparative efficiency of different forms of staff training.

Foreign scientists regard HEI's activity estimation from point of view of residual financing principle, which characterizes higher education system as one of the most attractive directions of investment development (Petrunia, 2004).

Economic essence of state HEIs is, first of all, based upon their legal autonomy.

Detailed analysis of entrepreneurial activity in a higher education institution in the most general terms allows interpreting it as a process of creation of "new combinations of resources (natural, material and technical, labor, intellectual, informational)" to achieve maximum effect and the whole economic activity of HEI under market conditions is related to entrepreneurial activity with all possible consequences (Kratt, 2005; Malkhotra, 2002).

Consequently, in our opinion, HEI's entrepreneurial activity is innovatively oriented in competitive terms, focused on increasing the degree of educational process efficiency and educational services quality as a result of application of functionality of management of key factors of competitiveness, internal process and production resources.

Activation of HEI's entrepreneurial activity led to the development of market relations in the sphere of higher education and increased competition between such distinct market segments as state-financed and private HEIs. In contrast to the private HEI's, the activity of budget institutions is characterized by:

- availability of all-round regulatory educational procedures with a large number of indicative and directive indices;
- budget planning of expenses from budget sources of financing, targeted use of funds and strict financial discipline;
- cost-based principle of budget financing that does not foresee flow of revenues from own activity results (Riabova, 2011).

In contrast to the administrative management system, management stipulates higher level of managers and subordinate employees' freedom, promoting revision of old methods of economic management and introduction of new ones, opening before HEI a larger space for provision of rational operation under market conditions and simultaneously setting new problems related to determination of qualitative characteristics of management system and efficiency of their functioning processes.

At the present stage of development of the state-funded HEIs, there are conditions, under which they are no longer seen as the institutions financed entirely by public funds. The

following stable tendency is being observed: an educational institution is regarded as an enterprise that creates and sells intellectual creations of its employees – educational services – on the market. Consequently, certain trends were seen with the real objective prerequisites for development. The abovementioned situation is related to making HEIs more independent under current legislation in the sphere of internal organizational management, implementation of financial policy, determination of main development directions. At the same time there is a discrepancy between legal and actual conditions of financing of higher educational institutions, which prevents them to take real actions to large-scale development and expansion of material-technical base only at the expense of public funds (Granovetter, 1985). As a result, HEIs actively search for and involve non-budgetary funds. Thereafter in the analysis of HEI's financial and economic activity an efficient approach is required, which takes into account its specific nature as an enterprise.

HEI's activity is estimated by way of comparing results of work by purposes and used as a feedback mechanism in taking managerial decisions. For maximum efficiency estimation has to be carried out systematically and purposefully. The system of measures in collection of information should guarantee the possibility of a purposeful and detailed analysis on the basis of efficiency indices in some dimensions (perspectives). The set of indicators should be focused on the needs of the management system and not only consist of financial indicators. The flow of managerial information should be regulated and monitored (Saliga, 2005).

Both HEI's functioning environment (external and internal) and the results of its activity can be the subject of estimation. Depending on estimation purposes of its subjects interested parties may take a position near the HEI.

Availability of various indices in HEI's final financial reporting resulted into reduction of the whole estimation process to non-formalized indices as indicators of educational institutions' activity. For this very reason at the legislative level there was an attempt to introduce a unified estimation system based upon application of ranking scores, which irrespectively of HEI's form of ownership characterize its development level and are meant for comparative characteristic of the higher education system as a whole. But the offered system of criteria ignores the depth of all economic processes both qualitatively and quantitatively, because the impact of factors of external and internal environment causes transformational changes in all links of HEI's activity.

A set of indicators is a necessary tool for building an information base for monitoring operational efficiency using the method of proper control on the activities of the HEI's economic mechanism, identification and involvement of internal reserves (growth of operating profitability, the quality of the final product) and final achievement of victory in the competitive environment.

Development of the system of indices requires systematization of data of estimation of HEI's activity results and their classification. System view requires to cover all aspects of activity according to subject of mission. From the perspective of HEI's financial and economic activity results the main task of system approach consists in detection and description of complexity of the system and grounding of additional relations, which being included into the management system make it controllable within the required limits, simultaneously having preserved such separation limits, which promote rise of the system efficiency (competitive advantages) (Pankrukhin, 1995).

Consequently, one offers to group operating indices of HEI's financial and economic activity depending on the following classification features:

- cluster of hierarchic structure of management subject:

- operative - is determined by level of fulfilment of short-term purposes that does not require complex analysis, is expressed by an absolute magnitude and is used on basic decision-taking level;
- tactical – is an intermediate level, which characterizes level of fulfilment of short-term purposes and is used on tactical decision-taking level;
- strategic – is a complex index, which reflects qualitative side of HEI's operation in achievement of the strategic purpose (mission, strategy, special policy);
  - competitiveness level:
    - financial – it shows essential properties of formation of HEI's economic steadiness and stability or financial result of activity, because it estimates economic consequences if decisions taken and is an indicator of conformity of HEI's strategy;
    - marketing – it determines availability and positioning on certain market segment of selected HEIs;
    - financial and cost-based – it reflects qualitative level of process and product (goods, services) and conditions, which provide it;
    - potential – it reflects characteristic of qualitative change of human (intellectual) capital, informational support and infrastructure of provision of permanent long-term rise of growth and development (Matviiv, 2005).
  - scope of properties under research:
    - partial – it reflects essential properties of the process, its value can be determined (calculated) in spite of other indices;
    - generalized – it reflects a set of properties and it determined by a coefficient, percent or index that is calculated by means of several indices;
  - ranking level:
    - primary (main) – it measures conformity of activity result to the purpose set;
    - secondary (additional) – it characterizes the reason of deviation of actual data from the target ones.

HEI's estimation has to be subordinated to the purpose of the use of estimation results. Thus, as a result of carried out study several approaches to estimation of HEI's activity efficiency were distinguished depending on the aim set, which reflect the whole set of views and approaches to high school estimation process:

- economic – HEI is estimated as a business entity, ignoring its high public value and social orientation; information of accounting and other financial reporting is used, where conventional financial indices are used as main criteria;
- control – it stipulates quality estimation of educational process and educational services of HEI in view of conformity to minimum governmental and regional requirements, contains indices of control procedures (licensing, certification and accreditation);
- rating – a set of procedures is used for estimation of features, which determine selection of potential consumers of educational services in the competitive environment of higher education market;
- parametric – it stipulates development and introduction of quality management system of HEI on basis of ISO 9000, estimation and certification of a higher education system.

Thus, according to the results of carried out analysis of scientific research results and studies we can assure that existing estimation methods are mainly based upon analysis of one of the factors that is the source of getting competitive advantage (of financial, scientific, technical or qualitative nature). Capability of HEI to involve internal reserves and efficient

management by competitive advantages is more efficient for formation of competitive advantages (Aleksandrov, 2006).

Therefore, the development of evidence-based methods of forming a system of performance indicators of entrepreneurial activity of the university gives you access to a high level of quality management and improvement of competitiveness of the university.

In this context plotting of an estimation profile characterizing HEI's activity degree of achievement of purposes set is of vital importance. System of balanced indices is an efficient tool of development of analytical solutions and comparison of their actual values with target reference points (Fadina, 2011).

Specific nature of the Balanced Scorecard ((hereinafter– BSC) in HEI's activity as governmental institution makes itself evident in the fact that such organizations first of all estimate social efficiency of their activity. Nevertheless, financial parameters are of great importance in estimation of conformity of expenses and degree of achievement of objectives of HEI's activity. BSC makes evident conformity of purposes under development and measures of general strategy of development, i.e. to strategic priorities and mission and helps to address the main issues: estimate activity results efficiently and implement the strategy successfully.

Functional mechanism of BSC use in HEI's activity as the system of strategy management and implementation consists in transformation of HEI's strategic purposes into the system of particular parameters of efficiency in realization of objectives.

Thus, the main objective of BSC formation consists in expression of HEI's strategic purposes through the system efficiency indices in achievement of objectives. BSC is an efficient tool not only for internal estimation (HEI's activity efficiency and transformation of its strategic purposes into certain measures), but for external – provision of information for licensing procedures, certification and accreditation.

As a result of analysis of key aspects of HEI's activity and investigation of scientific research results in this field, we offer estimation scheme of financial and economic activity results shown in Figure 1 (Obolenska, 2001).

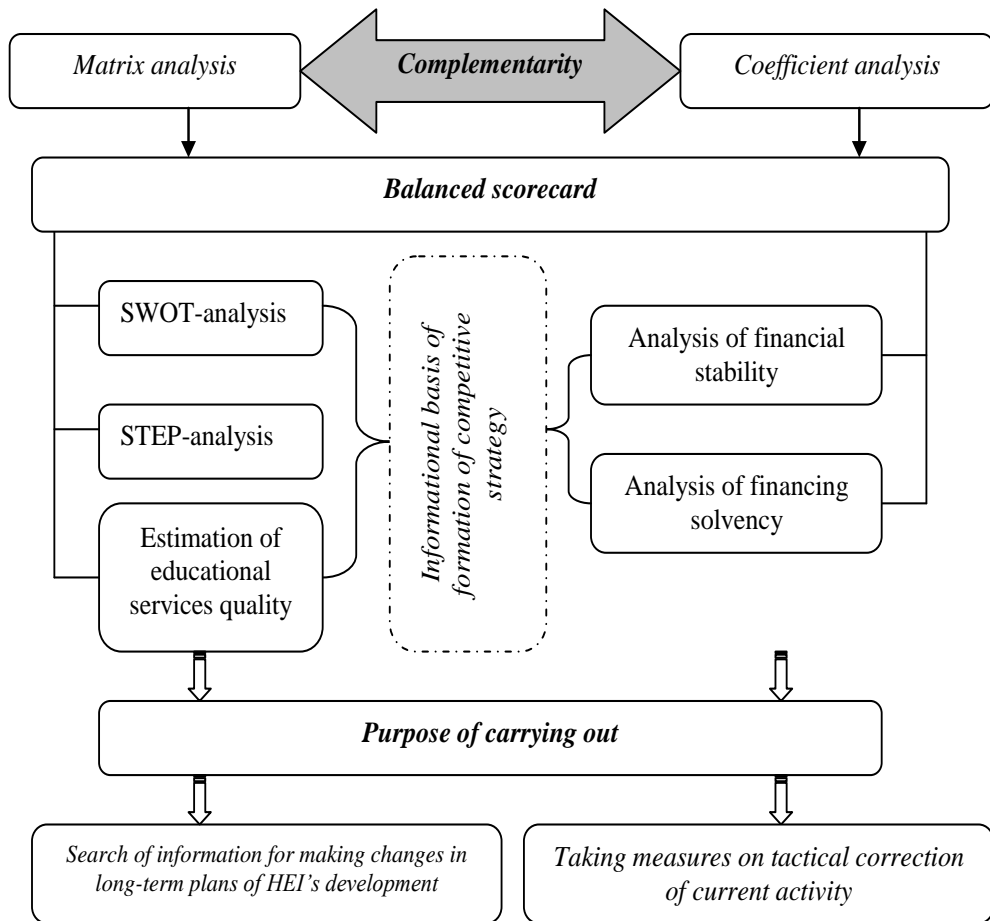
Subjects of research of portfolio analysis are HEI's internal and external environment, whose estimation is directly related to financial results of the higher educational institution's activity, because their formation is possible only under the assumption of favourable synergetic influence of all factors of micro- and macro environment.

Use of SWOT matrix in the research of HEI's activity efficiency is related to simplicity of its practical use and universality of functional apparatus and maximum output of such procedures.

Comparative estimation of all threats and capabilities allowed identifying the main «narrow» places in HEI's operation and priority of taking corrective measures in problematic areas. Mobilization of all capabilities is related to HEI's internal potential that is a significant advantage for improvement of role of the educational institution in aggravation of competitive struggle for future students' contingent and extension of specific share on the definite market segment to provide high quality higher economic education.

Characteristic of the strengths and weaknesses of the HEI, indicates the actual state of existence and some organizational deficiencies affecting the formation of the reputation of the institution. The next stage of operating environment estimation is characteristic of influence of external environment factors provided STEP matrix is used (Dainovskiy, 2009). In Kraineva R.K.'s opinion, implementation of such tool is connected to priority of social and technological factors in HEI's activity, because their target orientation is related to public

nature of the activity and introduction of achievements of scientific research results into all industrial branches and socio-economic life (Kraineva, 2008).



**Fig. 1. Estimation scheme of financial and economic activity results**  
[author's development]

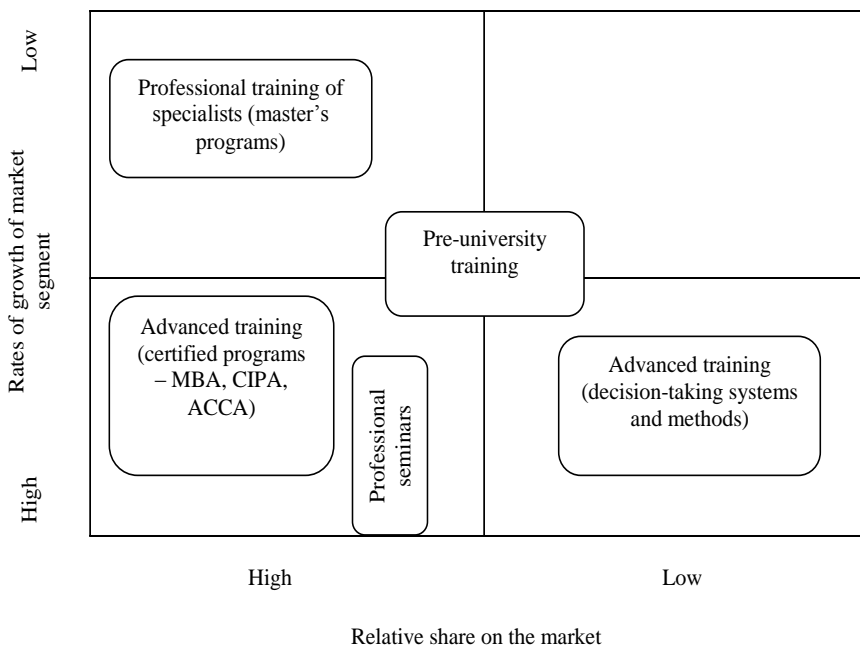
Analysis of the quality of educational services is carried out using the matrix of "market growth - market share" that allows the institution to assess its own position from standpoint of attractiveness of some educational and training programs and their position in a definite market segment, namely:

- portfolio of educational services under research includes sufficient quantity of products in attractive spheres of educational activity;
- offered educational services are sufficiently cost-efficient products that allows to develop perspective directions and put up investments into diversification of the activity;
- portfolio of educational services provides both adequacy of income and sufficiency of monetary flow;
- absence of uncompetitive service in the portfolio under investigation.

It should be noted that there are the following advantages of implementation of the offered mechanism:

- it is source of information for taking decisions on broadening or contraction of certain directions of educational activity;
- it is an important argument against emotional solution of the problem of resources distribution necessary while rendering educational service.

Consequently, let us show the actual state of the market and economic profile services provided by HEI in Figure 2.



**Fig. 2. Matrix of analysis of portfolio of HEI's educational services of economic profile**  
[author's development]

The analysis of the portfolio of services, allows asserting the correctness of the choice in formation of professional educational competence of future specialists. Positioning on the market segment with high specific share and significant growth rates is evidence of reliability of formation of supply on the educational services market that is formed under requirements of modern market environment and modern tendencies of formation of management mechanisms of socio-economic processes both on micro- and macro level. Thus, the selected strategy and appropriate tactics of HEI's governing body are absolutely justified, because implementation of such policy ensures achievement of high result in the competitive environment that is revealed through rating positions, employment indices, international cooperation indices, high scientific potential (Antoshkina, 2005).

Estimation of non-formalized indices allowed completing the list of all factors affecting formation of modern HEI's activity within the framework of national market of higher economic education. Analysis permitted to estimate the state of the rendered services portfolio through the prism of influence of external and internal factors forming HEI's stable

position and guarantee getting professional advantages in the sphere of practical competence.

Consequently, the next stage of financial and economic activity estimation is quantitative analysis using the complex of indices characterizing financial position of the HEI under investigation.

For example, A.M. Grin and A.S. Baitov, for estimation of state-financed HEI's activity efficiency offer to calculate indices of financial stability and paying capacity and M. Meier emphasizes that «for estimation of activity efficiency high precision indices in the balanced system of indices are necessary that permit to estimate cost efficiency of educational programs and financial stability of the organization» (Grin, 2005; Meyer, 1998). To our mind, it is necessary to agree with the offered approach, because these indices will reflect financial aspect of HEI's activity and enable the institution to maintain steady positions, which were estimated earlier using non-formalized analysis.

### Conclusions and suggestions

In our opinion, the most expedient is structuring the balanced system of indices with coefficients characterizing financial state of the subject of research and with elements of matrix analysis that will supplement coefficients calculated against financial indices for complex estimation of the HEI's functioning in the educational sphere. Independence of choice of indices for results estimation system assumes objectivity in identifying the true picture of the functioning of the HEIs.

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## ANALYTICAL SUPPORT AS A BASIS OF MANAGEMENT OF CURRENT ASSETS OF INDUSTRIAL ENTERPRISES

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**Abstract.** The article contains the study of the traditional system of current assets analysis and determination of peculiarities of the development of a system of analytical support of current assets management on the stage of its development. Besides, the article offers the structure of internal regulation documents to ensure consistency of analytical work. The article contains characteristics of the process of current assets planning and the practical aspects of use of certain analysis elements providing strategy for the future development of the enterprise.

**Keywords:** analysis, internal law, current assets, management.

*DOI: <http://dx.doi.org/10.23856/2304>*

### Introduction

The modern development of market relations, economic and political crisis in Ukraine and the whole world create problems, which the country inevitably faces, namely, the instability of external and internal environment, competition for consumer and product quality, increased competition, high dynamism of production, uncertainty of processes of formation and development of production factors. All these problems require a deep substantiation of managerial decisions using modern analytical methods and inevitable application of systematic analysis measures in compliance with clearly defined method that is regulated by the system of internal law documents of the organization.

### Management issues of the current assets at industrial enterprises

The traditional domestic method of analysis of enterprises current assets should be considered from a new point of view, namely, as a component of accounting and analytical support of current assets management, which requires analysis and synthesis of accounting data. In its turn, the structure of the necessary accounting support is the basis for the formation of analytical support system. The interrelation of analytical and accounting support is unquestionable, but one of the main problems of formation of analytical support is insufficient reliability and speed of getting information. Table 1 summarizes the problems of current assets management and defines methodological instruments that can serve as the basis for their solving.

The analysis directions, which are studied in the scientific works of leading economists, define general provisions of method of analysis of the current assets of the enterprise taking into account the typical management tasks. It is worth highlighting the importance of developing the analysis method that would ensure prompt, systematic and reliable collection of analytical information for the purposes of efficient management.

Table 1

**Problems of management of enterprise current assets and methodological instruments for their solution**

Management problems	Methodological instruments of solving certain problems of current assets management	Results of usage of methodological instruments in management activities
Accumulation of inventories	The calculation of index of optimal volume of inventory order	The solution of problems concerning the appropriateness of the accumulation of inventories in stockhouses or the organization of its more frequent deliveries
	Development of planned indexes: planned norm of inventories, the optimal volume of work in progress, the optimal stock of finished products	The definition of economically reasonable volume of inventory needed to ensure uninterrupted production process
Underpayment of receivables	Monitoring of the state of receivables of enterprise through the usage of operational accounting information	Increasing of the reliability level of information on the status of work with debtors that reduces the risk of default on receipts
	Calculation of the economic effect of usage of factoring for refinancing of receipts	Decline of the risk of losing of paying capacity and minimizing of the tax consequences from the introduction of factoring in receipts management
	Calculation of planned index of allowable outstanding balance of receivables for products being sold with deferred payment	The reliable assessment of the optimal terms of deferred receipts payment for debtors, taking into account the volume of sales of finished products and the duration of its turnover
Growth of professional risk in the decision-making process concerning the management of current assets	Refinement of calculation methods of financial indicators characterizing business activity and liquidity of separate assets of the enterprise with regard to modern financial reporting format and essential loads of given coefficients	Improvement of reliability and efficiency of data analysis and reduction of professional risk during the preparation of analytical reports on solving problems of current assets management
	Development of internal regulations for financial analysis and financial planning for current assets, which directed at improvement of the organization of analytical work	

Therefore, one should strive to conduct the financial analysis as a whole system, where the interrelated constituent elements of a lower order are defined that is the integral part of system of a higher level, in which economic analysis of current assets interacts with other subsystems. The systematicity of analysis, determination of its logic chain and identification of multiple internal connections are the basis of system approach, which is one of the directions of scientific knowledge.

The systematic study of the method of financial analysis of current assets was carried out in the work of D.A. Endovytskyi, who defined the basic principles of financial analysis of assets. He determined the following principles of systemic analysis: the objectivity and relevance of results obtained in process of economic analysis; the scientific validity of analysis results; the systematicity and complexity of analytical measures; the considerableness and optimality for making rational management decisions; the ratio of analysis cost and usefulness of obtained information for the interested user; the principle of identification of the leading link; the timeliness of obtainment of output analytical data; the quantitative certainty, variability, reliability, clarity and comparability of analysis results.

The most popular model of analysis stages ratio, which is based on the systematic approach, is given in scientific research of A. D. Sheremet. Despite the fact that there are the fundamental researches of analysis based on the systematic approach concerning the development of the systematic economic analysis method, there is still a number of unresolved problems. In particular, there is no unified method of analysis of current assets, which would provide the basis for a logical and consistent approach to management decisions. Basing on our own studies and achievements of leading scientists, we should mention that the analysis of the current assets, which is grounded on the systematic approach and accurate data from the accounting support, provides the company with an opportunity to solve given problems of current assets management. To build the analytical support of current assets management it is necessary to create a separate system of their analysis, which solves a number of given management problems.

Let's define the main purpose of the current assets analysis, namely: determining the signs and causes of reduction of volume or, on the contrary, of the excessive accumulation of inventories, monetary funds and receivables accounts. As previously stated, the domestic system of the enterprise current assets analysis is not perfect, so it is necessary to define the specific procedure of financial analysis and examine its instruments based on well-known methods and systems of economic analysis. The results of this research, which was based on the practical data of PAO "NPP "Smelyanskiy electromechanicheskiy zavod" (SEMZ), are given in table. 2.

The defined stages were formed, taking into account the specific features of activities of the main enterprise, operating in heavy conditions of modern competition in the field of heavy engineering in production of electric motors for rail transport. The particular characteristics of the industry in Ukraine are strict conditions of search of the finished products sales market, therefore the enterprise is forced to look for foreign partners and export its own products. The planning of volumes of the assets is a strategic issue, because it has a direct impact on amount of the prime cost and level of profitability and competitiveness of the enterprise.

The planning stage is based on the information stages and assumes the definition of general problematic issues in management of current assets, identification of factors impacting the solution of these issues and search of alternative options of management decisions or implementation of policy of drift.

Table 2

**Instruments of analytical support of management of current assets of the enterprise in terms of its stages [made by author]**

Analysis stage	Characteristics of the stage and its components	Current procedure of current assets analysis at PAO "NPP "SEMZ"	Recommended instruments for current assets analysis
Stage of analytical activity planning	Planning of analytical procedures concerning the efficiency of use of current assets	The current assets analysis was carried out at the end of the reporting year without approval of the plan of analytical procedures	Development of the plan of analytical procedures at the beginning of the reporting year, that involves the preparation of analytical reports each quarter
Information stage	Analysis of statistical information about structure and dynamics of current assets of industrial enterprises of Ukraine	Was not carried out	Construction of analytical tables, aimed at analysis of changes in composition, structure and dynamics of current assets of industrial enterprises in comparison with data of PAO "NPP "SEMZ" based on using the method of vertical and horizontal analysis
Stage of direct analysis	General production analysis of current assets	Analysis was carried out in accordance with financial statements to assess the structure and dynamics of current assets during the reporting year	Use of the method of financial ratios to calculate the liquidity indexes, efficiency of use of current assets, own current capital and subsequent assessment of their dynamics
	Planning of admissible balances of current assets	Was not carried out	Calculation of admissible balances of certain current assets based on the integration of ratio, analytical methods and direct counting method with subsequent comparison of reported data with the planned indexes
	Analysis of sources of current assets financing	Was not carried out	Analysis of sources of current assets financing by three groups: own, borrowed and additionally involved by carrying out the horizontal and vertical analysis of their structure and dynamics based on data of financial statements
Resultative stage	Creation of strategy of current assets management based on synthesis of the carried out research, aimed at formation of management decisions	Management decision was made based on the data of general production analysis that based on financial statements	Making of management decision concerning the efficiency of use of current assets is based on advanced analytical statements about efficiency of use of current assets and size of their admissible balances

For more precise and effective result, it is necessary to base on the results of the expert estimations that will ensure the successful implementation of management decision.

The essence of the information stage is to examine standard and actual field indexes in dynamics that will provide the basis for creation of the planned indexes and assessment of management activity efficiency. At this stage, it is necessary to carry out the research of structure and dynamics of current assets of the industrial enterprises of Ukraine and separately in the field, in which the research subjects work.

At the stage of direct analysis, the calculation of the required analytical indexes is performed and the specific features of activity and organization management system are examined. This stage involves the calculation of coefficients and determination of the degree of impact of certain factors on the efficiency of management of current assets and financial condition of the enterprise.

Taking into account the carried out research, we can assert that at the stage of direct analysis of current assets we have the opportunity to assess the return on assets of the enterprise and their liquidity, as well as to define the effectiveness of their management.

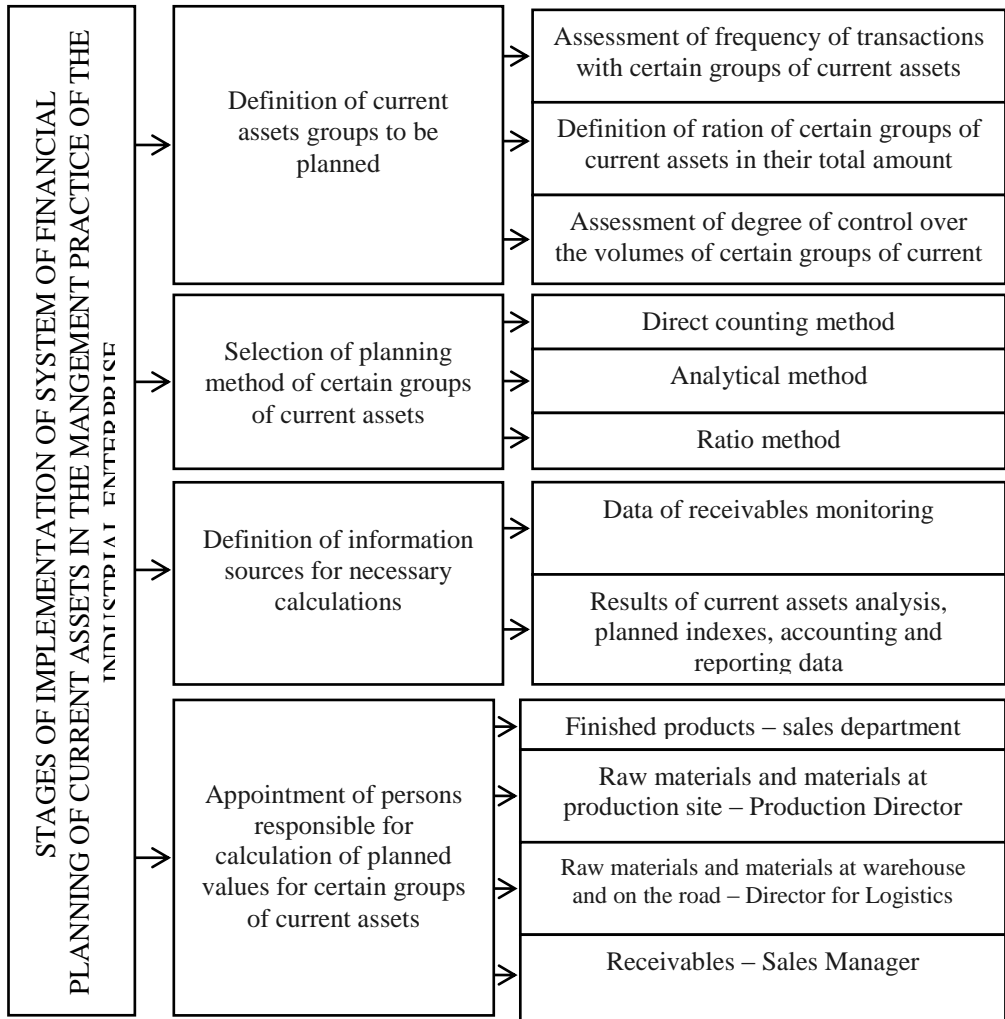
The creation of strategy of current assets management is the resultative stage of formation of analytical support, and expressed in search of optimum alternative of current assets management, creation of strategy for formation of more effective mechanism of management and elimination of identified deficiencies. This stage involves optimization of the volume of current assets that shall proceed from the selected type of current assets formation policy, ensuring the given level of the efficiency ratio of their use and risk. The resultative stage shall solve two main issues: "What is the need for current assets of the enterprise?", "What are the sources of current assets financing?". This stage is the most difficult because it requires creativity from managers and application of modern instruments of impact on the condition of current assets.

During management, the planning of the volume of current assets, based on reliable data and methods of financial planning, is the strategic element. The Fig. 1 shows the algorithm of implementation of financial planning of the volume of current assets in the management system of the enterprise. That should be reflected in the document of internal regulations, aimed at detailing the planning system of the size of current assets.

Selection of planning method of current asset depends on factors such as the availability of comparative data of previous periods, labor-output ratio of calculations, particular characteristics of the business. As a matter of practice, three main methods are used: direct counting method, analytical and ration methods.

The direct counting method is in the calculation of the amount of current assets on each type of inventory, then they are added, and as the result we get the determination of the standard of each element of normed current assets. The general standard is the total of standards on all elements. This method is the most accurate, reasonable, but nevertheless, very time-consuming. The ratio method is based on calculation of planned indexes by making adjustments (using ratios) in standards of the previous period. The ratios take account of change in production volumes, turnover of current assets, range changes and other factors.

The analytical method uses actual data on the value of current assets for the definite period. At this we specify the unnecessary and unrequired stocks, make amendments on changes in conditions of production and supply. The adjusted results of these calculations are considered as the norm of current assets for the planning period. This method is used in cases where no significant changes are expected in terms of the company work and the funds invested in tangible assets and stocks have a large share.



**Fig. 1. Algorithm of implementation of financial planning system in the management practice of the enterprise** (developed by author)

The combination of analytical and ratio method and the direct counting method makes it possible to generalize the procedure of financial planning of volume of current assets. Availability of reliable information necessary for calculations in its turn provides accounting support, researched in the second chapter of the thesis paper.

In addition, in the paper we proved the expediency of implementation of financial ratios of planned indexes of permissible balances of current assets to the system with the aim to improve analytical support of current assets management. The calculation of these planned ratios was proposed by way of combining analytical, ratio and the direct counting method.

The procedure for calculating was tested at PAO “NPP “Smelyanskiy elektromehanicheskiy zavod” (SEMZ) and is given in Table 3.

Table 3

**The recommended procedure for calculating of planned indexes of current assets**

Index	Method of calculation	Description of index	Calculated indexes for PAO "NPP "SEMZ" for 2015, thous. hryvnias
The planned rate of inventories in stockhouse (PRI)	$PRI = \frac{C_{mat}}{T} \times t,$ where C mat. – the cost of raw materials and supplies during the period, thous. UAH. T- number of days in period, days t – duration of inventories turnover, days	The optimal amount of inventories in the stockhouse, given the current needs of production and the risk of delays in deliveries on the road	6 779,73
The planned amount of work in progress (PWP)	$VWP = \frac{CRMP+LC}{T} \times t_2,$ where CRMP – the cost of raw materials and supplies, thous. UAH. LC – labor costs, thous. UAH. T – number of days in period, days t <sub>2</sub> – the duration of technological stage, days	The optimal amount of work in progress, given the degree of influence the duration of individual stages of the production cycle and production volumes	3 222,84
The optimal stocks of finished products in stockhouse (OSFP)	$OFP = \frac{NP}{T} \times t_3,$ where NP – net profit for sales of finished products during the period, thous UAH. T – number of days in period (year), days t <sub>3</sub> – duration of finished products turnover, days	The optimal stock of finished products, which must be in stockhouse to ensure uninterrupted supply of products to customers	12 518,83
Permissible balance of receivables (PBR)	$PBR = \frac{NP}{T} \times t_4$ where NP – net profit for sales of products during the period, thous UAH; T – number of days in period (year), days t <sub>4</sub> – duration of receivables turnover, days	The optimal balance of receivables, taking into account the planned volume of sales, including one that will be sold with deferred payment and the period for which it will be implemented	13 864

A revised procedure of analytical support of current assets found its practical use in the developed documents of internal regulations: Provisions on financial analysis of current assets and Provisions on financial planning of current assets, which were introduced in management practice of PAO "NPP "Smelyanskiy elektromekhanicheskiy zavod" (SEMZ), facilitate coordination of actions of analytical employees and arrangement of the requirements for implementing of analytical procedures. The structure of these documents is presented in Table 4.



Table 4

**The structure and purpose of the proposed documents of internal regulation on the organization of analytical support of management of current assets of the enterprise**

Purpose of the document	Regulations on financial analysis of current assets		Regulations on financial planning of current assets		Purpose of the document
	Name of section	Description	Name of section	Description	
It identifies and fixes the procedure for conducting of the analysis of current assets of the enterprise. It coordinates and optimizes the actions of all performers of analytical procedures aimed to evaluate the effectiveness of current assets management	Scope	There was defined an aim of development of this Regulation	Scope	There was defined an aim of development of this Regulation	It identifies and fixes the procedure of conducting of planning od permissible balances of certain groups of current assets as one of the main stages of analysis of current assets focused on improving the efficiency of their use.
	Notations and terms	The specified list of notations, which were given in the Regulations, and interpretations of key terms used in the analysis of current assets were set out	Notations and terms	The specified list of notations, which were given in the Regulations, and interpretations of key terms used in the process of planning of current assets were set out	
	Stages of conducting of analysis	Objectives, a list of major tasks, methodological tools and information sources of separate stages of conducting of analysis of current assets were defined	Substantive provisions	Objectives, a list of tasks of the planning process of the size of current assets were defined	
	Persons responsible for conducting of analytical procedures	Persons responsible for conducting of analytical procedures and the accuracy and terms of their implementation were defined	Procedure of Financial Planning	An order of determining the groups of current assets, subject to planning, methodology for calculating of planned indexes and information sources required for calculation was set out	
	Annexes	Form samples of work documents in the part of conducting of analysis of current assets were set out	Persons responsible for conducting of analytical procedures	Persons responsible for conducting of planning of the size of certain groups were defined	

## Conclusions and suggestions

The use of existing methodological and organizational regulations of analytical support of current assets management of enterprises enables to reduce the risks that arise at management of specified economic resources and, therefore, increase the solvency and ensure the continuity of the enterprise activity. Comprehensive introduction of recommendations developed by authors for the formation of accounting and analytical support of current assets of enterprises will strengthen their financial condition, enhance financial stability and competitiveness in the systemic financial crisis, changing economic environment against the background of economic globalization processes.

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## THE STATE, FINANCING PERSPECTIVES OF THE INVESTMENT AND INNOVATION ATTRACTIVENESS OF THE AGRO-INDUSTRIAL COMPLEX' ENTERPRISES IN UKRAINE

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**Abstract.** The basic trends of the investment and innovation's attractiveness of Ukraine agricultural enterprises are examined. The current state and the problems of the investment support of Ukraine agricultural enterprises are determined. The improvement ways of the investment and innovation's attractiveness in industry are found.

**Keywords:** investment attractiveness, innovation attractiveness, financing, development trends, agro-business enterprises.

*DOI: <http://dx.doi.org/10.23856/2305>*

### Introduction

Modern innovation processes are rapidly spread and affect the functioning not only of the government but the industry, trade, financial markets too. Today it is important for Ukraine to reach the level of the global trends and to become an equal, competitive partner of the global economic system. You should have a sufficient level of the economic, industrial, scientific potential and an ability to use, develop and improve it. Only the dynamic and continuous development can provide a strong, stable, highly developed national economy and ensure a high level of social life.

### The agro-industrial complex' enterprises in Ukraine

One way to overcome and go out of the current crisis is the significant investments' flow. The financial support of the progressive change will ensure the modernization and stabilization of the country, sector, region and individual enterprise. The activation of the investment processes in farms at present are the key to improving the quality and competitiveness of products, production growth. It also helps to form a new character of the enterprise motivation. The main factor in achieving progressive change and ensuring the adequate agricultural enterprises' evolution is the purposeful investment and innovation. Investment and innovation are very similar and are the closely related areas of economic activity. Thus, the use of any innovative component in the process requires its resource support in the form of the investment. The implementation of the enterprise's innovative

component is inextricably linked to its investment support. Therefore, at the present stage, the activation of the innovation investment support's entity is actual. It depends on the size, structure, investments focus and speed of their revenues. Today the different levels allocate funds for a minimum of technical, technological, environmental upgrading production. Realization of the investment and innovation projects is a unique opportunity to increase the effectiveness of the economic activity and to ensure the development of the company through the implementation of innovations. This approach needs to increase the investment and innovation attractiveness as providing opportunities for the economic innovation. It will improve the competitiveness of the company's products and services, its effective activities in general.

The investments' attraction and the development implementation of the agricultural companies are associated with two problems: 1) investors are primarily interested in the target orientation of the investment. It is a profit. Maximum results with minimum resources for the shortest time have become the main factor that encourages investors to the decision, while making the capital investment into the development of the company. Therefore, the investment should be made in the new, progressive forms as the investment into the obsolete production facilities will ensure the increase of the company's performance. 2) the introduction of innovations, the application of new inventions and discoveries, the fulfilment of the research and development work, providing the qualitative changes in the production. The development of the innovation activities without any additional investment is simply impossible. The irrational use of the investment resources leads to the company's freezing, the decline in output, reducing the competitiveness of products and the quality of the provided services.

While determining the attractiveness of the innovative agricultural enterprises, the following should be considered: 1) the evaluation of its performance results and the availability of the resource base; 2) the sensitivity to the changes of the enterprise environment.

Innovations provide the qualitative changes of production. The active implementation of the innovative processes in farms is the improvement direction of the traditional types of its activities. Among the main causes of the investment's failure or lack in the innovative projects is the low status of the agricultural enterprises in Ukraine. It does not meet the requirements of the establishment and operation of the innovative economic model. Therefore, the innovative appeal is in the farms linked to their innovation potential. That is the availability of personnel, technical, technological ability, marketing, communications and other types of the effective financial and economic activity. So, the innovative appeal is a difficult, complex, dynamic system. It consists of a combination of these interacting elements and different levels of complexity and organization.

The categories of the investment and innovation, the investment and innovation attractiveness are widely used in research and are often identified, although in their essence they are not identical:

1) The innovative appeal is a set of interacting elements of the enterprise. These elements provide the ability and willingness of the company to create and to use the innovative products.

2) It is a complex process, associated with the process of an investment as an integral component. The increased attractiveness of an innovation is the key to the increase of its investment attractiveness. It's an evidence of the sufficient resource base and the organizational development of agricultural enterprises.

While analysing the scientists' opinions, considering the attractiveness of the investment and innovation (Gudz, O., Mayorova T., Koyuda O., Kolesnichenko V., Nesterchuk Yu., Duca A., Zadorozhna Ya., Dyadachko L., Rachynska G., Lisovska L.), we are inclined to the definition of the investment and innovation attractiveness in a farm as an integrated system of the enterprise characteristics. It reflects the availability benefits of the investee through the interacting elements' set of different levels of complexity and organization. It is based on the evaluation criteria of liquidity, solvency, financial stability, performance, property and innovation potential of the entity.

The strategic development of the domestic agro-industrial complex (AIC) is one of the major problems of economic and social policy. It is the major source of revenue and export-oriented sectors of the national economy.

The natural resources and human potential of Ukraine can ensure not only their own food security. It can become an active participant of the global food market.

However, a decrease in the gross output of one of the main functions of the AIC – agriculture – has been until 2000 in Ukraine. This negative trend appeared due to the beginning of the land reform, thanks to the implementation of the Resolution of 1990 "On Land Reform" and the Decree of the Ukraine President "On the Sharing Procedure of Land, Transferred to the Collective Ownership of Agricultural Enterprises and Organizations" in 1995 [8, 10]. Their implementation was a delayed process of land sharing, it limited the entrepreneurial initiative within the farms and agricultural enterprises, disorganized the work and deprived the alternative types of business structures.

Since 2000 a gradual increase has occurred in the gross production industry. The positive processes are the emergence result of the new organizational and legal structures of the market type. The implementation of the agrarian reform principles was defined by the Decree of Ukraine President "On Urgent Measures to Accelerate Reform of the Agricultural Sector".

Before the land reform Ukraine was dominated by the farms with the land area on the average of 3.0-3.5 thousand hectares. They were crushed within the period of the land reform. It had a negative impact on the development of agricultural enterprises. Very small plots of land cannot use modern technologies at their processing.

The number of the large farms, for example, in the USA, is growing. They create a great advantage at the world market for agricultural products. In this country they are more than 8%, but they make 73% of production and receive a percentage on the total income of all the farms. It provides food safety for the large enterprises of US today.

The following four types of the households: agricultural commercial organizations of the corporate type; state and municipal enterprises; peasant (farmer) economies; households, including personal farming, gardening and horticulture citizens, – operate in the agricultural sector of Ukraine at the present time.

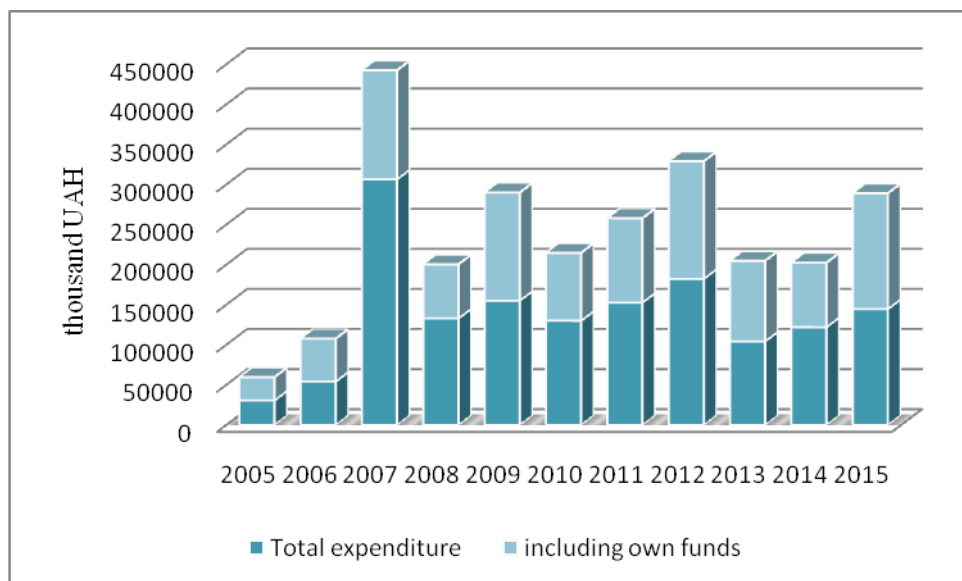
The experience of the agro-developed countries demonstrates the need in the government support of the integration processes at AIC enterprises. It will enable the use of the new technologies and increase the productivity in industry. The domestic agricultural policy at this period is characterized mainly by the tactical, not strategic goals and programs, and the regulating function of the state did not have any systematic and consistent demonstration. The state support of the local farms is characterized by the imperfect financing deficit in industry. The international experience of the budget financing of the agricultural sector as one of the regulation areas is of particular note. For example, in the USA the level of the state support of agriculture makes 40% of the value of the agricultural products, in the EU

– 35%, in Japan and France - 72%, in Ukraine - only 8.3%. So, the efficiency of the state influence on the development of the agricultural sector is a significant problem for Ukraine.

Another negative factor which lowers the investment and innovation attractiveness of farming is the unsatisfactory appropriate capital of 88.9% and the value reduction of the fixed assets by 30.9% in Ukraine's economy as a whole.

To maintain its position and to increase the level of the investment and innovation attractiveness, the agro- business companies have to constantly develop and expand the scope and range of products, develop new technologies, maintain and update the status of the fixed assets, implement the innovative projects, increasing the efficiency of operations and market value. In these conditions, in addition to the state support of the agricultural enterprises, a recurrent need in the additional sources of funding is required. The attraction of foreign investment will provide farms with a competitive advantage and deliver an effective means for the increase of their attractiveness.

The structure of the farm innovation financing for the last 5 years shows the greatest proportion of their own funds. The agricultural enterprises are focused on their own capabilities, and their share in the total funding exceeds 50-70% (Figure.1).



**Fig. 1. Sources of Innovation Financing at Agricultural Enterprises, 2005-2015, Thousand UAH (Agricultural Bulletin, 2016)**

In conditions of the budget deficit it is impossible to rely on the budget financing in Ukraine. Being legal (1.7% of GDP), the funding rate of science and innovation exists, but it is not performed every year. In 2015 the agriculture budget received the least support for 10 years - spending on agriculture, compared with 2014, it reduced almost by 2.5 times and is about 3.1 billion. Almost all the government programs on the industry support were «frozen».

The difficult financial situation at the agricultural enterprises, the lack of goods' quality certificates, the unfavourable situation, concerning the protection of the intellectual property rights, the significant depreciation of the equipment fleet and lead to the innovation marked

reduction. The priority areas are creating less labour-intensive products. The sources' distribution of the farm innovation financing is conducted by summarizing performance of GDP and its role in the gross investment.

The producer support completely depends on the presence of the State budget, leading to the annual fluctuations at the level of the financial support (Table 1) (OECD, 2015)

Table 1

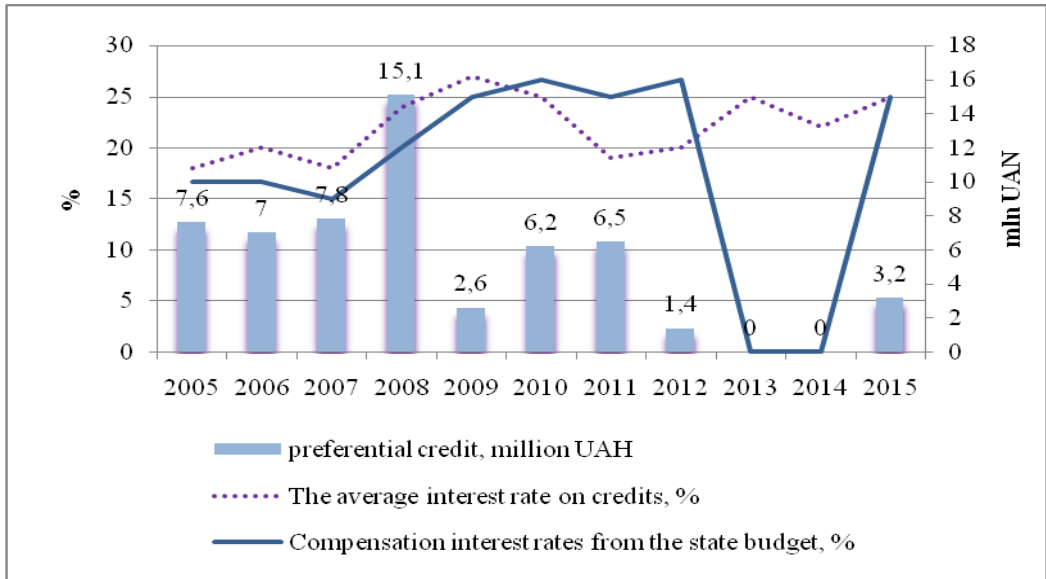
**Evaluation of Manufacturer's Support, 2000-2014, USD Million (OECP, 2015)**

Indicator	2000	2005	2010	2012	2013	2014
Evaluation of the manufacturer's support:	203	10683	16150	4472	-11157	-34294
Support production of commodity products	-1780	6507	3808	-12064	-28486	-52661
Payment production use	582	2685	9541	12502	13257	14105
The benefits of fixed tax in agriculture	1400	1400	2800	3300	3500	3800
The PSE percentage	0,41	10,92	6,49	1,50	-3,18	-8,22
Evaluation of general support services:	408	2856	4866,80	6191	5253	3487
Agricultural knowledge and innovation	215	1045	2097	2837	1995	1951
Inspection and monitoring	66	791	1342	1593	1602	1292
Development and maintenance / repair infrastructure	92	862	1011	1296	293	9

According to the OECD index database, the manufacturer support (PSE), was within the limits of 10.92 in 2005 to -8.22 in 2014. This is the lowest level of the mid-90s. The value of the general support services (GSSE) has increased since 2000. This corresponds mainly to the spending on the agricultural knowledge and innovation systems as well as the inspection and control. The austerity measures have led to the cancellation of some important tax benefits in 2014. The number of programs in agriculture in 2015, funded through MAP, reduced from 32 in 2014 to 19. This Ministry budget was reduced by five times from 6.35 billion UAH in 2014 to 1.67 billion UAH in 2015 (OECD, 2015).

The determination of lending to businesses is the process of cheaper credits. Concessional credits make on the average 60% of the total ones. The average interest rate, offset by the budget, was approximately 10.9% in the period of 2005 – 2015. (Figure. 2)

Thus, the volume of the concessional lending depends essentially on the amount of funds provided by the state budget for the concessional lending, volatility and tends to decrease. The mechanism stopped to exist completely due to lack of funds in the budget in this area in 2013-2014.



**Fig. 2. Value of Preferential Lending and Crediting Rates of Agriculture (NBU, 2016)**

By 2015 a special account for farmers has returned 100% tax. Since 2016 the system has changed. From 1 January 2016 to 1 January 2017 the crediting volume of special accounts for farms became differentiated depending on the type of activity; for the transactions in the supply of grain and industrial crops - 15%, animal products - 80%, other agricultural products and services - 50%. The appropriate amount of money was made on special accounts and remained at the disposal of agricultural enterprises for the use in the production of agricultural products and services.

Table 2

**Credits to Agricultural Enterprises of Ukraine for 2010-2015**  
(by Timing and Types of Currency) (NBU, 2016)

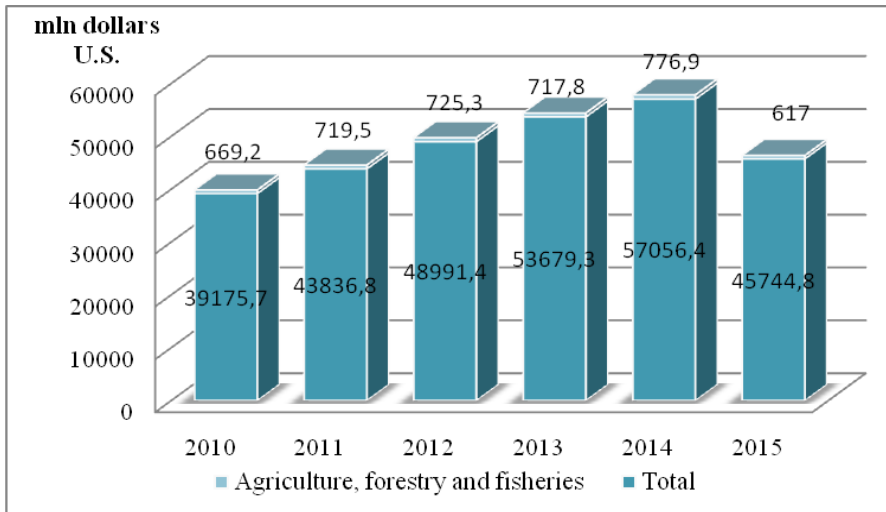
Indicator	2010	2011	2012	2013	2014	2015
Total	26,5	34,1	37,3	43,5	55,3	55,8
in national currency	20,4	24,9	26,1	31,5	35,4	39,2
1 year	7,1	10,2	12,5	17,2	15,6	13,9
1 to 5 years	11,1	12,5	11,4	10,8	15,6	15,1
over 5 years	2,1	2,4	2,3	3,5	4,2	10,2
in foreign currency	6,2	9,2	11,3	12,0	19,9	16,7
1 year	1,5	3,2	4,5	6,6	9,4	10,9
1 to 5 years	3,6	4,8	5,7	4,7	9,6	4,9
over 5 years	1,1	1,2	1,1	0,7	0,9	0,9

The structure of funds attracted the largest share of agricultural enterprises (70%) accounted for the short-term credits (up to 12 months), 30% were the medium-term credits (up



to 36 months) and the long- term credits (up to 60 months). The most active lending of AIC was conducted in Vinnitsa, Kherson, Poltava, Cherkasy and Lviv regions.

A significant factor in providing the financial, technical and technological modernization and the competitiveness increase of domestic production may be a foreign capital (Figure. 3).



**Fig. 3. Foreign Direct Investment into Ukraine's Economy, according to Economic Activity Type** (State Statistics Service of Ukraine, 2016)

In the period from 2010 to 2015 the foreign investors had put nearly 4.2 billion of US dollars into Ukraine agriculture. This makes 14.6% of the total FDI that has come into the country.

The current state of the innovation process in Ukraine, its trends have certain shortcomings in government regulation, current funding mechanism and innovations encouragement. The identified deficiencies adversely affect the innovations implementation at all levels: state - industry - region - enterprise. This is referred particularly to the implementation of the specific innovation projects at the enterprises.

The main indicators' analysis of the investment and innovation attractiveness in farms within the period of 2010-2015 shows that innovations today are not a decisive factor in shaping their competitiveness. The main problem is the inconsistency of the agricultural enterprises' innovative development needs and of the available resources for their financial support.

The specific differences in farm lending is the increased riskiness of the credit portfolio. This is due to the agriculture dependence on the weather conditions, the state policy, regulating the agricultural markets; cyclical provision and repayment of credits, due to the seasonality of production and sales.

Farm credits are made in terms, clearly provided for them, and in compliance with the principle of credit adequacy. The delayed and insufficient provision of the credit amount may affect the production technology and the revenue financial shortfall.

The scientists of NNC "Institute of Agrarian Economy" developed the following calculation of the investment economic efficiency in agriculture (Table 2):

Table 2

**Calculation of the Investment Economic Efficiency in Agriculture (IAE, 2012)**

Indicator	Gross production in comparative prices, billion UAH	Gross production in actual prices, billion UAH	Forecast of investment in fixed capital, billion UAH
2017	86	175	35
2018	93	188	38
2019	99	201	42
2020	106	215	45

The financial support of agricultural producers will be improved through the implementation of the proposed measures in the financial and credit policy. This will increase the satisfaction level of their needs in credit resources.

To develop the credit support, the agricultural producers should expand the opportunities of the agricultural production in order to attract credits. For this it's necessary to:

- Increase the bank lending market through the establishment of the State Land Mortgage Bank and the introduction of a mortgage mechanism for the agricultural land and lease the rights for them in mortgage lending;
- Create a system of credit cooperation by amending the legislation in order to regulate the activities of credit cooperatives in rural areas and the expansion of micro-credits in rural areas;
- Promote the use of new credit products in the bank lending system;
- Develop a system of the credits' repayment guarantee by creating a special guarantee fund;
- To introduce new financial instruments for the agricultural producers to obtain the additional credits secured by future crops (or future animal products);
- Establish an information support system of lending industry as a part of the monitoring, advisory and educational services.

### **Conclusions and Suggestions**

The dynamics of the investment directing into agriculture is affected by the consequences of the financial crisis. It led to a decrease in the foreign investment as well as the risks from the adverse investment climate in Ukraine. It was also reflected in the lower levels of the investment into farms and their innovation attractiveness. According to the reduced investment, an income in the agricultural sector is received particularly in the form of credits.

The main credit areas to stabilize a farm are in a set of measures from the government and the banking system. For this an effective integration mechanism of interaction between the banks and the agricultural sector should be created. This will increase the financial support of the agricultural enterprises through the mechanism of cheaper credits. The rational use of the budget funds to increase the budget allocations of foreign credits, the creation of their state funds' mechanisms, the improvement of bank credits are the keys to the investment and innovation's attractiveness increase of the agricultural enterprises in Ukraine.

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## THE SYSTEM OF MARKETING PLANNING AT THE ENTERPRISE AND ITS FORMATION PRINCIPLES

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**Abstract.** The article deals with the nature of marketing planning at the enterprise and its features. The authors study the methodical approach of marketing planning, taking into account the market situation at the domestic market. The authors offer the systematization of the formation principles of the marketing planning system at the enterprise.

**Keywords:** planning system, marketing, marketing strategy, enterprise, the domestic market, consumers, competitors, the market situation, the principles of marketing planning.

*DOI: <http://dx.doi.org/10.23856/2306>*

### Introduction

Today there are many methodological approaches to the definition of marketing planning at the enterprise. Summarizing the data of the foreign and domestic literature in the field of marketing planning, it is possible to identify four main areas where it's examined from the position of the content, in terms of the decision-making as a process of development, an application strategy and a part of further planning. At the same time, we should pay more attention to the study of this system, taking into account the market situation at the domestic market and the principles of its formation.

### Analysis of the Marketing Planning System

Marketing planning is a managerial process of creating and maintaining a fit between the goals of the enterprise and its potential in the processes of market activity. It exists in order to develop a clear program of action that will allow you to control the speed, consistency and results of changes with the aim of obtaining the desired results within a certain period. The opposition of marketing planning is the improvisation, which is based on the unscheduled decisions, and the spontaneous, intuitive decisions.

Marketing planning should be considered to be the process by which business leaders predict the future and take the necessary steps to achieve that future. They should examine the activities to determine the goals of the company and their changes, resources needed to achieve them, and policies on acquisition and use of these resources.

On the other hand, marketing planning as a process is a sequential interdependence measure for the solution of the existing problems. Accordingly, one can distinguish the

following stages of marketing planning:

- defining the purpose of planning (in future it will allow to determine the functions of planning, criteria of decision-making, to organize a system of control);
- problem analysis (defining the existing and desired end situations and also the basic problems of implementation and planning);
- search of alternatives (the definition of the available opportunities to solve the existing problems);
- forecasting (the formation of ideas on future development of the most important indicators of marketing activities, the expected behavior of competitors, consumers);
- estimation (selection of the alternatives, adequate to set a goal);
- decision and adoption of the planned tasks (developing a clear marketing plan: recommended or mandatory for the execution).

The main tasks of marketing planning are the following:

- bringing potential of the company into accordance with the requirements of consumers' selected target markets;
- optimal integration of all types and directions of the company's marketing activity;
- the definition and justification of marketing activities' list;
- the marketing action's focusing on: who will perform, where, how and when.

Depending on the duration (the period within which they develop), the marketing plans are divided into the short-term (annual), the medium- term (1-3 years) and the long-term ones (3 years or more) (table. 1).

Table 1

**Characteristics of Marketing Plans in Dependence on Their Duration:**

Plan view	Planning tool	Content of planning
Perspective	Heuristic methods, simulation of economic processes	The development of forecasts, the long-term goals, improving the image, improving the quality, competition, strategic planning
Medium-term	By extrapolation, analytical methods (algorithms)	The development of the medium-term objectives, planning of new products, the formation of distribution channels
Short-term	Analytical methods (algorithms)	Development goals for the year, planning of the advertising's annual budget, other marketing operations, assortment

Depending on the extent, the marketing plans are divided into the ones at the grocery (for individual products and product groups of the company), for the entire range of products of the enterprise or being a part (section) of the General economic plan.

According to their development, they are divided into the developed ones, according to the "bottom-up" principle (on the basis of the information provided to workers of the marketing department with the other departments of the enterprise) and the "top-down" principle (planned activities, managed and controlled centrally).

According to the object, the marketing plans are divided into the corporate (general corporate), devon (individual units), business (individual activities) and product ones (specific groups or types of products).

As for the content planning, they are divided into the strategic (looking for the new opportunities and goods production), the tactical (the creation of conditions for the well-known features and products) and the operational ones (implementation of the specific opportunities).

According to the subject, they are formed as the target (the definition of common strategic, tactical and operational goals and constraints), the object (personnel planning, information, advertising, finance, etc.), the software (creation of prerequisites for the implementation of remedies) and the procedure (planning of specific actions, for example, sales of products).

The system of marketing planning exists to define the main objectives of the company and is focused on the definition of the planned end results, based on the tools and methods to achieve the goals and provide the necessary resources. Moreover, it is the process of making management of marketing solutions. The result is a set of actions and decisions of management that leads to the development of marketing strategies to achieve their goals.

In the process of marketing planning formation the following should be done:

- approve the organizational structure relative to the strategic development;
- identify the favourable and threatening features for the business external factors;
- prepare a project plan to estimate the advantages and disadvantages of the enterprise;
- approve the main line of development, focusing on which you can test various strategies;
- monitor the trends that may prove to be vital for the process of products' sale at the market;
- develop the short-term solutions in the framework of the marketing activities' strategic plan.

The major functions of marketing planning in a market economy are modelling of future changes in the marketing environment from the point of view of the desired state and coordination of all system elements in order to achieve this desired state.

Summarizing the scientific data, it is possible to define the following tasks of marketing planning:

- formation of the organization's goals and activities;
- objective identification of the complex trends of management;
- analysis of the enterprise potential and determination of the resources' level
- identification of the alternative development;
- identification of problems, requiring the strategic decision-making;
- prediction of possible changes in the external environment and adjustment to them by developing the optimal strategy of the enterprise.

Summarizing the goals, objects and functions, we can conclude that marketing planning is a specific kind of practical activities of the enterprise and the organizational system.

Taking into account the above mentioned, the system of marketing planning should be understood as the system of governance in which strategic decisions are made in the sequence, based on the data of the information systems within the exact specified subsystems of the organizational support and management. The system of marketing planning is considered to be a complex, which includes such several subsystems as:

- system plans;
- planning process;
- subsystem of decision-making;
- subsystem of organizational support;
- subsystem of strategic planning control.

A modern approach to marketing planning involves the interrelationship of planning with another planning functions and the necessity of these linkages' examination, when designing a planning system, information system and other support systems.

Summarizing the results of the theoretical research, we reveal the strategic planning system's organizational basis of marketing planning fundamentals at the enterprise. The strategic planning system at the enterprise is a set of the organizational and economic methods and techniques, aimed at the problems decision of enterprises' adaptation to the external environment.

In the system of the strategic marketing planning it is proposed to allocate the following six subsystems: the information support, forecasting options for the development of the external events, the evaluation and selection of strategic decisions, the organizational and methodic maintenance of the planning process, the system plans of the company, the evaluation of the strategic plans' implementation effectiveness. The subject of the above mentioned is the proposed system of marketing planning at the enterprise (Fig. 1).

One of the basic elements of marketing planning is an information subsystem. In this subsystem one should focus on the data, obtained in the analysis of the external environment, which affect all aspects of the company (status and prospects of the market, product, sector, performance of competitors, main suppliers, etc).

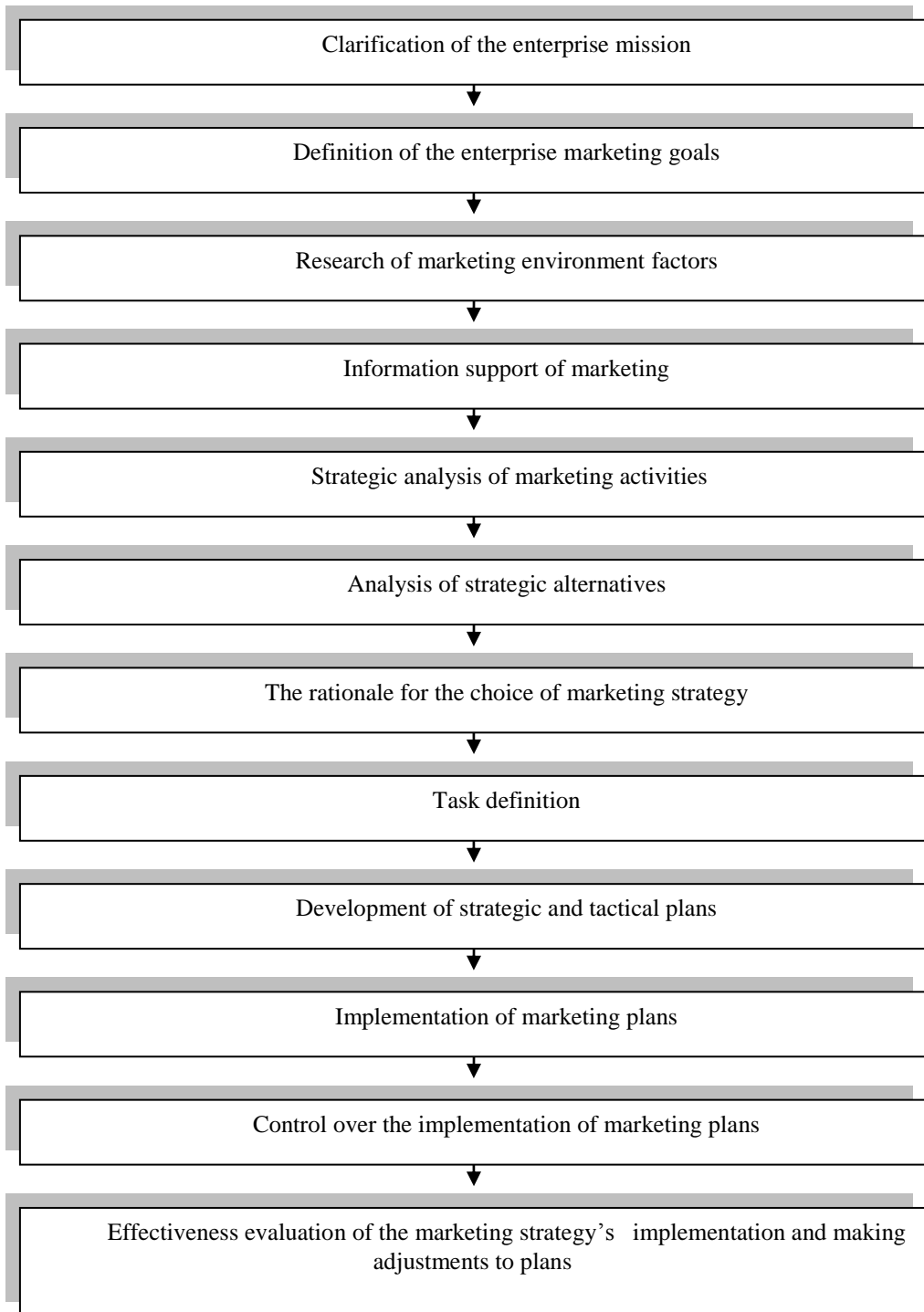
The forecasting subsystem is intended to describe the possible variants of the external situation development, the construction of the alternative scenarios in case of conditions' changes of the enterprise activity. The building of a real forecast is provided by the completeness and accuracy of the data, received from the information systems.

The strategic marketing planning is inextricably linked to the evaluation and selection of the strategic decisions. It is the very subsystem where the formation of goals and strategies of the enterprise development, the evaluation of their implementation possibility, the identification of problems and the choice of the optimal development strategy exist.

The organizational and methodic maintenance of the marketing planning process is a formation element of the strategic planning procedure. It contains: the definition of the state and allocation of the functions between the personnel, involved into the planning process; the development and approval of the planning documents' forms; the definition of the planning period; scheduling of the planned works.

The marketing plans' system is the most important subsystem, because it is a result of the strategic planning process. The necessity of a system of the interrelated plans is the fact, addressed to the strategic planning, being very complex and requiring a comprehensive methodological approach. So, a simple plan or a hierarchy of multiple plans could not ensure the realization of the objectives of a large engineering enterprise. It should be a linked system of the interlocking plans that reflects the aspects of all problems, confronting the enterprise

The evaluation system of the strategic marketing plans' implementation is necessary to monitor the achievement of the planned objectives or the desired state. In this subsystem we should display the criteria of the strategic planning efficiency and provide measures to regulate the deviations in the planning process with the aim of the intended results' obtaining.



**Fig.1. The proposed system of marketing planning at the enterprise**



The proposed approach to the composition and content elements of marketing planning at the company has a more complete coverage of all the subsystems that ensure the effectiveness of its functioning.

To summarize, it can be noted that the main purpose of marketing planning is to identify the optimal variant of all the possible alternative ones of the enterprise development in future.

It is an organizational and economic system, providing a continuous decision-making process, in which:

- the goals and objectives of the company are set and specified in time;
- the strategies are defined to achieve them;
- the detailed plans, reflecting the different aspects of economic activity, are developed.

The process of marketing planning is based on several principles, i.e., the rules that should be followed at its implementation. All the principles are divided into the following three groups:

- the universal ones, which include the marketing orientation, consistency, complexity, the continuity of the process, being scientific, normative, situational, having the administrative-behavioural approach, etc.;
- the general ones, which include the creation of a single planning system, continuity, flexibility, integration and coordination of plans, providing a feedback on the planning system, economic balance and validity of plans to ensure the achievement of objectives, etc.;
- the particular ones, covering the consistency of the strategic and operational (tactical) planning, ranking of the strategic planning objects, according to their importance, the plan consistent with the parameters of the environment, variations of the plan, the adequacy of the planned performance, risk estimation, etc.

Plans should be adjusted in accordance with the changing internal and external conditions of the enterprise or should be developed anew. In accordance with this principle, planning is not considered to be an isolated act but a constantly iterative process. The principle of continuity requires all plans to be developed on the basis of the perspectives, because they are the basis for the plans' preparation in the future.

The following plans should be based on the previous ones, considering the results of their performance. Continuous planning allows you to implement the principle of flexibility, implying the possibility of the constant adjustments to the earlier decisions or reviewing them at any time according to circumstances. Coordinated plans have divisions (horizontal). They are integrated at different levels in the vertical.

The marketing plans' focus is aimed at the rational use of the enterprise resources to increase production efficiency and maximize profits.

The principle of the leading links and the priority of their implementation means that the company always selects the leading links on the realization of which its business success depends and strives to implement them in the first turn. The choice of the leading units should be based on a thorough analysis of the state of the enterprise affairs, and it is conducted only by the experienced managers. A distinctive feature is the integrated approach, being an attempt to integrate the planning and management processes.

Specific principles of the formation system of marketing planning and their respective tasks include the consistency of the strategic and current planning, ranking of the strategic planning objects, according to their importance, the plan consistent with the parameters of the environment, variations of the plan, the adequacy of the targets, risk estimation.

It should be borne in mind that one of the most important principles of marketing

planning is the creation of a single planning system that provides the link between the strategic and tactical (current) planning, the continuous planning process.

Marketing strategic planning should be considered to be a process of creation and practical implementation of the enterprise activity's programme. Its purpose is to ensure the effective allocation of resources to achieve the target market. Two approaches to the allocation of resources are known in this aspect:

- the implementation function of return on sales (determined by the ratio of costs and results of marketing actions);
- tactical direction of marketing activities in a specific market situation.

The most important section of the enterprise's tactical plan is the production programme or the plan of production and sales of goods, affecting the rhythm of supply. It defines the necessary volume of production during the planning period, corresponding to the nomenclature, the assortment and quality requirements of the sales plan.

The production programme offers the tasks on commissioning of new production capacities, the need for the raw material resources, staffing and transport. This section of the plan is closely linked with the plan of the labour and wages, the plan of production costs, profit and profitability and the financial plan.

To select the rational ways of the enterprise planning, it is necessary to anticipate situations in order to influence them, directing its economic activity at the goal achievement and to take into account the risk of the possible deviations of the planned indicators. But like in any business or technological process, it's always the financial aspect, affecting financial activities that can influence the functioning of the enterprise, which should be examined from the point of view of the system analysis. After the production, the resource supply of the production process, the choice of technologies, the realization of production, taking into account the market conditions, the planning of the financial and economic activities are the interrelated elements of the economic production and social system.

The statistics indicates a favourable growth trend of production in industries. In this regard, it is especially important to develop and to implement a marketing strategy that enables to use the new opportunities and to reduce the uncertainty of the external environment. For Ukrainian enterprises, the main uncertainties are: the competition of foreign countries, the rupture in the production and economic ties, the loss of the existing distribution channels, a significant reduction of raw materials, fuel and energy opportunities, the decrease in production capacity, the slow turnover of the capital, the lack of the available financing schemes and lending; the increasing adverse impact of social and political processes on the society.

To summarize, we can conclude that the main distinctive point of the present time is a constant increase of the uncertainties in the external environment. This, as it has been already mentioned, became the cause of the strategic planning, marketing and management at enterprises.

To take into account all the external factors and to achieve the necessary changes in organization and management, it is possible to formulate the main requirements to the system of the strategic marketing planning:

1. The need for continuous collection, analysis, processing and classification of data which bring changes into all spheres of activity.
2. The creation of a mission, objectives, strategies activities in accordance with the requirements of the external environment.
3. The establishment of the rapid response systems to the detection of changes to

prevent the negative impacts or, on the contrary, the use of the opportunities.

Table 2

**Estimation of the Enterprises' Marketing Planning in Dependence on the Level of the External Environment Instability:**

Characteristics	The level of the environment instability, points				
	1	2	3	4	5
The popularity of the event	familiar	within extrapolation	intermittent familiar	unexpected and new brand	
The pace of change	slower than the solutions of enterprises	comparable with the reaction of the enterprise		Faster than the reaction of the enterprise	
Predictability	By the analogy with the last year	by extrapolating	predictable	partially predictable	not predictable
Planning methods	budget planning	long-term planning, planning of research and development, strategic marketing planning		strategic marketing planning	
The model of management and marketing planning	reaction (minimizes changes)	active special (no planned strategies, the implementation of gradual changes)	active systematic (strategic decision-making, based on clear projections of future trends)	strategic management (development of strategies, based on the consideration of environmental factors, the construction of the alternative scenarios of future changes)	

As it has been mentioned above, the strategic marketing planning in its development has passed through several stages, varying significantly in their content and form, due to the changes in the above stated conditions of production and sales. Considering the main trends in the development of the strategic planning in the international practice, let's characterize the causes of changes in the methodological approaches to the strategic planning of the enterprise.

It's known that in the beginning of 1980s the interest in the strategic planning has decreased significantly. This occurred due to the fact that the largest American firms, keen on strategic planning, were driven out of the advanced positions of the world market by the more flexible in decision-making entrepreneurs from other countries. In these conditions, in order to improve the competitiveness, the companies began to restructure, reduce costs, improve quality, reduce staff and rearm.

The reasons analysis of the strategic planning's failures at this stage was highlighted in the economic literature in the following way:

1. The imbalance of power and influence among the line managers and planning

departments (plan services almost completely took over the operation strategies).

2. Poorly developed mechanism for the practical implementation of strategic decisions (there was no organizational support).

3. Executives at different levels did not have any proper professionalism in business (hence the reduction in services of the strategic marketing planning).

4. Current activities (crisis situations, etc.) reduced the attention to the implementation of the strategic marketing planning.

5. The importance of the conditions and prerequisites of planning, that ensure the success of the implementation plans, was not taken into account (or is not estimated enough).

6. Did not emphasize the relationship and the place of strategic objectives in the overall system predictions.

7. Poorly defined marketing policy.

8. The level of the decisions' uncertainty was not taken into account during planning;

9. Some managers could not estimate the situation, presenting the critical and limiting factors in making decisions.

10. The staff was psychologically and professionally unprepared.

In the beginning of 1990s an increasing interest in the strategic planning has appeared there. At that time, the managers of the companies, consultants and the teaching staff of business schools considered the strategic problems of the enterprise development to be the priorities of the office and thought they will retain their paramount significance for the next five years.

The strategic planning of marketing at the present stage of the economic development differs significantly from the previously accepted forms. The modern followers of strategic planning abandoned the semi-abstract, the terminized models that differed from the reality.

They propose to transfer the functions of the marketing strategic planning, previously focused on exclusively from the top management to the middle managers, to the leading of the production's specific areas, where a special planning group is formed, usually consisting of the young people with creativity and the experienced staff, seeking to defend the gains, achieved earlier. Moreover, in order to bring the process of marketing planning to the realities of today's market, the professionals in the field of strategic planning are recommended to be involved into the development strategies' formation of major consumers and suppliers.

This approach to the strategic planning of marketing is revolutionary, because beforehand the planning was limited only to the top managers and the most qualified professionals.

The experts-planners of the new generation, particularly A. Slyvots'ky, the founder of the consulting firm, Y. Omlila, the General Manager of Nokia Group, L'yuyis Platt, the Chairman of Hewlett-Packard Company and others stress the need in taking bold decisions in the development strategy of the company not only to adapt to the changes but also to anticipate such ones. In their opinion, the strategic approach has nothing to do with such a narrow task (compared to the basic one), as the increase in the occupied part of the market or the current income.

The penetration of the marketing strategic planning's ideas into the economy of Ukraine was held in 1980, and the development stages of the strategic work in our country differ significantly from those described above. It is necessary to separate four periods in the development of the strategic work: administrative, conditional self-reliance, adaptational and orientational periods for the external marketing strategy.

Our analysis of the strategic planning practice in the economy has allowed establishing

of the main stages that reflect the characteristics of development and characterize the trend of change in the priority to be solved in the task scheduling and shaping of marketing planning at the enterprise.

### Conclusions

It is established that the main purpose of marketing planning is to identify the optimal variant of all the possible alternative ones of the enterprise development in future. It is an organizational and economic system, providing the continuous decision-making process.

One of the most important principles of marketing planning is the creation of a single planning system that provides the link between the strategic and tactical (current) planning, the continuous planning process. It is proved that the basis of marketing planning at the enterprise is a system of the marketing strategic planning, which is a set of the organizational and economic methods and techniques, aimed at the problems decision of the enterprises' adaptation to the external environment.

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## VIRTUALIZATION OF CIVIC ACTIVITIES OF UKRAINIANS IN THE CONTEXT OF LIMITATION OF THEIR REAL POLITIC ACTIVITY BY AUTHORITIES

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**Abstract.** The article deals with the peculiarities of the Contemporary Western civilization and its culture of rational market behavior of individuals. The instrumental role of information as an important resource of contemporary markets and means of communication in social networks is determined. The article represents the analysis of the formation process of virtual field of Ukrainians’ social activities in the context of limitation of their real politic activity by authorities as well as the study of online communication culture.

**Keywords:** rational culture "universal civilization", culture of Internet communications, political culture, social network, information, political protest activity.

*DOI: <http://dx.doi.org/10.23856/2307>*

### Introduction

For the last decade the Ukrainian political life is undergoing significant changes that affect the life conditions and attitudes of the wide sections of population. The new life conditions cause either apathy towards oligarchic politics or understanding the necessity to fight for one’s rights.

Against this turn of events in Ukraine there is a stratum of socially active population (carriers of a new culture of online communication) for which adverse domestic circumstances civic activities dictated by legislative restrictions by the authorities, is an incentive to find new, previously not typical for our society forms of political activity related to the virtual space of social networks. The article is devoted to the analysis of these innovation phenomena.

### The analyses of virtualization problem of civil activity the Ukrainian population

According to V. Naipaul modern Western civilization has become “universal” in many respects. Many indicators suggest that it can be considered the result of a social order based on consistent implementation of ideas "Enlightenment project" and criticized the traditional social order based on the principles of moral duty and religious faith.

In 19<sup>th</sup> and 20<sup>th</sup> centuries such social order in the developed Western countries began to be formed on the basis of the principles of conscious and rational arrangement of public life on grounds of rational scientific knowledge in the propagation of atheism and repression of religion from the public sphere in private. All this symbolized the emergence of new principles of rational culture of the modern social order.

Undoubtedly, rational thinking of individuals in modern Western countries encourages the development of the capitalist market. It is the rational and scientific-based decision making that enables the participants hope for success in competition with others.

Friedrich Hayek wrote: "It is not rationality that is necessary precondition of competitive market functioning but the very competition and its supporting traditions that stimulate this rationality". However, market participants should be free in making decisions about how to act, or rationality of thought had the possibility of full participation in their ongoing operations. Therefore market relations support individualism in individuals' social behaviour, i.e. more or less complete individual's freedom from society, and the priority of his/her personal goals and motives over social ones. Thus humanistic principles of freedom and self-development of individuals, and rationalism and scientific knowledge, as well as individualism in motivating social behavior of individuals appeared to be closely linked.

At the industrial stage of development of mankind, it became clear that the livelihoods of the capitalist market, despite the rational behavior of participants do not guarantee the expected results of the fact that these results are often determined by a set of random factors. After all, market relations all individuals seek to implement only their private interests, are constantly in conflict with private interests of others. In moments of these contradictions will most significantly reliably nobody knows. As a result, the markets individuals to constantly respond to acts of random factors that are unpredictable for individuals.

Drivers of modern markets are a factor that determines market processes internally and directly affects the adoption of rational and informed decisions regarding these markets becomes information. Usually is crucial information that is not directly related to the sphere of interests of market participants. This primarily attributable to the markets where there is significant information not only from the field of economics and finance, but also the socio-political sphere over the world or region example of statistical indicators of changes in the economy and public administration. Such information is quickly outdated, but since its inception it identifies opportunities in the implementation of the interests of market participants. For example, projections of results and progress in the last USA presidential election in November 9, 2016, where resolve conflict intrigue Clinton - D. Trump, was the driver CFD market and caused substantial price fluctuations.

As a result, market participants such important possessions timely information from various areas around the world. For these purposes, participants in financial markets using specialized hardware and software that are based on computers and computer networks. With their help, they support their awareness of everything that could be useful to them in making decisions, and most are committed to A. Toffler called "design information", which is involved in the spread between market participants the information, to facilitate decision-making for its distributors. This instrumental attitude to information transferred from the sphere of market relations in non-market - for example, in the social sphere, in the sphere of science, art and culture. In such circumstances, information from various areas, as well as in financial markets, becoming a tool of society, as news reports identify social needs of individuals and opportunities to meet them. But as the financial markets, information quickly becomes obsolete, forcing individuals always interested in relevant data from different areas. This demand for information creates favorable conditions for its production and distribution.

Under these conditions, individuals form their own view of the world and of the processes occurring in it, based on the information. Its value is that it helps to make the best decision. As a result, individuals consuming a variety of information, become dependent on it,

constantly reacting to changing information supply, which eventually determines the identity of individuals.

Social networks on the Internet represent a set of hardware and software and information services that support participants in this communication network using messaging. The peculiarity of modern social networks is the need to register to participate in it, by creating your profile, which reflects a statement. Terms formation profiles can be specified requirements of owners, managers and public opinion to its users.

According to members of the social network profiles of relatives recognizes them interest of users and grouped so-called "friends." Services, Social support these community members united by common interests and history of information exchanges, the priority themes of communication and others. Over time, these groups were adopted by the contracting rules and the style of communication and personal relations between their members, who mostly supported communication online.

Community groups in social networks monitor compliance with rules and regulations, making social networks to social institutions. Unwilling to comply with these rules exclude groups of "friends". Therefore, Social groups established high level of trust and solidarity, mainly limited information online activity.

This information activity supports and promotes individualism and rationality in decision-making group members of social networks. Mutual trust and solidarity are formed and are not supported by common values and ideals and situational, on ground of temporary consensus in following the rules of their groups. The information that circulates in these groups are constantly changing depending on external conditions, which are, in particular, the functioning of markets, governments, NGOs and various news from other areas. The individual retains his membership in the group, while circulating the information it interests him. This useful information for the individual groups should always be confirmed by active participants. Therefore are no long times mutual obligations of participants in group social networks are not. Their regulatory submission consensus in following the rules and norms of their group information is temporary.

The set of information messages circulating in groups on social networks is changing much faster than the material world, which describes these reports. In the minds of members of group's together information messages up into separate episodes poorly connected. This fragmentation of information is on the events shaping modern life and fragmentation of individuals, including people on social networks. On this occasion Z. Bauman noted that "... the fragmented life tends live episodes as the turn of disconnected events" (Bauman, 2002).

In such circumstances, the common motive activity groups are belonging to short-term information projects. These projects are determined periodically changing themes aggregates information messages that determine the direction of the communication group members of social networks among themselves. The objectives of such projects are almost never achieving a particular result, because it would mean the project ends. Such projects are important ongoing joint activity of participants, defined their individual motivation rather than the requirements of the project leaders. Equally significant objective of the project is the involvement of his new Internet users.

Implementation of joint projects, imitation contracting rules and regulations of information, displays of mutual trust and solidarity often create the illusion that the groups involved in social networks promotes civil society. But the activity of group members, Social weakly associated with the formation of civil society, precisely because it is a manifestation of a virtual environment. Civil society is a support abstract universal values principles of



community that define the social interactions of the real world. However, this does not prevent the emergence of social networks in groups of group leaders of thought that attempt to use the common interests and characteristics of communication between members of their teams in real political purposes.

Members of social networks are easy to learn rules and regulations of the new social order based on rationalization and secularization of public life, typical of developed countries. This is because the Internet itself, users broadcasting rules and regulations of the social order, was the most important factor in its global spread. On the ground of their rationality members of groups of social networks is relatively easy to establish rules and regulations of the social order in their communications in a virtual environment and barely or not at all can implement them in real society.

The reason for these difficulties is that the real social order as opposed to the social networking groups established spontaneously as a result of countervailing actions of many individuals. And this spontaneous social order often imposed targeted activities of the government, which contributes to the not public, private interests and influential representatives of oligarchic clans. Such purposeful activity of the authorities to strengthen the stability of the social order, but rather it creates additional tension. It is also that the actions of the authorities very rarely take into account patterns of spontaneous self-organization in society. Indeed, because of the complexity of social processes and phenomena authorities do not have enough complete and objective information about their development as citizens with experience and practical knowledge in this field in our country is not accepted processes involve the formulation and implementation of government decisions.

The procedure established in the internet rationally defined arrangements. This is possible because Internet - virtual environment created by professionals motivated to rational plans. But in the real world to create and maintain certain rational social order impossible. Because social reality outside the Internet seems in many participants irrationally organized social networks in which government action this support irrationality rather than eradicate. This irrationality is the reason that the participants in the real world social networks more difficult than the Internet, to succeed. And they assess the activities of the government, as an obstacle to the realization of their interests.

Changing social conditions of life requires members of groups of social networks are an activity in the real world, where there are the aforementioned authorities. And in some cases, they begin to show such activity in the real world. Typically, this activity leaders organized groups of social networks through projects are used to their members.

In the political sphere of activity of group members, Social work, when their leaders are trying to influence the definition of critical resources and ways of solutions to the problems of the real world, because these decisions depend on who holds positions in government and manages the resources. In the period of preparation and holding of early presidential elections in Ukraine 25.V.2014 and early elections of deputies in the Verkhovna Rada of Ukraine 26.X.2014 social groups, participants often tried to achieve fairness and justice propaganda campaigns accuracy of the vote count, excluding the effect of administrative resources and others.

On the one hand, such a policy project activity participants social networks similar to the project activity politicians who also seek not so much to realize social goals as possible to attract more people to their political projects for their legitimacy. On the other hand, professional politicians have monopolized sphere of political activity and do not compete with their political projects in any other, including the projects of social networking groups. This is

done primarily through the adoption and application of the law on elections and political activity, giving priority to long-established party policy projects. Sometimes it may be laws prohibiting or restricting the forms of protest. Over the past three years trying to establish such laws were made twice 16.I.2014 Package "dictatorship of law" V. Oleinyk - V. Kolesnychenko (Khomenko, 2014); 24.II.2015, bill number 2225 (on the protection and preservation of state authority) K. Mateychenka (The bill on prohibition of criticism of authorities has been withdrawn from the Rada, 02.03.2015).

The functioning of the market in our country is under conditions of constant violations by law. Informal rules define relationships in the market, unfair competition, the use of administrative resources for private interests. Market relations are area of non-market activities, destroying traditional and religious values, reducing the importance of moral obligation inheritance in decision-making by citizens and officials in various fields. It is no exception policy area. In politics in decision-making and execution have also had a significant morale that, in particular, is the cause of election law. The foregoing confirmed by monitoring the situation in the preparation and conduct of presidential elections in Ukraine in Report on the long-term observation of extraordinary Ukraine Presidential elections (25.05.2014) and deputies in the Verkhovna Rada of Ukraine in October 2014, May 2014.

Most likely, this whole set of problems the citizens of Ukraine estimated as a manifestation of negative trends in the country, which may include growing social inequality, poor quality social security and similar facts. Overcoming this negative trend in the development of many citizens of Ukraine associated with the idea of European integration. The appearance and rooting the idea in the public mind was preceded by a long preparatory period. Then it was announced little understood among ordinary citizens deferment of the European integration process. As a result, a set of factors (unjustified expectations, the crisis in Ukraine, which aggravated against the background of a long-term global crisis) and led to the radicalization of sentiments of people unwilling to put up with what is happening. What happens next is known: from 21.XI.2013 by 22.II.2014 Euromaidan protests in Kyiv and other cities gradually develop in the Ukrainian Evrorevolution (Barkar, 2013).

The revolutionary events took place. But according to a survey Fund "DIF" and "Center for Economic and Political Studies" held in 2013 and 2014, GG, Ukrainians believe that in most areas of life in 2014 significantly worsened the position (even in comparison with 2013 Denim g., which also showed a negative trend).

The manifestation of the negative trends in the Ukrainian society is well understood by managers, entrepreneurs, employees of private companies, workers professions and representatives of other socially active groups whose citizenship required social activity. Because of the habit of rational thinking similarly evaluate the negative trends in society groups and members of social networks. That's why all of these people and actively participated in the previously mentioned protests.

Protests in social networks - a new for Ukraine form social protest. It is a manifestation of the virtualization environment, socio-politically active Ukrainian appearing as a rational answer highly educated and socially active citizens in government efforts to legally limit legal framework civic activities. But the Ukrainian communications features to consider real socio-political and virtual environments. Consider that the experience protest organizational activities in these different environments, because they (the environment) regulate different standards are influenced by various factors and logic development. The virtual environment more efficiently furnished and experience of it has not been replaced experience of participation in real politics, where the results of the project as defined set of objectives and

random factors. So it is with these considerations, the virtual environment can be regarded as ancillary, not an alternative field of civic activities. And the Internet is possible to use as a tool for mobilizing citizens. On the positive change in the real social - political environment, they can be achieved only on condition of focused training people to participate in politics, and this is possible through the lumen and Ukrainian involvement in this realpolitik.

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**ASSESSMENT OF THE BANKING SYSTEM AND REALITIES OF UKRAINE****Volodymyr Kotkovskyy**

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**Abstract.** Article shows the results of the research of current state of Ukrainian banking system at the context of key criteria, drawing attention to the feasibility of implementing a systematic approach to analytical evaluation of its behavior. Factors which have affected performance indicators have been analyzed, indicating possible ways to overcome the crisis.

**Keywords:** bank, banking, analytical assessment, evaluation criteria, analytical segment, the bank's assets, deposit portfolio, the loan portfolio, the income of the bank, bank costs, return on assets, return on equity, advisory segment.

*DOI: <http://dx.doi.org/10.23856/2308>*

**Introduction**

The banking system of Ukraine is under the influence of negative factors caused by unstable phenomena in the economy as a whole. Key representatives of the banking system of Ukraine are the banks that suffer from unstable macroeconomic policy level, quite a significant loss of public confidence, significant currency fluctuations, and inflation burden on the business sector, the low efficiency of the stock market and a lack of investment inflows in leading sectors.

In connection with this, there is an urgent need for constant monitoring of the state of the banking system of Ukraine, and, on this basis, decisions on its future behavior in significant economic challenges. That is the question the analytical assessment of basic criteria that characterize the behavior of banks from the perspective of competitiveness and development in the future. The theme study is quite relevant and modern as gives an information resource in the context of the prospects of the banking sector of Ukraine.

The problem of studying the state of the banking system of Ukraine is not new, but the fluidity of time requires more in-depth study. This argument stems from the need to obtain a more realistic picture of the behavior of the key criteria of banks in Ukraine and possible directions of development. We believe the first stage; analysts are required to clearly defined steps for research. This refers to the preservation of traditional approach to analytical cycles with the establishment of the preparatory consistency, work and final stage of the procedure.

The study of the banking system in general and banks in particular, on the basis of analytical procedures rather subject covered in the writings of such scholars as T. D. Kosova (2008), O. P. Zharkovska (2010), A. M. Gerasymovych, M. D. Alekseienco, I. M. Parasii-

Verhunenکو (2005), O. V. Vasiurenko, K. O. Volokhata (2006), Z. I. Shchybyvolok (2006), F. F. Butynets, A. V. Golovach, G. V. Mytrofanov, K. Ye. Raiewskyi (2001), V. M. Kochetkov (2003), S. T. Piletska, O. A. Saplina (2009) and others. Scientists highlight different approaches to analytical evaluation, but they all agree that reducing the lag between analytic periods is appropriate. Said above shows that criteria analysis study of banks' behavior has to be based on principles of organizing, continuity, science, transparency and, above all, on the principles of consistency and effectiveness.

Research has shown that the basis for the analysis of key criteria for assessing banks laid the theoretical aspects of economic analysis that quite objectively described in the writings of such scholars as G. I. Kupalova (2008), A. G. Zagorodnyi, G. I. Kindratska, Z. O. Koval, O. I. Tyvonchuk (2012), V. M. Ivakhnenko (2006), B. Ye. Grabovetskyi (2009), L. O. Boiko, R. M. Volchek, N. A. Volkov, O. M. Haidaienko (2012). Proceedings of these scholars reveal the methods and techniques of economic analysis and justifying his by staging.

It should be noted that in recent years, narrowing the areas of research, most scientists consider the analytical aspect of banking positions with clearly defined problems in this cycle. Following scientists consider such approach accurate: V. V. Hrapkina (2015), T. V. Pogorelova (2012), O. A. Cricklii, O. Kruhmal (2012), V. V. Onischenko (2012), O. V. Lysenok, O. M. Petruk (2013). The value of these works of scientists lies in the detailed study of certain aspects of banks in Ukraine.

### **Analysis of the main indicators of development of the Ukrainian banking sector**

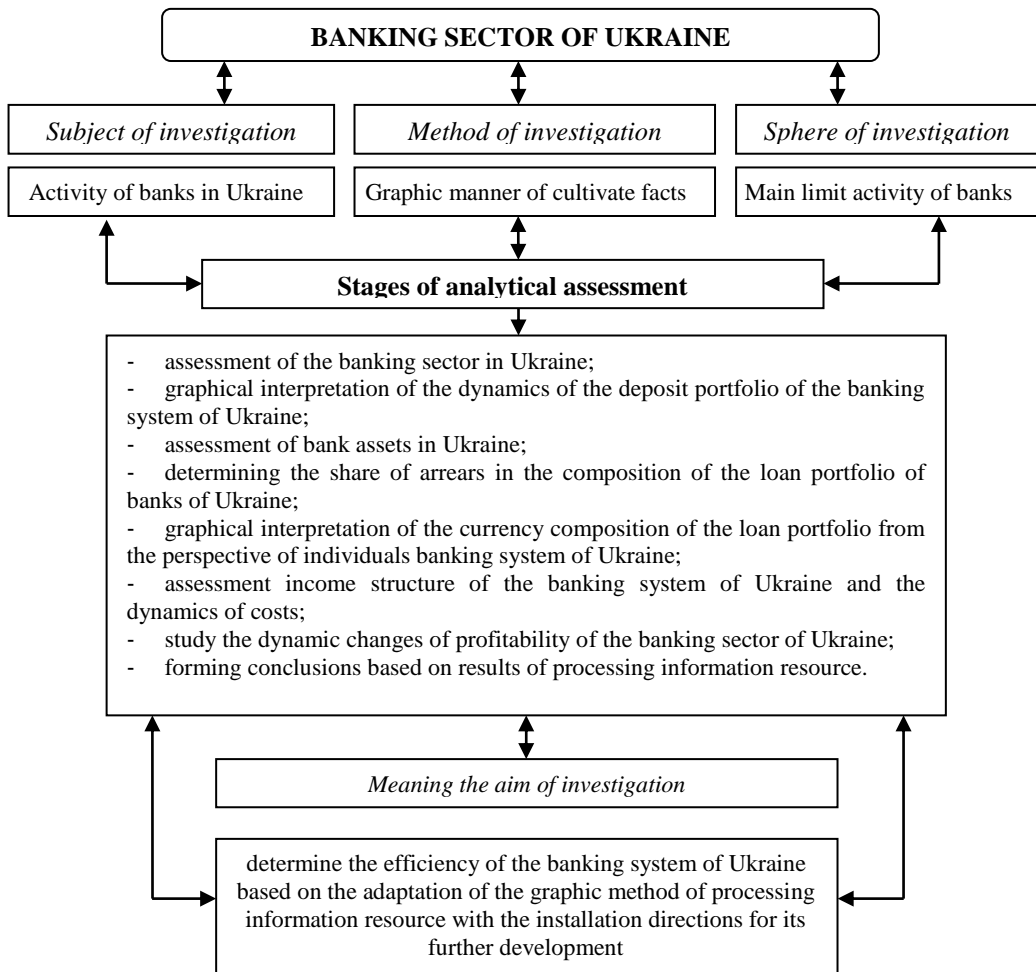
Most experts believe that any phenomenon analysis should be based on the system approach, obligatory displaying the effect of conducted operations. For analytics we would suggest the following algorithm of actions for investigation (Fig. 1).

To assess the state of the banking system of Ukraine was chosen graphical and tabular methods of processing statistical information. This approach was based on expediency visual presentation of research results. Before turning to the study of evaluation criteria specific direction of the banks, is to focus on the study of changes that occurred to the structure of the banking sector of Ukraine in the last period of activity (Table. 1).

Table 1

### **Dynamics of the main components of the banking sector of Ukraine for 2010-2015** (The National Bank of Ukraine)

Indexes	2010	2011	2012	2013	2014	2015
The number of registered banks	194	198	176	180	163	120
The number of active banks	176	176	176	180	147	117
including foreign capital	55	53	53	49	51	41
including with 100% foreign capital	20	20	22	19	19	17
The share of foreign capital in banks,%	40,6	41,9	39,5	34,0	32,5	43,3
Banks in liquidation	18	21	22	17	22	62
Banks with temporary administration	4	4	4	10	8	4



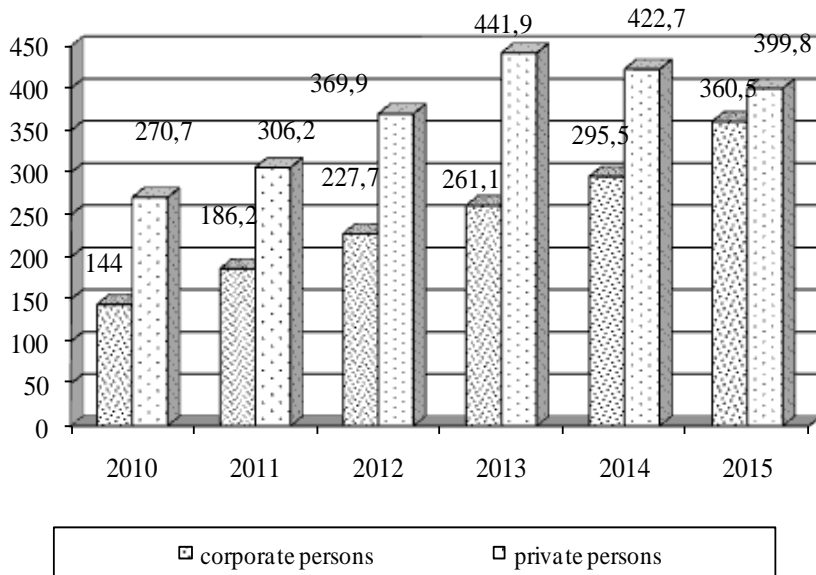
**Fig. 1. Recommendation aspect evaluation stage performance of the banking system of Ukraine (offer authors)**

Studying the dynamics of the main components of the banking sector Ukraine for the years 2010-2015 provided the opportunity to establish that on 01.01.2016 g. In the country, there were 120 registered banks, of which 117 are active banks. The number of banks with foreign capital Ukraine in 2010 amounted to 55 institutions, but the 2016 figure represented 41 institutions. From the perspective of the specific share of banks with foreign capital in the overall composition of banks in Ukraine, significant changes were observed. Since 2012, there has been a steady downward trend in the share of banks with foreign capital in the total stock. On 01.01.2016 the share index was 17%. In the context of the share of foreign capital in the authorized capital of banks in Ukraine over the past six years of operation are traced some changes. Thus, in 2010 the figure was 40.6%, and in 2015 represented the size of 4303%, so growth was at 2.7 percentage points.

The negative trend in the functioning of the banking sector of Ukraine is a significant

increase in the banks in 2015, which are in liquidation, while the number of banks with the interim administration from 2013 is reduced and as of 01.01.2016 g. Was 4 institutions.

One of the key criteria for evaluation of banks in Ukraine is considered a deposit portfolio of size from the perspective of deposits of legal entities in 2015 amounted to 360.5 billion UAH and in terms of the Deposit largest represented 399.8 billion UAH in general graphical interpretation of the dynamics of the deposit portfolio of the banking system of Ukraine for 2010-2016 years Fig. 2.



**Fig. 2. There is graphical interpretation of the dynamics of the deposit portfolio of the banking system of Ukraine for 2010-2016 years, billion UAH (The National Bank of Ukraine)**

Investigation results show that deposit portfolio of legal entities has the largest total value in 2015. Since 2010, the deposit portfolio of legal entities Ukraine's banking system increased by 216.5 billion UAH. However, for the period the deposit portfolio of the banking system of Ukraine in terms of individuals' deposits reached a maximum in 2013 at 441.9 billion UAH, but in 2015 the figure fell by 42.1 billion UAH, that is 9.53%.

We should pay special attention to the state of Ukrainian banking system assets including loan portfolio. Priority assets of banks lie in the ability to accumulate financial strength of banking institutions. From one side, practice shows that the goal of analyzing banks' assets and operations with them is to assess the rationality of the actual structure of assets in terms of ensuring the profitability and stability of the bank. From the other side – to identify ways of optimizing and generalizing prognosis of future results of operations and financial capacity of the banks. Dynamics of assets of the banking system of Ukraine for the years 2010-2015 is presented in Table. 2.

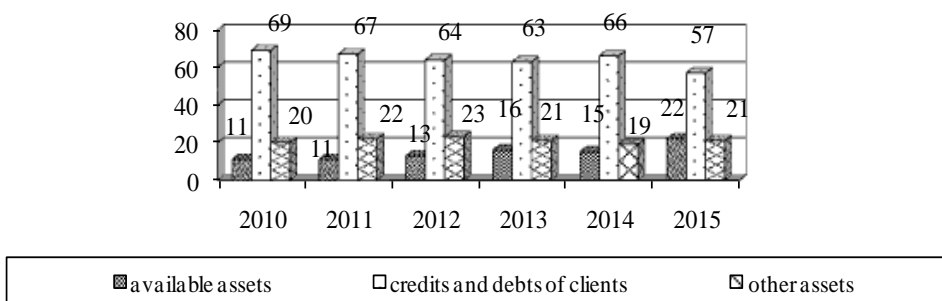
Table 2

**Dynamics of the assets of the banking system of Ukraine for 2010-2015, billion UAH**  
(The National Bank of Ukraine)

Indexes	2010	2011	2012	2013	2014	2015
The banks' assets, including	942,1	1054,3	1127,2	1278,1	1316,9	1254,4
credits granted	755,0	825,3	815,3	911,4	1006,4	965,1
Reserves under active operations	148,9	157,9	141,3	131,3	204,9	321,3
The share of overdue loans in total loans,%	11,2	9,6	8,9	7,7	13,5	22,1

Studying the dynamics of assets of the banking system of Ukraine showed that as of 01/01/2016 p. Their value amounted to 1.25438 trillion UAH. In comparison with 2010 the value of assets of banks in Ukraine grew by 312.29 billion UAH that is 33.15%. In relation to the previous period, the assets of banks in Ukraine decreased by 62.47 billion UAH. In the assets of the banking system of Ukraine the value of loans in 2015 amounted to 965.09 billion UAH, which is 41.27 billion UAH, it is less than in 2014. However, compared with 2010, loans granted rose by 210.06 billion UAH. Significantly it increased the reserves for active operations to a level of 321.3 billion UAH in 2015. In addition, each year changing the share of overdue loans in the total loans of the banking system of Ukraine to the value of 22.1% in 2015. The structure of the banking assets in Ukraine presented in Fig. 3.

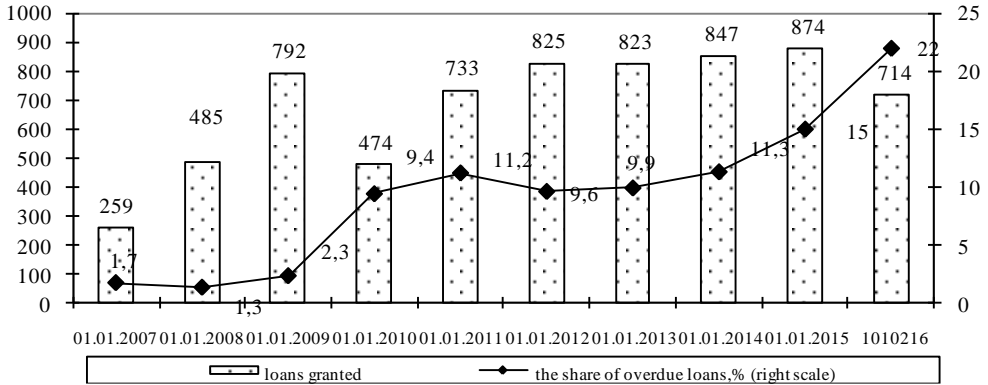
As seen in Figure 3, the share of loans in total assets during 2015 decreased to 17.14% from 66.35% to 57.21%. A large proportion of the assets of the banking system continue to be in cash and cash equivalents (12.30% as of 01.01.2016 g.). The volume of outstanding credit debt in 2015 is increased by 30.3 billion UAH. (Up to 157.8 billion USD), its share was 22.1% of the total loan portfolio (Fig. 4).



**Fig. 3. Graphical interpretation of the structure of banking assets in Ukraine for 2010-2015., % (The National Bank of Ukraine)**

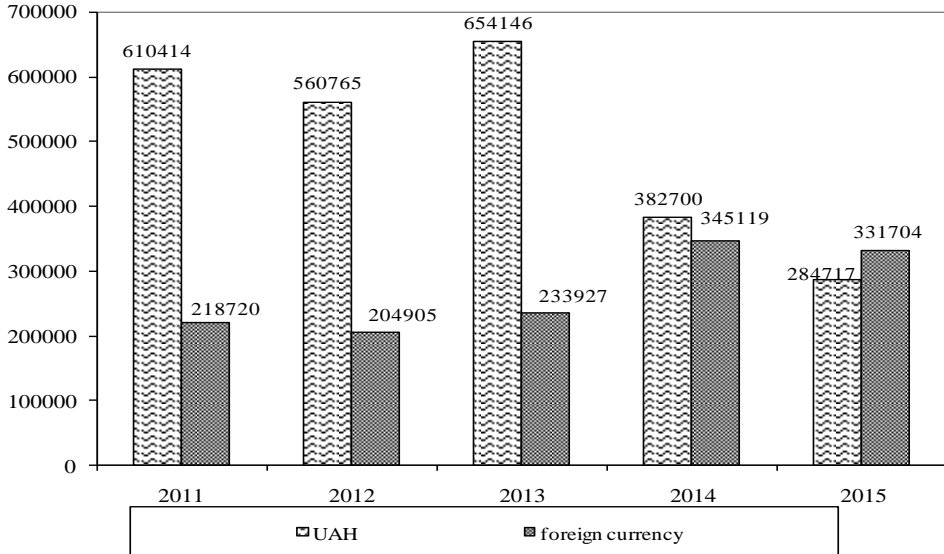
Consequently, the banking system of Ukraine continues to be characterized by low lending, due to the relatively high requirements for potential borrowers, as well as worsening the main industrial markets offset activity of banks in the placement of funds in government bonds, interbank loans and other alternative assets.





**Fig. 4.** There is graphical interpretation of the dynamics of the loan portfolio and the share of overdue debt in the banking system of Ukraine for 2006-2015 (The National Bank of Ukraine)

Statistical data banks of Ukraine show that by 2016 observed a steady trend towards increasing the share of problem loans in the loan portfolio and there was a significant deterioration in the structure of the loan portfolio of domestic banks (Fig. 5)



**Fig. 5.** There is graphical interpretation currency structure of loan portfolios of private clients banking system of Ukraine for 2011-2015., million UAH (The National Bank of Ukraine)

In 2015, the amount of foreign currency loans represented value of 331.704 billion UAH, in comparison with the previous period less than 13.415 billion UAH. Thus the period of study, marked by constant fluctuations in the amount of foreign currency loans. The largest share of foreign currency loans was recorded in the banking system of Ukraine in 2014 at 345.119 billion UAH. In addition, in 2012 the structure of credit portfolio of banks Ukraine can be considered the worst since the value of loans in foreign currency amounted to only 204.905 billion UAH.

It should be noted that the impact of the banking system of Ukraine, to some extent, depend on the income level (Table. 3).

Table 3

**Analysis of the structure of income of the banking system of Ukraine for 2011-2015, %**  
(The National Bank of Ukraine)

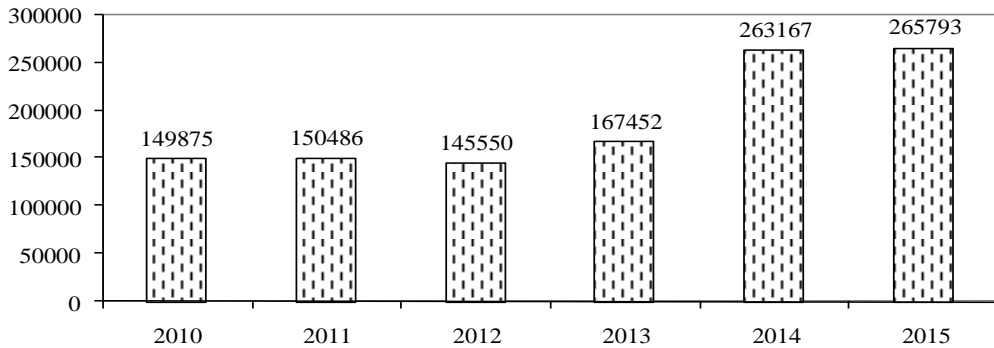
Indexes	Relative share, %					Variance, % (+;-)			
	2011	2012	2013	2014	2015	2012-2011	2013-2012	2014-2013	2015-2014
Interest on profit	79,39	78,13	76,93	71,96	67,85	-1,26	-1,2	-4,98	-4,11
Fee-based income	12,94	14,07	14,79	13,45	14,26	+1,13	+0,72	-1,34	+0,81
Result from trading operations	2,8	2,15	1,96	7,38	10,79	-0,65	-0,19	+5,42	+3,41
Other operating income	4,01	3,85	3,03	4,8	4,8	-0,16	-0,83	+1,77	0
Other income	0,87	1,8	3,29	1,41	2,3	+0,93	+1,49	-0,88	-0,11
All together	100,00	100,00	100,00	100,00	100,00	×	×	×	×

Table 3 presents an analysis of income structure of the banking system in 2011-2015. There is an analysis of the income of the banking system during 2011-2015. Helps identify the following key trends:

- occupy the largest share, interest income, 79.39% of total revenues in 2011, 78.13% in 2012, 76.93% in 2013, 71.96% in 2014, and 67.85% in 2015. This suggests that interest income tend to decrease in 2015 compared to the year 2014, their share in the structure fell by 4.11 percentage points, and in 2014 compared to 2013 - to 4.98 p. p. Interest income (at 80 to 85%), traditionally the dominant component of gross revenues. This is because the loans in various forms has been and remains the main focus of the banking activities;

- commission income is the second largest proportion of bank income source. The share of fee income to total income of the banking system over the period also increased from 12.94% to 14.26%, or 1.32 percentage points increasing the proportion of fee income shows that the banks had difficulty obtaining basic interest income and their management is likely trying to increase revenues from paid services and commissions, providing customers with innovative services. Still, the share of fee income can grow not only due to problems in the work, but also by expanding the list of banking operations, introduction of new products and technologies, increasing the number of customers and consumers of banking services.

The profitability of Ukrainian banking system is being highly affected by expenses. During the years 2010-2015 Ukraine's banking system expenses can be characterized by variable trend (Fig. 6).



**Fig. 6. Graphical interpretation of the dynamics of the cost of the banking system of Ukraine for 2010-2015 (The National Bank of Ukraine)**

Therefore, as of 01/01/2016 p. Ukraine's banking system costs are the sum of 265.793 billion UAH. In comparison with 2010 the value of the cost of the banking system Ukraine increased by 1.8 times (149.875 billion UAH. in 2010). The lowest cost banking system of Ukraine celebrated in 2012 in the amount of 145.55 billion UAH. It should be noted income of the period amounted to 150.449 billion UAH, thereby obtaining profit in the amount of 4.899 billion UAH. Profitable activity banking system of Ukraine as demonstrated in 2013, which represented revenues of UAH 168.888 billion UAH, at a cost of 167.452 billion UAH.

The final stage of investigation of the banking system of Ukraine is an indicator of profitability, which significantly changed and describes the lack of stability in the banking sector of the country (Table. 4).

Table 4

**Dynamics of the main indicators of profitability of the banking system of Ukraine for 2011-2015, % (The National Bank of Ukraine)**

Indexes	Relative share, %					Variance, % (+;-)			
	2011	2012	2013	2014	2015	2012-2011	2013-2012	2014-2013	2015-2014
Return on assets, <i>ROA</i>	-0,76	0,45	0,12	-4,07	-5,12	+1,21	-0,33	-4,19	-1,05
Return on equity, <i>ROE</i>	-5,27	3,03	0,81	-30,46	-47,78	+8,30	-2,22	-31,27	-17,32

Results of the analysis indicate the general deterioration of the efficiency of the banking system of Ukraine, as return on equity and assets declined during 2011-2015, while capital increased multiplier. In this regard it should be noted that the negative values of the return on equity indicates a lack of equity banks in Ukraine. From table 4 shows that the return on assets and equity of the banking system of Ukraine for the period decreased respectively by 4,36% (ROA) and 42,51% (ROE). The above declined in performance mainly due to a significant decrease in net interest margin of the banking system of Ukraine.

Most scientists and experts from banking believe that the banking system of Ukraine should intensify the accumulation of equity and increase the quality of management as capital

growth is accompanied by an increase of its effective use. According to S.O. Kushnir and M.Yu.Vernyudub the success of the banking system of our country largely depends on banks selected by the methods and techniques of money management. However, M.D. Alekseienko notes the fact that the severe demands on the quality, adequacy and transparency of the capital of banks Ukraine pose obvious need to rethink the entire long-term development strategy of the national banking system and sending the efforts to create in our country is really big stable financial institutions.

It is clear that the crisis in the banking system of Ukraine are caused by factors such as frequent changes in government regulation of the banking system; insufficient removal of entry barriers to the market of banking services; changing consumer behavior banking services; serious difficulties domestic banks related to the return of significant external borrowings that are actively involved in previous years; volatility in the foreign exchange market; fluctuations in interest rates on loans. From the studies follows the need to adapt the measures aimed at ensuring the financial stability of the banking system of Ukraine.

### Conclusions and suggestions

The research status and realities of the banking system of Ukraine gives grounds to determine that the existing problems considerably reduced the efficiency of the banking institutions. It becomes clear that the banking system of Ukraine requires immediate effective measures that can stabilize somewhat current fluctuations. We believe in order to ensure financial stability of the modern banking system of Ukraine should: substantially improved legislative platform to improve the quality of sanitation procedures, reorganization and liquidation of banks; based on attraction of additional share capital increase the capitalization of the banking sector; increase transparency of domestic banks; incentives for those local banks that lend to innovative projects; adopt measures in balance and stabilize the dividend policy.

Of course, the proposed measures are closely intertwined, and as a result, can provide an effective impact on the banking system of Ukraine in the future, taking into account existing realities.

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## ENERGY EFFICIENCY IN THE EVALUATION CRITERIA OF ENTERPRISES

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**Abstract.** The article investigated some aspects of global problems and their impact on energy efficiency in Ukraine, as a key KPI- factor in the financial and economic analysis of a company.

**Keywords:** energy efficiency, energy savings, indicators of the energy efficiency, energy consumption, 3E model, monocentric model of energy.

DOI: <http://dx.doi.org/10.23856/2309>

**Wstęp**

W obecnym stanie, w którym znajduje się ukraińska gospodarka, immanentną częścią są takie cechy jak niepewność, dynamiczność oraz wrażliwość na działanie czynników zewnętrznych. W kontekście dalszego pogorszenia wskaźników makroekonomicznych oraz kluczowych indyktorów rozwoju gospodarczego, np. PKB czy PKB per capita, ciągłej uwagi wymaga zarządzanie zasobami nie tylko kraju jako całości, a też poszczególnych przedsiębiorstw. Takie warunki tworzą konieczność znalezienia skutecznego i giętkiego mechanizmu stałego rozwoju gospodarczego zarówno na poziomie makro, jak i mikro.

We współczesnych warunkach rynkowych, w których coraz bardziej ostre są globalne problemy ludzkości, jak ograniczoność i nieodnawialność pewnego zakresu zasobów, ochrona środowiska naturalnego, korzystanie z alternatywnych źródeł energii i zasilenia oraz utylizacja i przechowywanie odpadów niebezpiecznych, - o wiele istotniejsze stają się problemy związane ze znalezieniem sposobów na zmniejszenie kosztów, zwłaszcza materialnych, ze względu na ich rosnący deficyt. Rozwojowi gospodarczemu towarzyszy ogólny wzrost spożycia zasobów energetycznych, natomiast współczesne modele ich efektywnego wykorzystania są oparte na jak najwcześniejszym określeniu globalnych asymetrii zasobów, które są w stanie zapewnić przedsiębiorstwom trwałe przewagi konkurencyjne. Skuteczna realizacja zapowiadanych narodowych programów energooszczędności i efektywności energetycznej jest mało prawdopodobna bez wystarczającej ilości zasobów naturalnych i intelektualnych (humanistycznych). Niestety, kraj ma dość skomplikowany system dostępu do zasobów energetycznych. Obecne ramy prawne są kontrowersyjne i bardziej chronią interesy monopolistów naturalnych i grup oligarchicznych, co przyczynia się do dalszego rozwarstwienia społeczeństwa i powstania dysproporcji w koszyku konsumpcyjnym ludności oraz jej poruszenia w stronę opłat rachunków komunalnych. Ponadto, koszt podłączenia do sieci i systemów zasobów energetycznych jest nie tylko wysoki, ale również ma pewne podteksty (dotyczy to nie tylko osób prywatnych, ale także odbiorców przemysłowych). Poza tym, obiektywnie, w

kategoriach terażniejszości, zasoby naturalne nie są nieskończone. Wydobycie, transport i dostarczanie ich do klientów kosztuje wielkich sił i środków. A jednak problemy z oszczędzaniem energii w ciągu ostatnich kilku lat są jedynie deklarowane, ale nie rozwiązane. Konieczne jest tworzenie i doskonalenie mechanizmów ekonomicznych i organizacyjno-prawnych mających na celu bardziej intensywne wprowadzanie technologii energooszczędnych przy zachowaniu / poprawie jakości i stabilności funkcjonowania systemu komunalnej infrastruktury gospodarki miejskiej. Pomimo ciągłego doskonalenia infrastruktury energetycznej i zwiększenia efektywności energetycznej w ukraińskich sektorach przemysłu: hutnictwo, transport, przemysł żywnościowy i chemiczny, inżynieria maszynowa, Ukraina nadal ma znacznie niższą efektywność energetyczną w porównaniu do krajów Unii Europejskiej. Ponad połowa tego potencjału jest skoncentrowana w hutnictwie (z powodu ciągłego stosowania energochłonnego martenowskiego sposobu odlewania stali), co w najbliższej przyszłości powinno stać się głównym drajwerem wzrostu efektywności energetycznej Ukrainy w latach 2017-2020.

Ponadto, konieczne jest stymulowanie podwyższenia atrakcyjności inwestycyjnej w uruchomieniu energooszczędnych technologii przez inwestorów prywatnych. Kwestia deficytu zasobów energetycznych, nawet w najbliższej przyszłości, jest również aktualna dla dużych korporacji międzynarodowych (np. Bosch-Siemens). Podwyższenie efektywności energetycznej i zmiana struktury produkcji energii elektrycznej muszą iść równoległo. Według Międzynarodowej Agencji Energetycznej (MAE), udział źródeł odnawialnych w ogólnej strukturze energetycznej do roku 2035 wzrośnie do 30%. Pozostałe 70% mają stanowić tradycyjne źródła energii. Jednakże, ich zasoby są wciąż ograniczone, wartość ciągle rośnie, a ich stosowanie ma negatywny wpływ na klimat planety. Jedną z dyrektyw unijnych, do realizacji których dołączyła się Ukraina zobowiązując się do jej implementacji w trakcie integracji z Europejską Wspólnotą Energetyczną jest Dyrektywa ds. obniżenia emisji z dużych obiektów spalania (Large Combustion Plant Directive EC/80/2011). Wprowadzenie i realizacja jedynie tej inicjatywy wymaga od Ukrainy około 10 miliardów Euro inwestycji. Dlatego, z punktu widzenia efektywności wytwarzania energii elektrycznej, budowa nowych współczesnych jednostek energetycznych jest bardziej opłacalna ekonomicznie niż modernizacja istniejących, co zawsze jest pragnieniem ich kierowników.

Tylko radykalna poprawa wskaźników efektywności energetycznej pomoże nam zmniejszyć spożycie energii, oszczędzić zasoby, zmniejszyć wartość wdrażania odnawialnych źródeł energii, zmniejszyć ilość emisji dwutlenku węgla (CO<sub>2</sub>) oraz spowolnić wzrost cen energii elektrycznej dla gospodarstw domowych i dla celów przemysłowych. Dlatego podwyższenie efektywności energetycznej będzie odgrywać kluczową rolę w przejściu do zasilania ze źródeł odnawialnych (Denner, 2014).

**Określenie zadania.** Głównym celem tego artykułu jest zbadanie zagadnień i aspektów efektywności energetycznej poprzez pryzmat ewolucji teorii zasobów i jej transformacyjnych zmian w paradygmacie tradycyjnego modelu zasobów w gospodarce oraz wpływ tych zmian na tworzenie kluczowych KPI-wskaźników w analizie stanu finansowo-gospodarczego przedsiębiorstw.

**Wyniki.** Efektywność energetyczna w pełni i na stałe ma wejść do świadomości społecznej. W swoim najnowszym raporcie IEA (International Energy Agency) twierdzi, że rozwiązania energetycznie efektywne nie mają właściwego poszerzenia na rynku i przez to nie mogą zapewnić niezawodnych dostaw energii elektrycznej oraz dostępności i realizacji działań mających na celu ochronę środowiska. Efektywność energetyczna powinna stać się ważnym punktem odniesienia, a kluczowym czynnikiem przy podejmowaniu decyzji

inwestycyjnych przez tysiące firm i użytkowników końcowych na całym świecie. Jedyne w tym przypadku społeczeństwo zacznie zbierać plony z efektywnego wykorzystania energii.

Powszechnie mówi się o obniżeniu podatków, poprawie klimatu inwestycyjnego oraz ogólnego standardu życia na świecie, ale naprawdę niewielu ludzi tak bardzo martwi się o oszczędzanie energii. Jednak rozwiązanie tego problemu również powinno stać się naszym głównym celem. W tym kierunku został już podjęty szereg prawidłowych kroków. Na przykład, w Europie z powodzeniem stosowane jest etykietowanie poziomu spożycia prądu przez sprzęt AGD (wszystkim są znane przykłady etykietowania lodówek, pralek, zmywarek, itp.). Dużo uwagi poświęca się modernizacji mieszkań (szacowanie potencjału oszczędności energetycznej wykazało, że gospodarstwo mieszkaniowe jest na drugim miejscu po hutnictwie), oszczędności cieplnej w przedsiębiorstwach i w cyklach produkcyjnych potężnych firm. Wreszcie, pewnego postępu osiągnięto w rozwoju pojazdów napędzanych elektrycznie, co znalazło odzwierciedlenie w przyjęciu szeregu aktów prawnych dotyczących ulgowej odprawy celnej samochodów z silnikiem elektrycznym. Nawet trwała dyskusja w sprawie taryf naprąd ma swoje pozytywne cechy, oznacza to przecież, że kwestia oszczędzania energii zaczyna obejmować świadomość społeczną.

Dla jasności rozpatrywanej kwestii trzeba rozróżnić pojęcia efektywności energetycznej i energooszczędności. Efektywność energetyczna to jest wydajne (racjonalne) wykorzystanie zasobów energetycznych. Spożywanie mniejszej ilości energii, aby zapewnić ten sam poziom podaży energetycznej budynków lub procesów technologicznych w przemyśle. Ta dziedzina wiedzy znajduje się na skrzyżowaniu inżynierii, gospodarki, prawa i socjologii.

W przeciwieństwie do energooszczędności (oszczędności, oszczędności energii) dążącej głównie ku zmniejszeniu zużycia energii, efektywność energetyczna (użyteczność spożycia energii) jest użyteczną (efektywną) konsumpcją energii (Wikipedia). Każde efektywne przełomowe odkrycie zawsze znajduje się na skrzyżowaniu nauk. Jak już zauważyliśmy, efektywność energetyczna łączy w sobie 4 nauki:

– inżynierię zapewniającą rozwój gospodarki przez przełomowe innowacje oparte na optymalizacji procesów technologicznych, z uwzględnieniem czynników technicznych. Na tym właśnie polega *funkcja twórcza albo kreatywna* systemu efektywności energetycznej;

– bezpośrednio gospodarkę, którą poprzez czynniki ekonomiczne (przede wszystkim finansowe) i wskaźniki sprzyjadalszej oszczędności i oszczędnemu wykorzystaniu zasobów (nawet wtedy, gdy zasoby jeszcze są dla ludzkości nieograniczone). Tu ukazuje się *funkcja motywująca* efektywności energetycznej;

– poprzez socjologię i jej funkcję *regulacyjną* efektywność energetyczna dostaje dane dotyczące wpływu socjologicznego i antropologicznego na środowisko, aktualizując warstwę zagadnień środowiskowych, oraz poprzez spełnianie potrzeb własnych i rozwiązując problemy indywidualów, zapewnia osiągnięcie długotrwałych skutków społecznych;

– i, wreszcie, *prawo* pozwala na rozwój efektywności energetycznej w obrębie pewnego koła prawniczego, na pierwsze miejsce stawiając odpowiedniość efektywności energetycznej normom i standardom (obecnie zobowiązującym standard międzynarodowy ISO 50001 oraz dyrektywy europejskie). W ten sposób możemy zbadać rozwój i tworzenie *funkcji kontrolującej* w systemie efektywności energetycznej.

W celu lepszego zrozumienia podporządkowania zagadnień efektywności energetycznej warto zaprezentować główną istniejącą dziś hierarchię instytucji ponadnarodowych, które nadzorują te zagadnienia:



1. Międzynarodowe partnerstwo na rzecz współpracy w dziedzinie efektywności energetycznej (IPEEC).

2. Międzynarodowa Agencja Energetyczna (MAE) – faktycznie główny organ regulacyjny na świecie.

3. Na terenach UE – European Commission – European Councilforan Energy Efficient Economy (w składzie Komisji Europejskiej - Rada Europejska na rzecz energetycznie efektywnej gospodarki).

4. Ukraina: Państwowa Agencja na rzecz efektywności energetycznej i energooszczędności.

Obecnie energię można rozpatrywać punktu widzenia ewolucji teorii zasobów jako jeden z głównych czynników, który w coraz większym stopniu przejmując cechy asymetrii zasobów. Od lat 60. XX wieku teoria zasobów przeszła przez kilka etapów i odpowiednich koncepcji, z których najważniejsze były i są następujące (Smyrnov, 2012: 34; Klymenko, 2014: 27):

- Klasyczna koncepcja zasobów oparta na VRIO-analizie, w której za główny element uważane były zasoby w swoim sensie fizycznym;

- Koncepcja dynamicznych możliwości, w której priorytet w alokacji zasobów przesunął się na misję i cele przedsiębiorstwa w perspektywie strategicznej, a także ze względu na "humanizację" przyrody zasobów w teorii ekonomicznej na pierwszym planie znalazły się nie zasoby, lecz możliwości ich efektywnego wykorzystania;

- Koncepcja asymetrii zasobów – dziś jest szczyt rozwoju koncepcji zasobów, w których akcent robi się na poszukiwaniu unikalnych zasobów mogących zapewnić strategiczną konkurencyjną przewagę i jak najdłuższe ich wykorzystanie.

Opierając się właśnie na teorii asymetrii zasobów i lukach informacyjnych, które istnieją obecnie nie tylko w skali mikro (przedsiębiorstwa), mezo (regiony, przeważnie branży), ale również w skali globalnej i na poziomie makro (świat, państwo i gospodarka jako całość) możemy założyć, że to właśnie energia i jej efektywne spożycie już stały się, są teraz, a jeszcze przez długi czas będą dokładnie tym unikatowym zasobem asymetrycznym, którego posiadania czy kontroli nad nim powinny pragnąć wszystkie istniejące obiekty gospodarki i państwa.

Jeśli chodzi o efektywność korzystania z pewnego zasobu, a przecież energia, jak już zdefiniowaliśmy, faktycznie jest innowacyjnym zasobem, to w celu efektywnego zarządzania i obliczenia, trzeba ją zmierzyć i ocenić (Smyrnov, 2014: 127). Wskaźniki dokładne i znaczące (kryteria) efektywności energetycznej są niezbędnym narzędziem w skutecznej polityce publicznej. Ich głównym zadaniem jest ocena potencjału energooszczędności, ustalenie odpowiednich wskaźników docelowych oraz monitorowanie skuteczności polityki publicznej. Zadaniem Monitorowania efektywności energetycznej Ukrainy (MEU) jest obliczenie wskaźników, które spełniają wyżej wymienione wymogi. Współczesna metodologia MEU oparta jest na metodzie dekompozycji końcowego spożycia energii w odniesieniu do sektorów i gałęzi przemysłu, zaproponowanej przez Międzynarodową Agencję Energetyczną (MAE). Takie podejście pozwala na wyodrębnienie głównych czynników determinujących spożycie energii: struktury gospodarki, działalności gospodarczej i poboru energii, oraz na uzyskanie bardziej ścisłych szacunków efektywności energetycznej w porównaniu do szacunków standardowych (Smyrnov, 2014: 4-8).

Zbadana przez nas metodologia oceny efektywności energetycznej Ukrainy oparta jest na zaprojektowanej przez Międzynarodową Agencję Energetyczną metodzie dekompozycji końcowego spożycia energii przez sektory i gałęzie gospodarki. Metoda ta pozwala na

rozdzielenie głównych czynników determinujących konsumpcję energii: działalności gospodarczej, struktury gospodarki oraz poboru energii przez produkcję, pozwalając z kolei na uzyskanie bardziej dokładnych szacunków efektywności energetycznej w porównaniu ze standardowymi (ilość zasobów spożyta na wyprodukowanie jednostki produkcji). Do dekompozycji zmian w zużyciu energii stosowana jest metoda logarytmicznej średniej Divisia 1 (Logarithmic Mean Divisia 1 (LMDI)). Należy pamiętać, że jest to metoda preferowana dzięki jej ścisłemu uzasadnieniu teoretycznemu. Innowacyjność proponowanej metody dekompozycji MAE polega na wykorzystaniu różnych wskaźników efektywności energetycznej do największych (energochłonnych) odbiorców zasobów energetycznych: branży przemysłu, rolnictwa, sektora usług, budownictwa, sektora mieszkaniowego i produkcji energii w elektrowniach ciepłych. Jako wzorzec efektywnego spożycia energii ustawiona jest średnia poboru energii odpowiedniego sektora/gałęzi gospodarki w Unii Europejskiej. Zatem efektywne spożycie energii na Ukrainie oblicza się pod tym warunkiem, że każda branża osiągnie poziomu poboru energii w UE przy zachowaniu obecnej struktury gospodarki (Dodonov, 2015; OECD/IEA, 2015; OECD/IEA, 2016; Taylor, Lavagne, d'Ortigue, Trudeau, Francoeur, 2008).

Nie biorąc pod uwagę właśnie matematycznych wyrażeń każdego ze wskaźników z grupy czynników wpływu (działalność gospodarcza, struktura gospodarki i pobór energii przez produkcję), należy jednak zwrócić uwagę na kryteria i zasady, zgodnie z którymi Ukraina powinna dążyć do standardów efektywności energetycznej przyjętych w Unii (obliczenia wskazują na to, że Ukraina ma istotny potencjał energooszczędności). A jeśli nasz kraj osiągnie takiego poziomu efektywności energetycznej jak kraje Unii, to pozwoli to zaoszczędzić 40 mld m<sup>3</sup> gazu - prawie 2 razy więcej niż zakres importu w roku 2014).

Z kolei, do obowiązkowej dalszej oceny efektywności spożywania zasobów energetycznych przedsiębiorstw konieczne jest wprowadzenie dodatkowej grupy kluczowych wskaźników i indyktorów, które mogą być zgrupowane pod tytułem „MODEL 3E” - Energy Efficiency Economy, podstawowymi zasadami i metodami której mają stać się następujące (Denner, 2014):

1. Osiągnięcia dotyczące przejrzystości i poprawy świadomości społeczeństwa i państwa jako całości, a także wyeliminowanie asymetrii informacyjnych.

Stosunek potencjału spożycia energii do potencjału energooszczędności powinien stać się wiele bardziej przejrzysty i zrozumiały. W Unii Europejskiej, szczególnie w Niemczech, w tym kierunku został wykonany słuszny krok, wprowadzający wymogi wobec przeprowadzania audytu energetycznego obiektów i systemu zarządzania spożyciem zasobów energetycznych. Umożliwiło to także połączenie kwestii energetyki i ekologii w polityce korporacyjnej.

2. Opracowanie przejrzystych i zrozumiałych standardów produktów kluczowych.

Biorąc pod uwagę fakt, że w latach 2013-2015 był realizowany program na rzecz ciągłego doskonalenia standardów efektywności energetycznej na przykładzie MAE, na Ukrainie wystarczy zrealizować szereg przedsięwzięć w branży biznesowej oraz przemysłowej. Takie podejście powinno być stosowane w przyszłości w odniesieniu do innych produktów, które są certyfikowane i pobór energii których musi zostać zmniejszony. W tym przypadku jedynie uczciwa konkurencja i maksymalna przejrzystość będą decydującymi czynnikami sukcesu.

3. Wykorzystanie innowacyjnych instrumentów finansowych.

W warunkach braku środków finansowych na realizację realnych nakładów kapitału w zaopatrzenie energetyczne wdrożyć się do stosowania innowacyjnych modeli finansowych

na kształt partnerstwa między sektorem publicznym a prywatnym, albo stosować rozwiązania wpływające na podpisanie kontraktów. Jako dodatkowenarzędzia finansowe mogą być stosowane programy wsparcia oferowane przez wspólnotę europejską, ale pod ścisłym nadzorem spełnienia właściwych dyrektyw. Ogromny potencjał wobec korzystania z różnorodnych instrumentów finansowych ma mały i średni biznes (MSB), którego rozwój jest obecnie na Ukrainie dość skomplikowany, chociaż doświadczenie naszych najbliższych sąsiadów europejskich mówi nam o sytuacji przeciwnej.

#### 4. Nowe możliwości w sektorze usług.

Maksymalny poziom niepewności na dzisiejszym rynku należy do usług, których rozwój zamieniłby model efektywności energetycznej w bardziej atrakcyjną. Komisja Europejska przyjąwszy dyrektywę w sprawie efektywności energetycznej i przewidując w niej opracowanie obowiązkowych modeli podwyższenia efektywności energetycznej stworzyła warunki do wyeliminowania tej luki.

Dyskusja na temat sposobów i środków osiągnięcia największej efektywności energetycznej staje się bardziej żywa na wszystkich poziomach: w dziedzinie politycznej, biznesie oraz społeczeństwie. Ważną rolę w tym procesie odgrywa MAE, która regularnie publikuje rzetelnie przygotowane materiały zawierające ważne informacje na temat kluczowych wskaźników w dziedzinie energetyki. Udany przykład takich publikacji są następujące: "Wskaźniki efektywności energetycznej: znaczenie dla opracowania polityki" i "Wskaźniki efektywności energetycznej: statystyki podstawowe" (2012-2015).

Biorąc pod uwagę wszystko określone wyżej, możemy założyć, że energia i jej składniki jako zasób kluczowy i asymetryczny musi zająć właściwe miejsce w klasycznym zestawieniu czynników zasobów, takich jak ziemia, praca, kapitał, talent przedsiębiorczy oraz informacja.

To właśnie przejście do 4. i 5. układów technologicznych, do gospodarki sztucznego intelektu (Artificial Intelligence - AI), obliczeń kognitywnych (Cognitive Computing) i wielkich danych (Big Data), a także symbioza gospodarki wiedzy i innowacyjnych zasobów nietradycyjnych pozwalają nam stwierdzić, że główną podstawą wszystkich zmian i transformacji zarówno w przeszłości jak i w przyszłości będzie energia nie tylko w sensie substancji fizycznej, ale też w sensie psychologicznego aspektu życia i działalności człowieka, w sensie głównej siły intelektualnej i siły napędowej postępu technologicznego i rozwoju gospodarczego. Dlatego klasyczny paradygmat teorii zasobów zyskuje nową interpretację i znaczenie. Teraz w centrum uwagi znajduje się kluczowy, aktualnie uświadomiony i asymetryczny zasób: ENERGIA. W związku z tym, ze swej strony również proponujemy nazwę nowej koncepcji zasobów jako MONOCENTRYCZNY ENERGETYCZNY MODEL ZASOBÓW.

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## THE BASIS OF COMPETITIVENESS OF ENTERPRISE PRODUCTS

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**Abstract.** The article deals with a systematic approach to the level of enterprise competitiveness, which is based on the results of comparative monitoring of competitors' products, analysis of the enterprise products and competitors. The author identifies the strengths and weaknesses of the enterprise products. This approach is aimed at achieving a high level of competitive advantage in a particular segment of the consumer market. It has contributed to achieving a high level of efficiency of marketing activity in the conditions of the specific market situation.

**Keywords:** competitiveness of products, enterprise, consumers, competitive advantage, market segment.

*DOI: <http://dx.doi.org/10.23856/2310>*

### Introduction

The competitiveness of products is a complex characteristic which takes into account a large number of interrelated factors. The evaluation of competitiveness should include consumer attractiveness and the producers' interests in production and sales of these products. The economic factors determine the competitiveness of goods which reflects the interests of consumers and producers. Moreover, competitive factors reflect not only the parameters of similar products, but also characterize the needs of potential buyers.

The products competitiveness is often a complex, material-intensive and knowledge-intensive phenomenon. It is not always easy to sell products in the market conditions for the reason that it is necessary to reach a balance between the producer's costs and value of products and meet customer's needs. However, only in this case, the producers will win a competition.

The company requires continuous improvement of products competitiveness, increase of sales volumes in the market segment by improving the quality of existing, or issuing new products that meet the needs of consumers at a higher competitive level.

### The competitiveness of company products

Under market conditions competition is a natural, objectively existing phenomenon. It's a law of commodity economics. It's a main goal of producers to increase productivity of their company, expand production scale and implement innovation, new forms of management of production and wages, etc.

The positive role of competition in a market economy is evident in a number of functions that it performs. It directly affects the efficiency of production, raising its technical level, providing improvement of quality and expansion of the product.

The competing products on the market are compared by consumers for compliance with its requirements. The category "competitive product" is based on the determination of certain conditions, which allow classifying consumer product characteristics. The products can meet a need of both mass market and the sphere of personal consumption, it is necessary that parameters of products match the parameters of the consumer needs. The marketing activities of the enterprise should be based on study of technical and economic indicators which usually give quantitative characteristics of products. These indicators are widely used in evaluation of the products competitiveness. The producers should make management decisions which will strengthen the competitive advantages of its products on the markets. In this case producer needs evaluation of products' competitiveness in a particular market situation.

The competitiveness of products is a complex characteristic which takes into account a large number of interrelated factors. The evaluation of competitiveness should include consumer attractiveness and the producers' interests in production and sales of these products. The economic factors determine assessing of the competitiveness of goods which reflects the interests of consumers and producers. Moreover, competitive factors reflect not only the parameters of similar products, but also characterize the needs of potential buyers.

In today's economy, the evaluation of the products competitiveness is an area of analysis. The results of such analysis can be applied in the following areas:

- as an information basis for marketing decision making in planning innovative, technical and marketing policy of the enterprise;
- in determination of development reserves for new markets;
- in formation of regulation mechanism of competitiveness of products to strengthen the competitive position of products in a particular market segment.

However, only a systemic approach to determination of company competitiveness can give chance to achieving a high level efficiency of business activities.

The results of the study indicate a large number of products competitiveness factors classifications. The level of competitiveness of enterprise depends on certain factors. So we should use comprehensive approach to classification of the factors. It is important to highlight:

- the focus of their impact on the competitiveness of products;
- sphere of origin, depending on whether it is a competitive advantage over competitors. It creates elements of attraction among similar products on the market.

In general, the factors of competitiveness of enterprises can be divided into two groups according to the factors which we can influence upon and those factors that are not subject of company control.

The factors, which are controlled by company, include the following items:

- characteristic features of products (the level of its quality, including compliance with international and national standards, aesthetic and ecological level, security status, patentability of the product, etc.);
- level of pre-sale and after sale services quality;
- the conditions ensuring spare parts and necessary technical documentation availability during the warranty and post-warranty service, warranty period, availability of service centres, the quality and completeness of maintenance;
- terms and conditions of products payments (ability to obtain credit, deferred payments, granting attractive discounts for intermediaries);
- high skilled company staff, rationality of organizational and production structures;

- scientific level of the control system;
- image of the company;
- participation in fairs and exhibitions.

The factors of products competitiveness, which are not controlled by enterprises are macroeconomic factors considering marketing policy aimed at increasing the complex index of products competitiveness. These factors include the following items: the level of competitiveness of country, industries and enterprises; the level of organization of production, labour and management of the intermediaries and consumers of goods; the number of enterprises competing in the industry, the level of competition among suppliers of raw materials, materials and other resources; the emergence of new needs on the market, etc.

The priority of the marketing policy of each enterprise is reducing the cost of production due to low level of paying capacity of consumers. The biggest competitive advantage of domestic products is the low level of prices. The competition increases quality of products, the level of service, investment by increasing the share capital in joint stock ventures with leading foreign companies, exports and competitiveness of the domestic economy.

The high level of competitiveness of enterprises products should be related with the general system of measures which aimed to strength the economic stability of the national economy. It is effective public policy, namely: the adoption of effective legislative acts and their actual implementation in the practice of management, and analysis of the influence of external and internal factors on competitiveness of products and the study of the main groups of indicators of competitiveness of products.

The level of the competitiveness of the enterprises products depends much more on the internal environment, so the evaluation of internal capabilities of the enterprise, along with the analysis of the external environment, has a higher degree of importance. The factors of the external environment can be taken into account to make better decisions when we choose a competitive strategy to improve the competitiveness of products and to win in the completion for market share. In specific market conditions, the factors of the first level of competitiveness can be the quality of the product, the price, the cost of consumption, quality of service and marketing activities to promote products on the market.

The determination of product competitiveness depends on the level of meeting both needs of producers and consumers of products. The producer considers competitiveness to be an ability to increase their income as fast as the competitors do, providing the necessary level of investment to maintain this trend in future.

On the other hand, for the competitive advantages of products producers need to increase the amount of expenses from the income of the enterprise. Therefore, for the producer conditions of the products competitiveness in practical terms is estimated as the ratio of total revenue from sales to gross costs of production, transportation and product service.

From the point of view of the consumer, the competitiveness is higher, in comparison with its competition, the ratio of the quality characteristics of products and cost of its use or consumption. The criteria of estimation of competitiveness of production should be interrelated as integral parts of one system «producer/consumer».

The contradictions between the requirements of producers and products consumer should correlate to market mechanism so that the process of production and sales of these products will be mutually beneficial. The correlation between producers and consumers is only possible when the solution of some problems is caused by contradiction.

At first, it is an efficient level of product price which is acceptable to all participants in

the process of production and sales. Secondly, the production of products should meet requirements of scientific and technical progress. Thirdly, the problem of creating the infrastructure to meet the needs of the buyer, but one which is no special interest from the point of view of obtaining the highest profit for the producer.

One of the most important components of competitiveness is the level of product quality. However, the improvement of its quality has a downside. With the improvement of quality the cost of production and the price of product increase. It is not beneficial for the consumer. There is optimal ratio between these components of the competitive mechanism that will satisfy both of them and allow products to be competitive, and the enterprise to be profitable.

The optimization must be implemented at all stages of products competitiveness increasing. Therefore, producers should identify the target market. The marketing and design departments intensify the work in this direction. It gives opportunity to react quickly to all changes that occur in the market and suit the consumer needs and wants in each market segment.

According to market economy and the indicators of product quality competitiveness, the support of usable products is the most important issue. There are few variations of technical and economic indicators of modern cars. Therefore, an argument for consumer's choice of products is the scope of services, offered warranty and post-warranty service.

Consequently, both product and service market are to be based on principles, norms and rules followed by the producers. This kind of market is to be improved taking into consideration the needs and wishes of consumers. In addition, the enterprises need to identify the target market, market research, consumers and competitors. The enterprises have marketing and design department, which are able to respond quickly to changing market conditions.

There are contradictions based on the interdependence between the indices of product competitiveness: on the one hand, improving technical productivity and, consequently, increasing the level of product quality ensure the increase of its competitiveness; on the other hand, the higher level of quality causes increase of both costs and prices.

The basis of appropriate level of product quality is solving the following contradictions: on the one hand, improving competitiveness by rising productivity and reliability demands increase in production expenses as well as selling prices; on the other hand, reducing costs of use, maintenance and repair of the products by improving its reliability, increasing productivity, energy efficiency cause increased production expenses as well as selling prices.

The most acceptable quality of products is reached when producer gets the desired profit, and the consumer satisfies the needs. This strategy could be implemented by reducing the technological production costs, introduction of energy saving production technologies, increase of qualitative characteristics of equipment, reducing downtime.

These measures allow, on the one hand, improving the quality of the product and on the other hand, reducing unproductive expenditures, that result in decreasing the price of consumption products.

There are main development strategies aimed to improve and maintain the competitive advantages of products depending on the requirements of each market segment:

- the «price-quality» strategy;
- the strategy of improving the level of «additional competitive advantages»;
- the strategy based on the combination of the «price-quality» strategy and strategy of



improving the level of «additional competitive advantages».

The «price-quality» strategy has the goal of providing the most effective ratio between the quality and the price of products.

The strategy of «additional competitive advantages» in practical activities is aimed to improve the productivity of products service and marketing promotion of products. The producers should improve the quality of corporate services, informing about properties of products, high-quality commercial work with customers, implementation of leasing operations, the notification of participation in fairs and exhibitions, creating a positive image of the producer and so on.

The choice of the approach based on the «price-quality» strategy and the strategy of «additional competitive advantages» is to be considered its purpose and implementation sphere. It depends on the particular market situation. The engineering enterprises should use combined strategy of improving competitiveness of products.

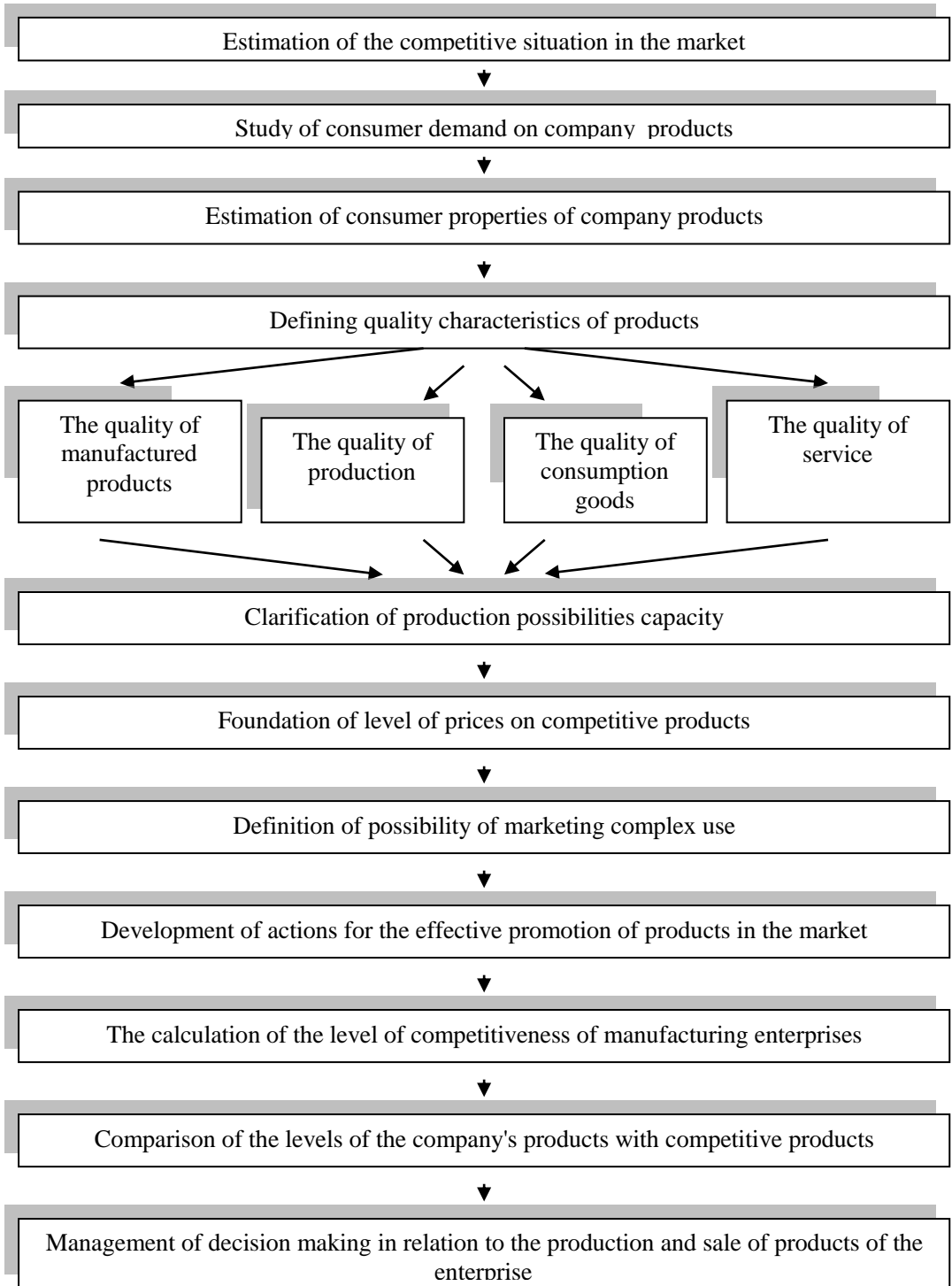
Making a detailed study of the analysed problem concerning the reliability of recommendations of improving the level of competitiveness of manufacture enterprises within the calculating of the level of product competitiveness in a particular market segment one needs to take into account the results of research of consumer benefits for this segment.

Marketing activity of the company in a competitive market requires constant attention to improving product quality within the growing needs and demands of consumers. The study of accounting in the price of consumer characteristics of products will enable the company from a more objective position to approach the problem of determining such price level which for a given product quality boosts demand.

The algorithm of above stated methodical approach to foundation of the level of competitiveness of manufacturing enterprises is shown in Figure 1. It gives foundations of the level of competitiveness of manufacturing enterprises basing on following results: monitoring of competitors` products; comparative analysis of the company products and competitors; identifying strengths and weaknesses of the company products.

The choice of the enterprise most powerful position in the market considering the comparison of the estimations of the competitiveness of competitors and their market strength is the basis for efficient allocation of the resources. Therefore, company could obtain higher profit by investing in business that has a strong position in a moderately attractive industry than investing in business with weak position in the most attractive sectors of the economy. Accordingly, the enterprise in conditions of diversification could concentrate its resources in those sectors where it can become a leader, or withdraw from areas of activity where it has no chance to occupy a strong position among competitors. It needs the assessment of the level of product competitiveness.

The necessity of selection of target segments of consumer appliances is due to the fact that each market segment is determined by its own characteristics of development (existing competition, the state of solvency of consumers, the degree of development of the market infrastructure, the size of the existing demand for products, and etc.) that affect the level of customer requirements to the indicators of competitiveness of products. Therefore, it should be noted, that the competitiveness of enterprise products would be different for different segments of the consumer market.



**Fig. 1. Algorithm of foundation of the level of enterprise competitiveness**

The proper selection of appropriate segments gives a rational basis for further evaluation of the product competitiveness, because the problem is clearly focused on a specific group of consumers. The main criteria for allocating a segment of the market is the similarity of views of the main representatives of consumers, the magnitude of competitive effects, the volume and structure of the segment. The main customer segments could be discovered within processing statistical information and expert survey of dealer firms which specialize on the sale of domestic products in the target regions.

The methodical approach for the foundation of the offered complicated index of competitiveness of enterprise products could be used at all stages of the product life-cycle and addressed to any problems of estimation.

The advantages of the offered method are such as:

- taking into consideration almost all specific features of the analysis of the product competitiveness;
- more precise procedure for evaluation of the competitiveness of enterprises;
- detailed analysis of group and single indicators of production;
- considering market segmentation of consumers within the analysis of product competitiveness;
- calculation of the weight coefficients of the indicators of competitiveness from the point of view of both consumers and professional experts;
- creating instruments for modelling competitiveness of majority of products in competitive markets.

To sum up, the methods of estimation of level of product competitiveness developed by Ukrainian and foreign authors, give us opportunity to systematize them according to certain classification criteria. In contrast, the offered methodological approach allows obtaining a structured set of characteristics that clearly describe such a thing as «the competitiveness of engineering enterprises» in various segments of the market.

Thus, the provision of the competitiveness of the company products is quite complex marketing problem. Its decision should be subject to the activity of all structural divisions of the manufacturer. A systematic approach to the process of foundation of level of product competitiveness allows achieving a high level of competitive advantage in a particular segment of consumer market.

The performance of the process of foundation of level of product competitiveness of the enterprise is determined through the increasing of value of level of complex index of product competitiveness. Significant competitive advantage could be achieved through rational quality of products and sustainable additional competitive advantages. The main direction of marketing activity is to increase production of new products which are in demand, which price is much lower than the competitor's one and the quality indices are much higher.

## **Conclusions**

The competitiveness of the enterprise with the requirements of a particular market or segment is caused by the most acceptable ratio for both consumers and manufacturers between the main components of the studied indicators, such as follows: product quality, cost, consumption, nature of marketing promotion of products in the market and the level of service. The methodological approach allows defining quantitative terms of the complex index of product competitiveness of enterprises in various market segments.

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## THE FORMATION MODEL OF ENTERPRISE MARKETING STRATEGY

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**Abstract.** The formation model of marketing strategy, based on the study of the nature and features of the strategic planning process of the enterprise market activity and also on the study of its potential and analysis results of the competitive market was offered. This allows us to formulate a set of policy measures on the improvement of marketing activity at the domestic enterprise.

**Keywords:** strategic planning, marketing strategy, competitive market potential of the company, analysis of marketing activities, strategy formation model, a set of strategic measures.

*DOI: <http://dx.doi.org/10.23856/2311>*

### Introduction

In modern terms, strategic marketing plays a crucial role in the economic success of the company. During the formation period of market economy in Ukraine business activity takes some specific features as the levels of the uncertainty and risk are increasing, the intensity of competition is rising and its new types are appearing, buyers are imposing more and more requirements on goods and services. The company's ability to obtain competitive advantages and to keep them largely depends on the effectiveness of marketing strategies due to the focus on the exceptional consumer value's creation, his ability to enhance the enterprise core competencies, susceptibility to dynamic market requirements, focus on the new product development and so on.

An important feature of the current stage of the market relations development in the country is to aim the domestic manufacturers at the strategic priorities of Ukraine, the variability of the environment, business globalization, the integration processes in the economy, the possibility of companies to determine the long-term goals and strategies in order to achieve them and others. All this makes the objective need for the further development of the theoretical and applied principles of strategic marketing, the formation methodology of marketing strategies as determinants of the companies' success in the market.

A special attention is paid to this problem by the domestic and foreign scholars such as Balabanova L., Voychak A., Gerasymchuk V., Kotler F., Krevens D., Kudenko N., Porter M., Fatkhutdinov R., Eriashvili N. and others. These works are considered to be the theoretical principles of strategic marketing management, classification of marketing strategies, methodological approaches to the formation of marketing strategy. However, it should be noted that the problem of the enterprise marketing strategy's model is not developed.

### **The formation model of marketing strategy**

Today there is a need to ensure a strategic approach to planning of activities, change the management style and planning. This problem is realized through the strategic marketing management, marketing strategy's formation and planning of operational activities on the basis of the established strategic market goals. The vision of the long term prospective can provide the continued operation and growth to the company. This is possible in case of the implementation of the company's strategic marketing plan.

The decisive factors for the successful economic activities oriented towards good government in a market situation are the development and implementation of the multi-market orientation of marketing strategies, able to adapt to the external changes. A variety of consumer needs and new forms of competition open up growth opportunities for the companies that plan and operate in the market on the basis of strategic marketing.

Today the marketing strategies used by almost all businesses are functioning efficiently in the countries with the developed market economies. The marketing strategy is designed to answer the question of how, when and where the companies should carry out their activities in the market. It means that the strategic marketing is the process of developing a strategy that takes into account the variability of the environmental factors aimed at increasing of the consumer needs satisfaction.

The results of the literature analysis allow stating the defining essence of marketing strategy; various authors observe different approaches or concepts of its wording. Thus they propose to focus on the marketing complex, marketing concept, features of the product life cycle, market share, competitive nature etc.

From the position of a target orientation marketing strategy of the enterprise can be regarded as a dynamic system of marketing purposes, formed on the basis of the strategic objectives of the enterprise with the peculiarities of the market environment, as well as marketing tools to achieve them. On the other hand, it is a comprehensive program of further development of the company, which is based on the situational analysis of the market, and evaluation of the internal potential establishes a strategic direction, creates some of its market positions, different from competitors and, based on the specific set of the commodity objectives, marketing, pricing and communication policy, develops a system of marketing tools for the implementation of strategic activities.

From a purely managerial approach marketing strategy is considered to be the basic category or the result of the strategic marketing plan, which is an element of strategic marketing, which, in its turn, is a part of strategic management and marketing of the company. It is a philosophy of the enterprise's business in the market orientation and accordingly, the main direction of focusing efforts. The marketing strategy of the company should focus on the maximum and timely adaptation of its operations to the dynamic marketing environment in order to achieve the strategic objectives.

In the foreign economic literature a view on the classification of marketing strategies is formed at three strategic levels:

- General corporate level;
- The level of strategic business units;
- Functional level.

Accordingly, the portfolio of the company's marketing strategy covers three groups of strategies:

- Corporate;

- Functional;
- Tools.

Let us look at the features of these groups of the enterprise marketing strategies in more details that will allow to approach to the problems of the development model of marketing strategy from the most scientifically based position.

The corporate strategy in its essence is a set of decisions on the basis of which the company identifies and defines its intentions and objectives, develops basic policies and plans to achieve them and determines the scope. The main aim of the corporate strategy is to prevent or minimize the dangers (threats) by changing marketing environment, focusing on the weaknesses in the organization of the company and their reduction through the use of marketing opportunities. This strategy is aimed at the identification of interaction means with the market, harmonization of the enterprise demands and consumer demands through more efficient use of the company's potential in a competitive market.

The basic corporate strategies include the following:

- Portfolio strategy;
- Growth strategy;
- Competitive strategy.

Portfolio strategies should ensure the effective management of various areas (types) of activity to meet the needs of the market and the optimal allocation of resources. The basis of Portfolio Strategies is the portfolio analysis which is based on:

- Boston matrix Consulting Group (BCG matrix);
- Matrix «GE-McKinsey».

In general, this approach is based on a combination of marketing opportunities' estimation and potential of the company.

The growth strategies orient the company at strengthening of its business activities through the use of three growth opportunities:

- Organic (intensive development from its own resources);
- The acquisition of other companies or integration;
- Diversification (distribution of areas).

The growth strategies are formed on the basis of the construction of:

- Ansoff Matrix;
- Matrix of external acquisitions or new BCG matrix.

The purpose of the competitive strategies is to provide a competitive advantage in the market relatively to active competitors. They are based on the results of the competitive analysis which includes:

- Analysis of the competitive situation in the market;
- Estimation of the competitive advantages of the company and its major competitors.

In the process of these strategies formation the following models and matrix can be used:

- Porter's General competitive matrix;
- Porter's five forces analysis;
- Matrix of competitive advantages;
- Model of competitors' reaction.

The choice of the target markets and development for each respective set of the marketing efforts provide the enterprise with the functional marketing strategies. The main ones are:

- Market segmentation strategies;
- Strategies for positioning;
- Strategies for complex marketing.

The main areas of the market segmentation should include:

- Strategic Segmentation which is focused on the areas of strategic management, i.e. the definition of the basic markets in which the company will operate;
- Mini-segmentation (micro-segmentation), which is focused on the allocation of market segments based on the consumer, product and competitive features;
- Competitive segmentation, which is based on the identification of the market niche, being a part of the market that is not occupied by the competitors.

In this case it is possible to use the following in the chosen target market:

- Marketing aggregated strategies, aimed at the entire market;
- Differentiated marketing strategies, targeted to multiple market segments;
- Concentrated marketing strategy that provides maximum adaptation to the requirements of a particular market segment.

The importance of the functional strategies belongs to the positioning strategies that should influence the minds of potential customers in order to create the desired perception by consumers of the goods and the whole enterprise. The basic ones include the following:

- The strategy of information positioning based on the detailed product information;
- Consumer positioning strategy based on the image of goods in the minds of consumers through the use of the common information that can be perceived differently by consumers;
- Competitive positioning strategy that is based on the preferences of the competitors' goods or their comparison;
- Repositioning strategy that is aimed at strengthening of the position of goods at changes of the competitive environment, technology or other factors.

Strategies of the marketing complex are focused on the formation of the optimal combination of marketing funds and ensuring the efficient functioning of the company in the target market. These include the business tools strategies, namely:

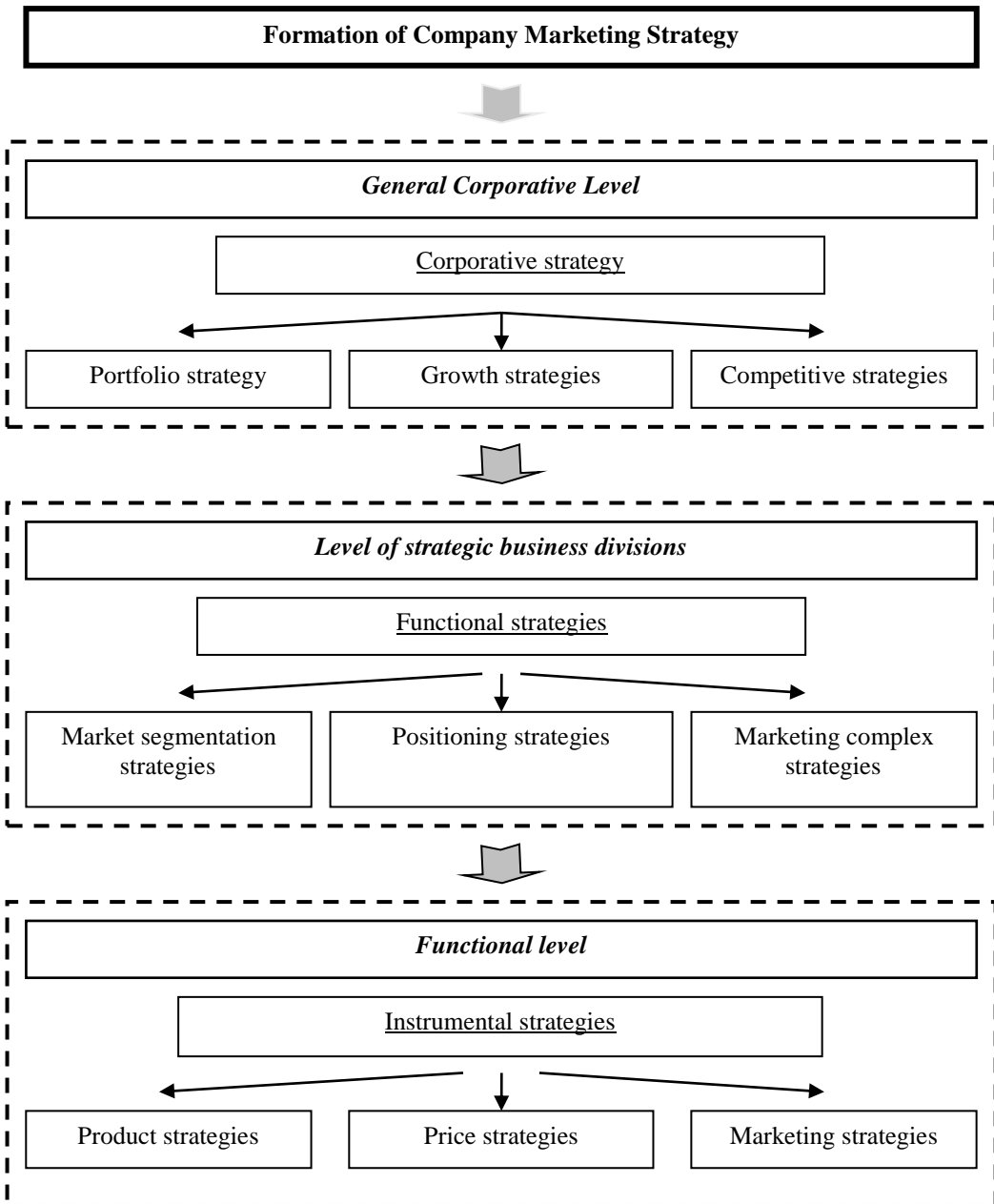
- Marketing product strategy;
- Marketing pricing strategy;
- Marketing sales strategy;
- Marketing strategies for the product promotion and others.

The studies of different kinds of marketing strategies, considering the use of each one, allow us to study the general laws of their formation. This provided a reasonable choice of marketing strategies, being necessary to use a set of relevant scientific methodological approaches such as systematical, situational integration and others.

Considering the features of the discussed strategies in order to improve the development process of marketing strategies, the formation model of the company marketing strategy is offered (Fig. 1). This model is proposed for the use in the process of the strategic marketing planning of marketing activities at the existing domestic enterprises.

The characteristic feature of this model is such that it is offered for use with the regard of a system of marketing strategies' formation at three levels of the strategic marketing: corporative, functional and instrumental. Accordingly, the formation of marketing strategies should also take place at three stages.





**Fig.1. Formation model of company marketing strategy**

The corporate strategy of the company is formed at the first stage. The strategic alternative of the enterprise is determined on the basis of a comprehensive situation analysis of the enterprise marketing environment, taking into account the current mission of the company.

Firstly, the analysis of the environmental factors' impact on the activity of the

investigated companies is conducted. The factors that impact the company indirectly through the various political, legal, economic, social, demographic, technical and technological institutions and processes, forming the microenvironment of the enterprises are identified. They are political, economic, social and technical factors. The factors of the immediate environment of the enterprise are also analysed, together forming the microenvironment of the enterprise. We mean consumers, competitors, suppliers, intermediaries and contact audience.

The next step is analysing of the internal environment, which according to the proposed model is appropriate to conduct such aspects of the company as production, marketing, finance, personnel, organization and management. The analysis of these aspects helps identify the advantages and disadvantages of the investigated companies.

These estimates are entered into the matrix SWOT-analysis, on the basis of which the strategic alternative of the company's further development is chosen: growth, limited growth or exit from the market. These combinations of the attractive opportunities with the particular advantages of the company identify the specific measures for the strategic development, and the combinations of weaknesses and threats - to outline the range of strategic business problems.

It was established that the company has three overall strategic alternatives:

- Growth;
- Limited growth;
- Termination of activities.

These alternatives define four options of the corporative business strategy, which is formed on the basis of a SWOT-analysis, which essentially is a method for the determination of the corporative strategy based on the analysis of the external and internal marketing environment. Therefore, the formation of the corporative business strategy should take into account the results of the situational analysis of the marketing environment.

Based on the estimation of the impact factors of the internal environment for marketing activities of the investigated enterprise and the nature of their influence, the strengths and weaknesses of these activities are determined. This estimation is often a factor in the degree of impact on the enterprise and is determined by using an expert method. Based on the estimation of the impact of the enterprises' microenvironment and the assessment of the factors impact of its immediate environment, the opportunities and threats are formed, which create the environment for the company in a competitive market.

It should be also taken into account that for the certain potential we need to estimate the attractiveness of the changing factor for the studied company and the success probability at the use of specific opportunities in order to achieve the appropriate market success.

The second stage is the formation of the functional marketing strategies. Developing strategies of reaching the market, positioning and differentiation strategies are carried out by using the tools of STP-marketing. The first step is the process of segmentation (or aggregation) of the enterprise market. Based on these data the decision of choosing one or more target segments is made, the strategies to reach the target market are formed. If the segments separation of the enterprise market is not appropriate, the strategy of the aggregate (undifferentiated) marketing is used.

If at the corporative level, based on the results of SWOT-analysis, a strategic alternative to the company is formed, then, at the functional level, the strategic decisions are taken on STP-marketing elements with paying attention to the segmentation, positioning and selecting of the target markets.

Creating a certain image in the minds of goods consumers, which is different from the images created by competitors, results from the market positioning of the company and its products. This is the next step of the marketing strategy formation. For this purpose strategies of differentiation are used, which in this case act as a competitive strategy aimed at establishing of the differences between the company and its competitors. There are four main types of differentiation in image, product, personnel and service.

The analysis of the individual elements in the marketing policy of enterprises showed that every company is trying to reach the possibly bigger potential market, being a characteristic feature of the undifferentiated marketing strategy. Indeed, considering the nature of goods and the enterprise demand for them, this decision seems to be appropriate.

It should be taken into account that sometimes the target market means the enterprises of all industries and economic sectors like food processing industry, catering, wholesale and retail trade, restaurant management and others. Consumers of this group of products are potentially all existing enterprises. In such circumstances, it is inappropriate to perform market segmentation. The reason is that possible results in terms of the unsatisfied demand identification in certain market segments of the market niche do not cover spending money and time on the research of this magnitude.

In this case it is an appropriate justification of the chosen market strategy or the choice of the positioning strategy or differentiation of sources in a target market. Noteworthy is the application of market aggregation instead of segmentation, examining the market as a single uniform set of consumers.

An effective strategy for the enterprise market coverage can be a complicated version of the undifferentiated marketing when a producer with regard to the market development improves or makes more complicated the product, saturating it with various functional features, and offers it as the most satisfying one for potential customers.

To justify the decision of the target market selection, the method of criteria estimation for the target market attractiveness and ability of the effective functioning in it can be used.

In the accounting of the life cycle stages of the target market of the enterprise it is advisable to provide the market positioning, based on the service differentiation. This includes the provision of goods or services which are different from the competitors' ones. Market at the stage of stabilization is very sensitive to the encouragement by the manufacturer, which needs the use of the positioning strategy for the sales promotion features or style sales. Differentiation in this case acts as a competitive strategy.

The service differentiation is made in the following areas:

- Delivery of goods to the point of consumption (search for benefits in speed, punctuality, preserving the quality of goods in the delivery);
- Installation of products on the site of use;
- Consumers training to deal with goods;
- Free consulting services related to the use of goods;
- Repair considering the speed and quality of recovery in functionality of products.

The strategy of positioning of the company products involves the decisions on the marketing complex for the individual products (product groups) in the structure of the production range. The decision basis is the portfolio analysis of the company by using BCG matrix, as well as the data on the stages of the product life cycle. Positioning strategies of goods are implemented by using the components of the marketing complex strategies.

In general, the functional marketing strategies should define a position that the company is going to take in the market in the process of competition.

The third stage is characterized by the tool development of marketing strategies. To achieve this goal the company should develop a set of tools of the marketing complex, which should ensure the effective positioning of the company and its products in the target market. Strategic decisions are made on the following elements of the marketing program: product, price, distribution channels, methods of promotion and staff.

It is necessary to ensure a systematic approach to a strategy of individual elements of the marketing complex: to reconcile their objectives and overall direction. The effective positioning and development of the appropriate marketing complex for the target market are the sources of the sustainable competitive advantage in a defined market.

According to the results of research in the enterprise practice, the proposal strategy is often used. For this, for individual product groups using ABC analysis of the company's commodity portfolio, the estimations are carried out. As far as the decision of the product range is concerned, it is desirable to conduct the further graphical analysis of the company's commodity portfolio by using BCG matrix. It is necessary to create the following matrix:

- Shares of commodity groups in the total implementation;
- Growth rates of implementation for each product group.

On the basis of the analysis we can make the conclusions ,concerning the feasibility of marketing efforts to individual products and product groups and redistribution of own resources for the benefit of those groups of products which are at the unbeneficial position at the same time reducing the costs of promotion.

It should be taken into account that conducting a situational analysis is very important as the development of new marketing strategies and the adjustment to the existing ones. At this stage the market and competition analysis, market segmentation and monitoring are conducted.

Market analysis is needed for further analysis of consumers and competitors. Market consists of a certain product or group of similar products that meet the needs of consumers (individuals or organizations) that are willing and able to buy goods.

Market analysis, as well as the forecast of its development is of great importance for the development of marketing plans. Based on the analysis, the decisions are made at entering new markets, on the service means of the existing markets or at exiting from the markets that have lost the appeal for the company. The purpose of this analysis in the marketing strategy formation is to identify the potential customers, description of their characteristics and preferences regarding the identification of goods, the estimation of capacity and the rate of the market development, establishing the products and companies that compete in this market.

The uncertainty and instability of the domestic market environment, the depth and speed of the changes occurring in it, obviously, will continue to grow, especially in the period of the economic crisis. Therefore, the domestic enterprises in the marketing activities' processes should not only adapt to the actual conditions, but should be also able to provide such a capability for a long period of time. This should facilitate the development and use of the relevant marketing strategies at enterprises.

The adaptation strategies, offered for the medium enterprises are desirable to be carried out in the following areas:

- Negotiated enterprise policy, e.g. detecting all suppliers and grouping them by the type of goods to be supplied;
- Identifying the competitive power of suppliers to study their activities;
- Estimation of the feasibility of the contracting enterprise policy and determination of

the optimal ratio of all its strategic components;

- Evaluation of the marketing strategies' economic efficiency:
  - Current product policy;
  - Pricing strategy of the company;
  - Distribution strategy and goods promotion;
- Staff development planning;
- Improvement of management organizational structure.

The continuous implementation process of the enterprise marketing strategy consists of the following successive stages:

- Conducting a situational analysis;
- Formation of a marketing strategy;
- Development of the marketing complex (marketing programs);
- Implementation of marketing strategies;
- Managing of marketing strategy.

Thus, the development of the complex marketing strategies at the corporative, functional and instrumental levels of the strategic marketing planning is a characteristic feature of the marketing strategy model's application in the strategic planning of marketing activities of the company.

### Conclusions

The decisive factors for the successful economic activity are the development and implementation of the multi-market orientation of marketing strategies, able to adapt to the external changes. In their design and implementation it is necessary to consider the peculiarities of national economy, goods, the degree of competition in the market, production capacity and size. Therefore there is an urgent need to adapt the existing marketing strategies to the current business environment of the enterprises in the national market. Marketing activities research of enterprises revealed some shortcomings in planning of marketing. In this regard, the formation process model of marketing strategies at the enterprise is offered. We recommend its use in order to create a system of marketing strategies at three types of strategic marketing, taking into account the corporative, functional and instrumental levels.

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## INTRODUCTION DIRECTIONS OF INTERNATIONAL ACCOUNTING AND MANAGEMENT PRACTICES INTO DOMESTIC EXPERIENCE OF ACCOUNTING AND ANALYSIS

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**Abstract.** The review of logistics priorities of the current assets' flow management has been done. The prior directions of the current assets' management have been determined. The algorithm of the quality control has been offered for the control purpose of material supplies' quality. The algorithm of control over the liquidity of the residue stocks at the warehouse has been offered too.

**Keywords:** international accounting practices, management, analysis, quality control algorithm, liquidity reserves.

*DOI: <http://dx.doi.org/10.23856/2312>*

### Introduction

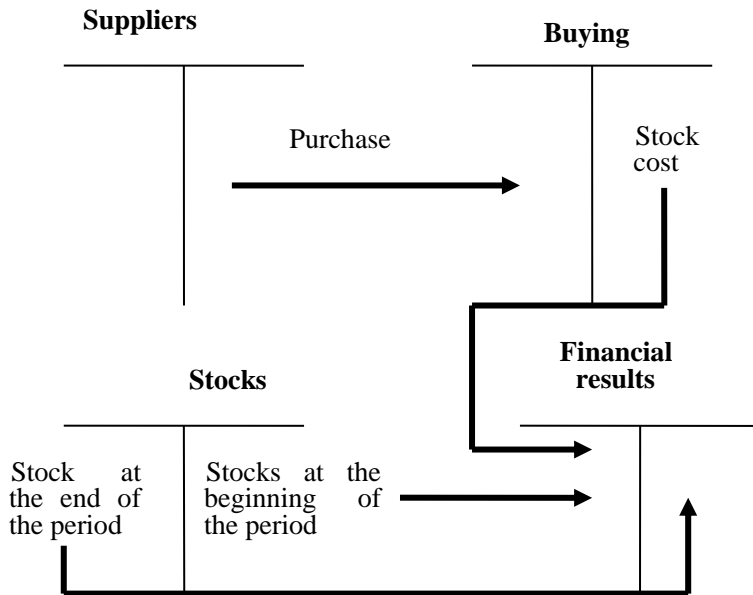
Accounting for the inventory provides information on the formation of (1) the status and availability of stocks in the company, and (2) the volume of funds invested in stocks, the cost of storage and replenishment. The enterprises should pay more attention to minimization of the inventory levels. The most modern and progressive system of the inventory management for domestic enterprises is the "just in time" system. For the purposes of control over the quality of the supplied material it is advisable to offer the quality control algorithm and the algorithm of the efficient avoidance of the illiquid residue stocks in such a system.

### **The permanent inventory accounting system is being used in national accounting practice**

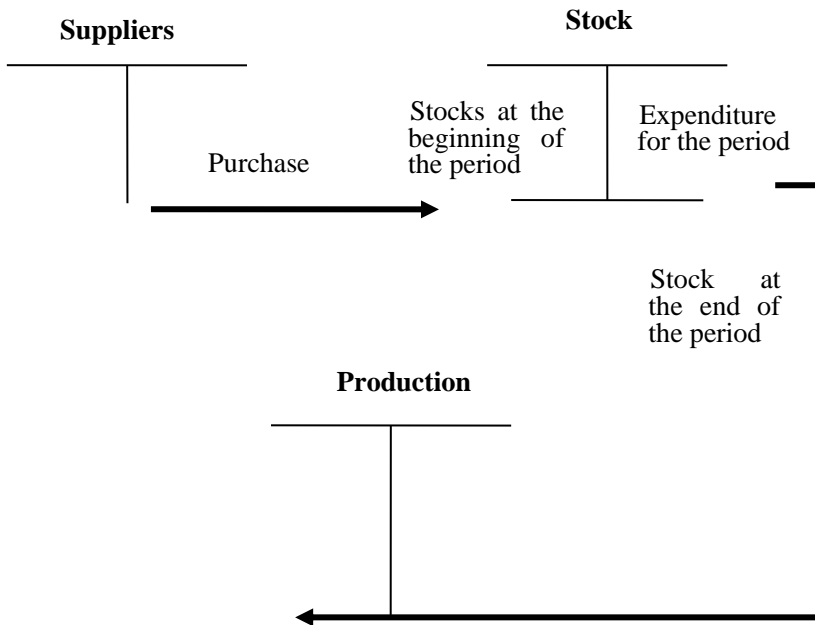
It is based on the fact, that all changes in stocks are being evaluated continually and on an ingoing basis. A system of the periodic accounting of inventories is widely used abroad. It means that the physical counting of residual groups of materials in inventories is carried out through the certain periods of time (for instance, once a month). While using the periodic system, the initial balance amount of stock accounts and revenue for the period is to be calculated. After that, the final balance is being determined by using the procedures of the inventory. The difference between these figures is the value of the spent material (Fig. 1).

While using the constant accounting system, there is a possibility to determine the consumption cost of materials without the inventory. The final balance is defined as the

difference between the total value of the initial residue of materials and revenues for the period and amount of spending on materials (Fig. 2).



**Fig. 1. Value Determination of the spent material in conditions of the periodic accounting system (Needles, Anderson, Caldwell, 1994)**



**Fig. 2. Value determination of the spent material in conditions of the permanent accounting system (Needles, Anderson, Caldwell, 1994)**

The final balance and the cost of the wasted materials depend on the method of the assessment, so at different systems of accounting and methods of the materials' debit these indexes can be different. This is more likely when the cost per one unit of materials changes during the accounting period.

To realize the usage possibility of the periodic system at the domestic enterprises, it is necessary to involve the special accounts: 905 "Expenses for procurement", 706 "Change of inventory balances."

The account 905 "Expenses for procurement" is necessary for the accumulation of data on the amount of purchases. At the same time, all purchases are debited to the decrease in income. So every time after the end of the reporting period, an inventory of the residue is conducted. On its results, the method of the stock loss determination is based. In its turn, the account 706- "Change of inventory balances" - will be temporary.

An important problem of the accounting system for the inventories is the possibilities' determination of the restocking cost reduction that appears due to the continuous searching for the solutions of two main tasks: determining of the required reserves' amount (reserve standards) and creating a system of the stock actual volume and its timely completion according to the established standards. Thus, the purpose of the effective inventory management is to minimize the costs on the movement of the material flow in the logistics system.

The main element of the "just in time" method is a YIT-purchase or "just in time" purchase. YIT- purchase involves the use of stocks immediately after the delivery.

YIT-purchasing implementation lies in entering into the contracts with the suppliers that provide the delivery of small parties of reserves to the company, in the exactly scheduled time. Thus, the only supplier is selected for each component, so the number of the suppliers is reduced.

The deliveries of materials become more frequent, and the number of materials reduces, so much attention is paid to the quality of the received submissions and to the opportunities to meet the needs of production due to these materials.

The reduction of stocks, in its turn, causes the cost savings on the storage of stocks, savings of production space. On the other hand, a large amount of orders involves the reduction of the clerical work, because it is easier to issue a long-term general order of the multiple providers than an individual purchase order.

The advantage of the "just in time" method lies in the possibility of the cost reduction of stockpiling due to the reduced capital expenditures on the maintenance of storage facilities; ensuring the consistent quality of the supplied materials , establishment of the long-term direct relations with the suppliers; reduction of the inventories quantity, which means less capital investment in the inventory; increase of the orders reliability which contributes, significantly reducing the need in the contingency reserve; the ability to respond quickly to the changing market conditions; the risk reduction of stocks depreciation; the reduction of materials cost by improving the quality of the purchased materials.

There is a possibility for the effective inventory management at the multi-production enterprises using the "just in time" method, but it is necessary to take into account some specific features. The "just in time" method is appropriate to be used in management of those stocks, which belong to groups A and B and are essential in determining of the optimal inventory volume and costs of purchasing and storage. Such production companies cannot completely abandon the creation of a reserve stock, due to the increased risk of disruptions in production because of the undersupply, which is unacceptable.



The required size of the stocks' reserve residue in categories A and B is to be calculated not on the basis of the evaluation, as it's done nowadays, but on the analysis of the situation with the delivery of each specific material. The reserve residue of the reserve categories A and B, to which the greatest attention of the logistics department is being paid, is to be calculated for each material and including the number of days during which each supplier has executed the order (plus one day to determine the causes of delay or poor delivery and taking of a new order).

Among the logistics priorities of the circulating assets' flow management, the following ones are mentioned: reliability of supply, quality of the supplied materials, minimization of purchasing costs, optimization of inventory levels, minimization of transportation costs, minimization of supply terms, etc. Thus, the priority area of the circulating assets management is the effective functioning of the supply reliability system and the quality of the supplied materials. Significant differences between the actual quality parameters of the materials that come from suppliers, and the indicated in the accompanying documents ones, determine the origin of not only direct losses of the companies that pay for the stocks of low quality at the price of the stocks of high quality, but often also of irreversible shortage of the finished products. Thus, despite of the significant expenses, it is necessary to conduct the laboratory tests in order to determine the quality of materials.

The basic algorithms of the material resources' analysis are the following ones:

- An analysis algorithm of productive resources;
- An algorithm for monitoring the portfolio of contracts for the supply of material resources;
- A control algorithm over the use of material resources.

However, when using the "just in time" method, a factor of supply has a great importance to the production program and execution of customer orders, because the number of suppliers has reduced, and the uniformity of production depends on the disruptions in the supply.

For the purposes of control over the quality of material supply, an algorithm of control over the quality has been proposed (as shown in Fig. 3).

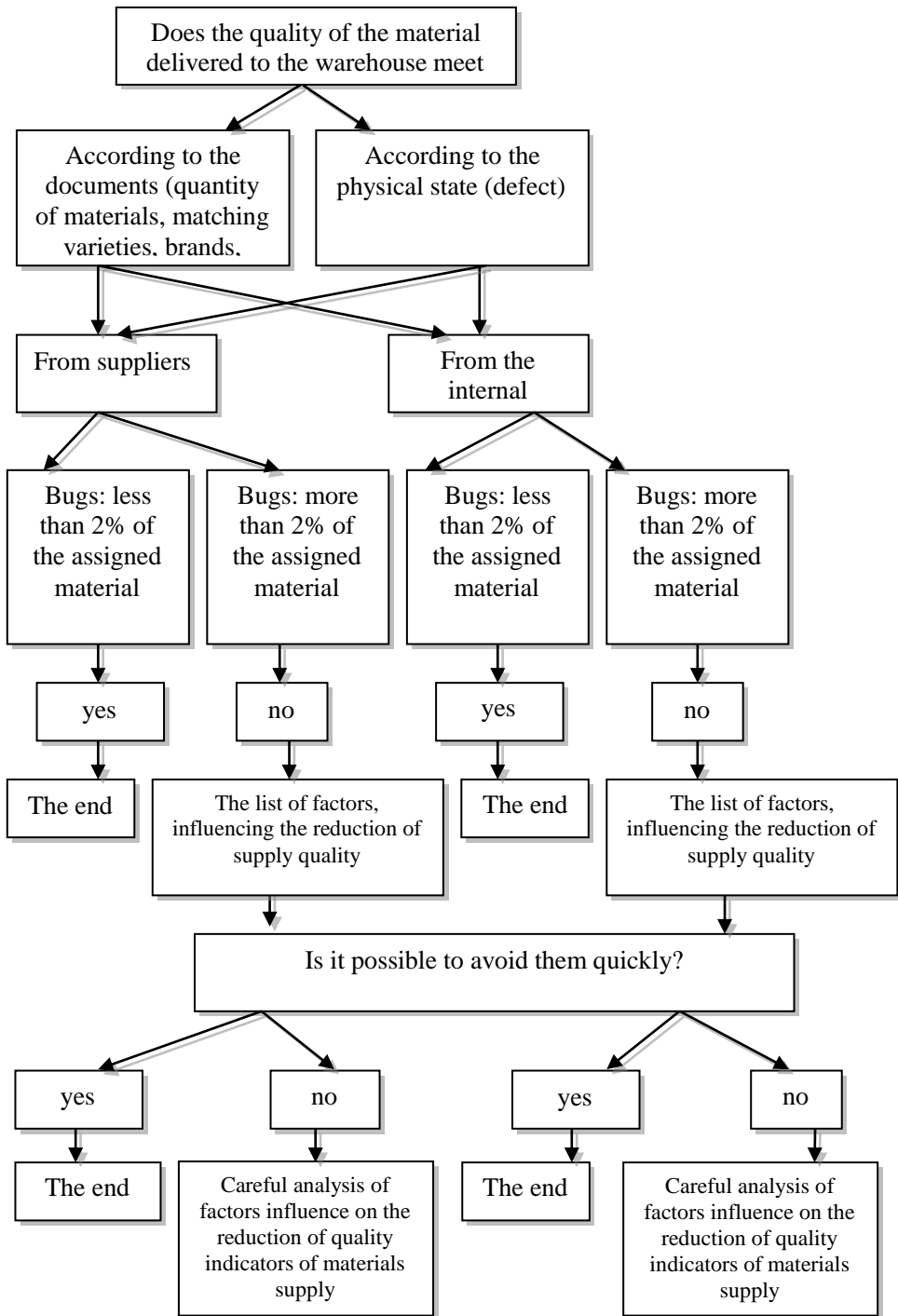
The algorithm provides the opportunity to check the quality in two ways: of the documents and of the physical state of the stocks. According to the documents, it is necessary to compare the actual suitability of materials, variety, brand, content substances with the data of the documents, accompanying this agreement.

It's like identifying the errors, associated with the adoption of the order and its execution. Such verification is carried out in the Department of Logistics.

Checking of the physical condition is conducted in the warehouse by comparing the data of the accompanying documents with data of the actual availability of the submitted materials.

The data sources for the comparison are the contracts for the supply and primary documents (invoices, consignment notes, certificates of acceptance, profitable orders and others). The quality control of materials entering the company is also carried out, according to the documents, accompanying the consignment notes (certificates, specifications, certificates in which the specified quality characteristics of the materials are determined).

The algorithm provides the research of material supplies quality from the internal and external sources of supply. The 2% - limit on the supplied materials that does not meet the agreement requirements, means the lack of quality up to 2% (cannot influence much the course of production), lack of quality more than 2% (needs the prompt regulation).



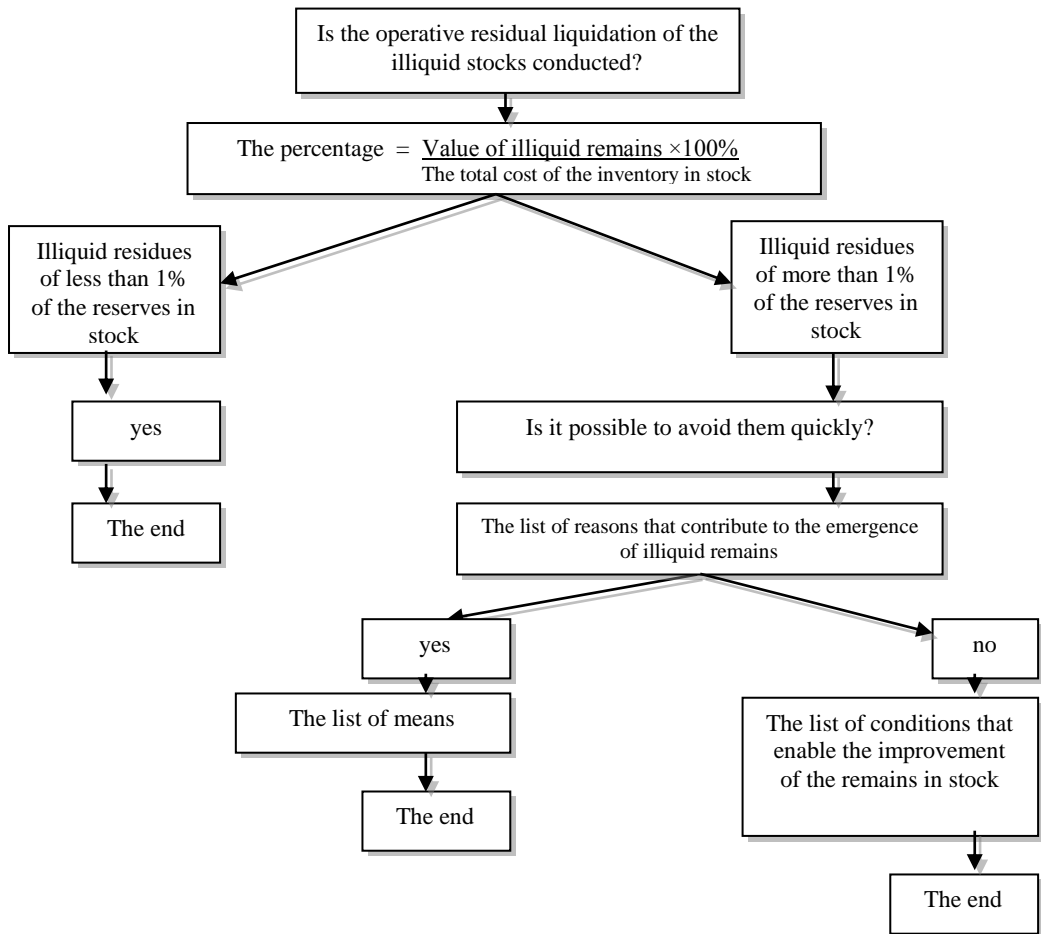
**Fig. 3. The control algorithm over the quality of the supplied materials**  
(developed by authors)

Moreover, it is assumed that if the infringement is up by more than 2% of the supplied materials' value, than the list of reasons, affecting the decline in the quality of supplies should be provided (inadequate transportation, shortage, defect, etc.).

If the effect of factors cannot be just neutralized, the procedures of the factor analysis are assumed, during which the impact of certain factors on the quality indicators of the materials supply reduction has been studied.

On the basis of this analysis the quality of supply management policy has been developed by managers.

It has been suggested to conduct an efficiency assessment of the illiquid residue stocks' avoidance on the analysis of the illiquid residue stocks' proportion as a part of the inventory total cost in the warehouse (Figure 4). A materiality limit of 1% - proportion of the illiquid residue stocks has been established.



**Fig. 4. The control algorithm over the liquidity of the residue reserves in stock**  
(developed by authors)

It means that if the proportion of the illiquid residue stocks is less than 1% of total inventory in the warehouse, the measures of the illiquid stocks' liquidation can be considered to be the effective ones.

If the proportion of the illiquid residue stocks exceeds 1% of the total inventory in the warehouse, it is necessary to analyse the causes of such residues formation.

The main reasons for the formation of the abnormal residual reserves are:

- Overstatement of the expenditure norms of materials;
- Incorrect determination of the need for stocks;
- Uneven flow of materials;
- Delayed launch of new products into production;
- Failure to keep the production technology and the standards of expenditure;
- Buyer's refusal from the finished products, so that a part of the previously purchased material becomes excessive and so on.

After studying the causes of the illiquid residue stocks' formation, an opportunity to avoid them has been analysed, the list of tools for the rapid effect on the reduction of the illiquid stocks (redistribution (sales) of the surplus stocks, the exchange transactions, auction sales, the formation of logistics plans within the existing resources) or the list of conditions that enable the improvement of the residue at the warehouse, has been created.

The conditions that enable the improvement of the residue stock may be the following ones: setting of the more strict control over the disparities of the supplied materials product lines; contracts, stipulating the impossibility of the long-term supply; integration deepening of the information and harvesting logistics; forecasting of the expenditure norms of materials with maximum probability; analysis of claims in order to get from customers not only fines but also the full compensation for the losses caused by their refusal to purchase the products according to the final contracts; taking into account the presence indicator of the abnormal stocks in the awarding system of workers from the delivery service, other units and so on.

### Conclusions and Suggestions

During the study of the possibilities of the restocking cost reduction it was found that they occur when at the usage of the "just in time" method. It happens due to the optimization of the order size and their quantity, minimization of the reserve stocks, strengthening of the quality management and timely delivery of material; more accurate calculation of the coefficient of stock coverage in days; establishment of the strict control over the liquidity of the residue stocks in the warehouses. According to this information, the algorithm of control over the quality of supply and algorithm of control over the liquidity of the residue stocks at the warehouse are developed.

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## SOFTWARE CONSTRUCTION DEVELOPMENT OF CURVES AND SURFACES AT THE SOLUTION OF VARIOUS PROBLEMS

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**Abstract.** The implementation results of the computer graphics construction of curves and surfaces by using polynomial methods, cubic spline interpolation methods, and methods of applying the B-spline curves and Nurbs-surfaces at the solution of mining and geometric problems are presented.

**Keywords:** B-spline, Nurbs, surface, OpenGL.

*DOI: <http://dx.doi.org/10.23856/2313>*

### Introduction

In order to solve the mining and geometric problems, being a part of the integrated packages of mining, it is necessary to construct the curves and surfaces. This construction is used for the spatial variability of the quality indicators, mapping of ore bodies in 2D- and 3D-graphics, modelling of the pit surface and also for the evaluation of its displacement, estimation of reserve and accounting of ore mining.

Nowadays the following methods of curves and surfaces' construction to solve the geometric problems of mining are widely used:

1. Method of construction by using a polynomial.
2. Method of construction by using a cubic spline interpolation.
3. Method of construction by using B-splines.

It should be noted that it is important to have your own domestic development for your research. The use of programming tools and computer graphics gives an opportunity to simulate various inputs and apply different construction methods of curves and surfaces. This approach is much more effective than the use of the standard packages such as MS Excel, Matlab. For instance, MS Excel is limited to the 6-th degree when constructing the polynomial curves, the Matlab package, despite the fact that it is a powerful mathematical laboratory, lacks the construction methods of polynomial surfaces and can be implemented only with the certain types of interpolation splines.

In this regard, the authors propose to develop a package of constructing curves and surfaces in the Visual C++ programming language for Windows by using the open graphics library OpenGL in order to work with computer graphics. The individual modules of this package are integrated into the information system of geological and surveying software.

The main aim of the article is the comparative characteristics of the construction methods of curves and surfaces by using the polynomial, the spline interpolation, B-splines, their implementation in computer graphics, and the choice of the most efficient method to solve the geometric problems of mining. This should be achieved with the maximum accuracy and minimum labor costs for the preparation of the input data.

**B-spline curves and Nurbs-surfaces at the solution of mining and geometric problems**

In practice, there are often such situations when it is necessary to determine the dependence of the calculated value based on the input value according to the numerical data. At constructing curves it is necessary to define the function  $y = f(x)$ , which describes more accurately the dependence of the resulting index on the chosen factor.

To calculate the parameters of the curve, the least squares method is used. It provides the minimum sum of the squares deviations between the actual and the received values, that is, to observe the condition:

$$\sum_{i=1}^n \left( y_i - \hat{y}_i \right)^2 \rightarrow \min ,$$

where  $y_i$  –is an actual value of the resulting index;  $\hat{y}_i$  –is a calculated value of the index;  $n$  –is a number of observations.

For example, the dependence of the resulting index  $y$  on  $x$  factor is expressed by the linear dependence,

$$y = a + bx ,$$

where  $a$  and  $b$  –are the unknown coefficients of the regression equation.

Having found the partial derivatives of the parameters  $a$  and  $b$  to find the unknown, we have a system of the following two linear algebraic equations:

$$\begin{cases} na + b \sum_{i=1}^n x_i = \sum_{i=1}^n y_i \\ a \sum_{i=1}^n x_i + b \sum_{i=1}^n x_i^2 = \sum_{i=1}^n x_i y_i \end{cases}$$

While solving this system of the linear equations, we obtain the formula for calculating the values of the following parameters:

$$a = \frac{\sum_{i=1}^n y_i - b \sum_{i=1}^n x_i}{n}$$

and

$$b = \frac{n \sum_{i=1}^n x_i y_i - \sum_{i=1}^n x_i \sum_{i=1}^n y_i}{n \sum_{i=1}^n x_i^2 - \left( \sum_{i=1}^n x_i \right)^2} .$$

The straight line is a special case of the polynomial (a polynomial of the first degree), a model which in general can be summarized as follows:

$$f(x) = A_0 + A_1x + A_2x^2 + \dots + A_M^M, \text{ or } f(x) = \sum_{i=0}^M A_i x^i ,$$

where  $M$  is the degree of the polynomial.

Having calculated the partial derivatives, relative to parameters  $A_i$  we obtain a system of  $M + 1$  linear algebraic equations for the parameters  $A_i$ :

$$\begin{cases} a_{00}A_0 + a_{01}A_1 + \dots + a_{0M}A_M = b_0 \\ a_{10}A_0 + a_{11}A_1 + \dots + a_{1M}A_M = b_1 \\ \dots\dots\dots \\ a_{M0}A_0 + a_{M+1}A_1 + \dots + a_{2*M}A_M = b_M \end{cases} .$$

The calculation of the partial to form a system of linear equations is quite a complex process. In this regard, the authors proposed a more simplified version of calculating the coefficients of the unknowns  $a_{ij}$  and the absolute term  $b_i$ :

$$a_{ij} = \sum_{k=1}^n x_k^{i+j} ;$$

$$b_i = \sum_{k=1}^n x_k^i \cdot y_k ,$$

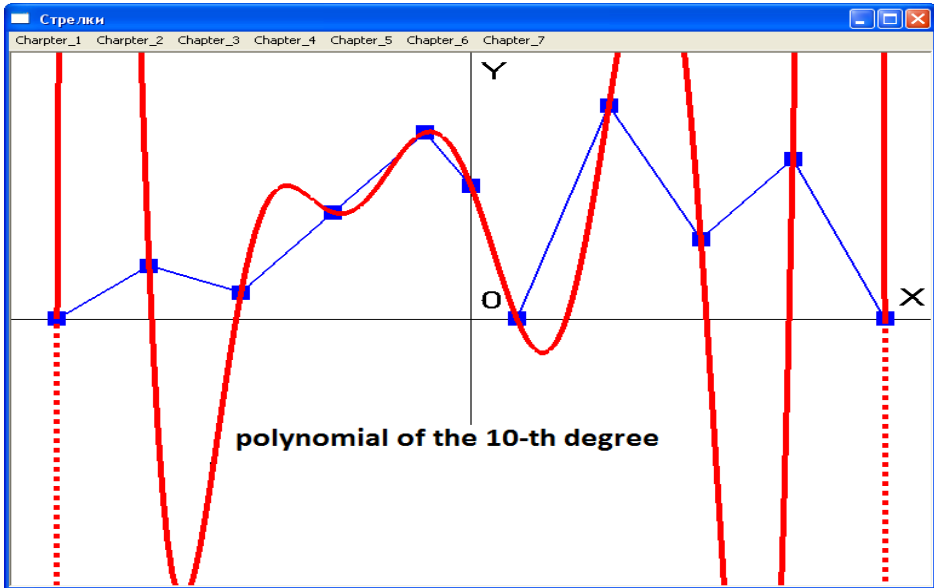
where  $x_k, y_k$  –are the coordinates of the control points;  $n$  –is a number of the control points ;  $i = 0 \dots M; j = 0 \dots M$ .

Hereinafter it is not difficult to solve a system of the linear equations by using the classical methods and to obtain the unknown coefficients of  $A_i$ .

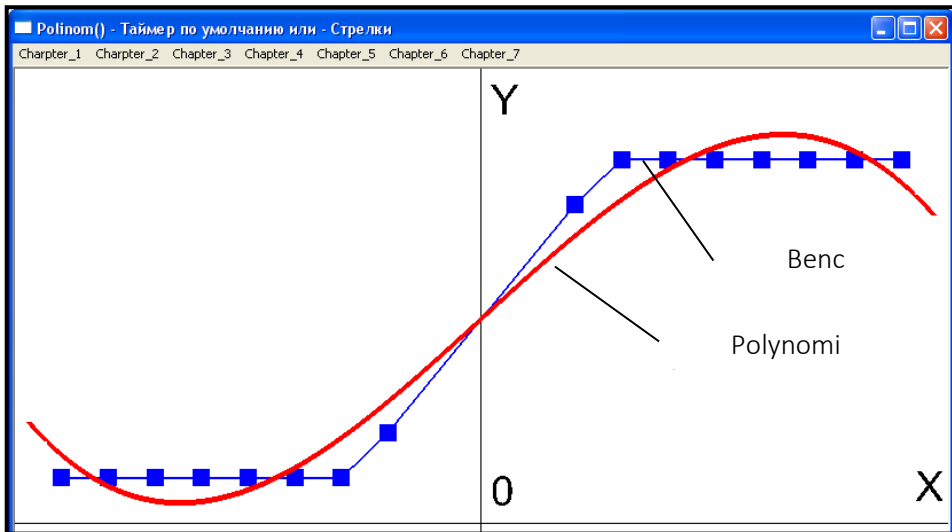
For the polynomial to pass through all the checkpoints, its degree should be the one less than the number of the given points.

In Figure1 we present a polynomial of the 10-th to the 11-th degree of the control points defined by their coordinates. The studies have shown that if the degree of the polynomial is close to the number of the control points, despite an increase in the coefficient of determination  $R^2$ , the result of the curve is getting worse. Thus, in Figure 1 the polynomial passes through all the control points, and  $R^2 = 1$ . However, the use of such a polynomial is impractical because of the sharp fluctuations between the checkpoints. In practice it is recommended to use polynomials of the small degree, but the degree of the polynomial should be chosen in dependence on the number of the initial data. Such dependence requires our further research.

In addition, the polynomial is not taken into account for the location of the control points, each control point affects the behaviour of the curve. In Fig. 2. we show the profile of the bench in an open pit that is described by a polynomial of the 6th degree.



**Fig. 1. Interpolation polynomial of the 10-th degree**



**Fig. 2. Bench profile described by the polynomial of the 6-th degree**

The figure shows that the polynomial curve smoothers the data in average, taking into account all the control points.

To determine the three-dimensional space of the polynomial in  $z = f(x, y)$  we use an the algorithm proposed by the authors (Zelensky, Baran, Lysenko, 2012: 75).

For a polynomial of the 5-th degree this dependence can be expressed as the following:



$$\begin{aligned}
z = & A_0 + A_1x + A_2y + A_3x^2 + A_4xy + A_5y^2 + \\
& + A_6x^3 + A_7x^2y + A_8xy^2 + A_9y^3 + A_{10}x^4 + \\
& + A_{11}x^3y + A_{12}x^2y^2 + A_{13}xy^3 + A_{14}y^4 + A_{15}x^5 + \\
& + A_{16}x^4y + A_{17}x^3y^2 + A_{18}x^2y^3 + A_{19}xy^4 + A_{20}y^5,
\end{aligned}$$

Where  $A_0, A_1, \dots, A_{20}$  – are the coefficients to be determined.

The coefficients number of the unknown (linear equations), depending on the degree of the polynomial is determined by the following formula:

$$K = \frac{(a + 1)(a + 2)}{2}.$$

For a polynomial of the 5th degree  $K = 21$ .

Calculating the partial derivatives with the respect to parameters  $A_i$ , we obtain the system of the 21 linear equations:

$$\sum_{s=0}^{20} a_{\ell s} A_s = b_{\ell}, \quad \ell = 0, 1, \dots, 20$$

that

$$\left\{ \begin{aligned}
& a_{00}A_0 + a_{01}A_1 + \dots + a_{0,20}A_{20} = b_0 \\
& a_{10}A_0 + a_{11}A_1 + \dots + a_{1,20}A_{20} = b_1 \\
& \dots \dots \dots \dots \dots \dots \dots \\
& a_{20,0}A_0 + a_{20,1}A_1 + \dots + a_{20,20}A_{20} = b_{20}
\end{aligned} \right. ,$$

where  $a_{\ell s}$  – are the coefficients of linear equations,  $b_{\ell}$  – are the free terms of the equations system,  $\ell$  – is a number of rows (equations);  $S$  – is a column number.

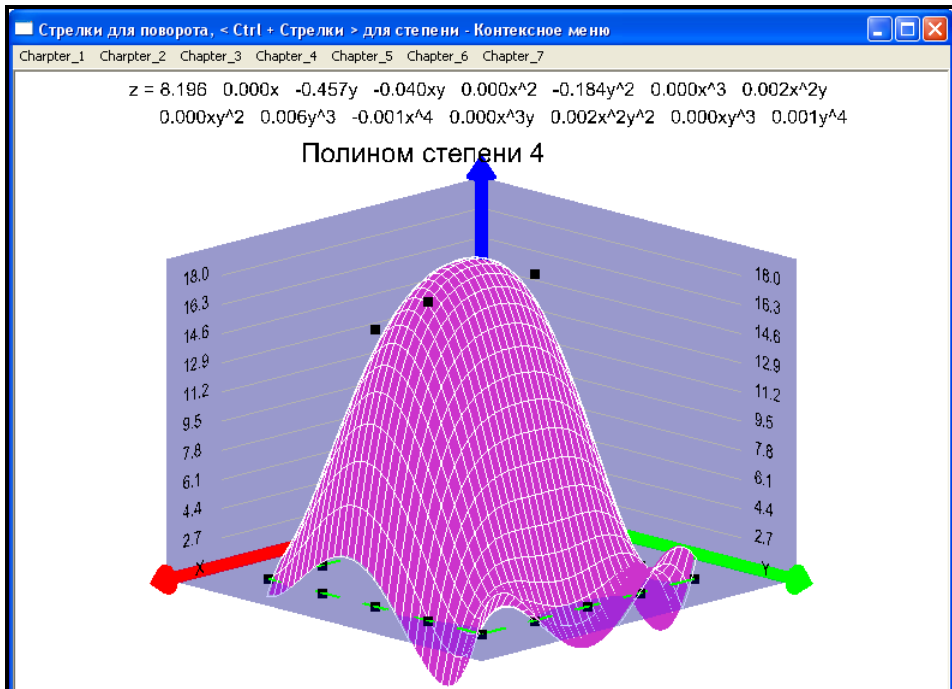
Thus, we have simple dependences for the determination of coefficients  $a_{\ell s}$  at the unknowns  $A_0, A_1, \dots, A_{20}$  and the free terms  $b_{\ell}$  :

$$a_{\ell s} = \sum_{i=1}^n x_i^{k_{\ell} + k_s} y_i^{p_{\ell} + p_s}; \qquad b_{\ell} = \sum_{i=1}^n z_i x_i^{k_{\ell}} y_i^{p_{\ell}},$$

where  $k_{\ell}, p_{\ell}$  – are the exponents, depending on the row  $\ell$ ;  $k_s, p_s$  – are the exponents, depending on the number of columns  $S$ :

$$\begin{aligned}
k_{\ell} &= c_1(c_1 + 1)/2 - (\ell + 1); & k_s &= c_2(c_2 + 1)/2 - (S + 1); \\
p_{\ell} &= \ell - c_1(c_1 - 1)/2; & p_s &= S - c_2(c_2 - 1)/2; \\
c_1 &= \text{int} \left( \frac{1 + \sqrt{8(\ell + 1) - 7}}{2} \right); & c_2 &= \text{int} \left( \frac{1 + \sqrt{8(S + 1) - 7}}{2} \right).
\end{aligned}$$

Figure 3. shows an implementation of the polynomial in the fourth degree space.



**Fig. 3. Smoothing the surface of the 4-th degree polynomial**

We pointed out the following drawbacks of using polynomials at the construction of curves and surfaces:

1. The high degree of a polynomial is limited by the permissible value of the automation data. At the sufficiently high degree of the polynomial the accuracy for the coefficients calculation of a polynomial model increases.

2. No local control. The construction of the polynomial model includes all entry points and the change of the coordinates of one point affects the behaviour of the curve or the surface.

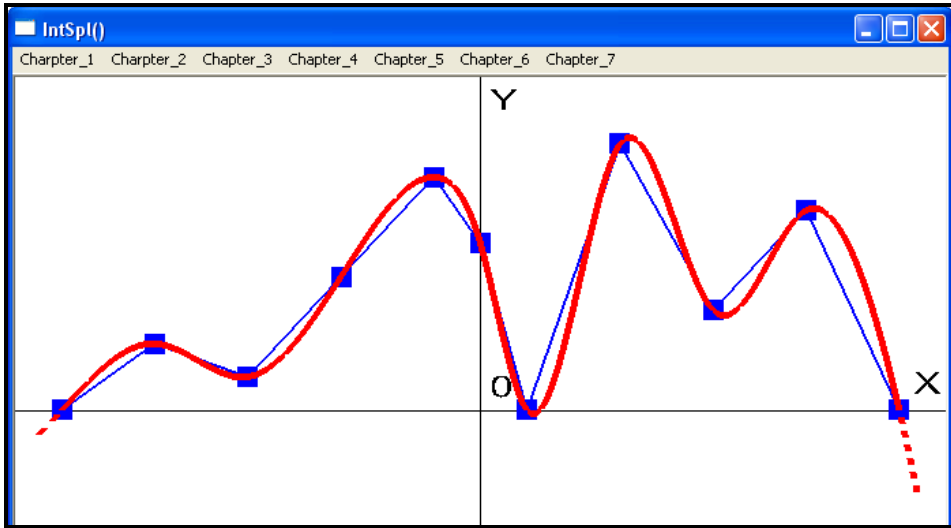
3. If the degree of the polynomial is close to the amount of the input data, despite the increase in the coefficient of determination  $R^2$ , the result of the curve is getting worse. This gives rise to the sharp variations between the control points.

Another important method for the construction of curves and surfaces are splines. They allow you to construct the smooth curves or surfaces consisting of small fragments.

Among the most common are the interpolation splines that pass through all the checkpoints and the approximation splines, which approach the points.

In spline interpolation the coefficients of the piecewise polynomial are calculated between two control points. Coefficients are calculated in such a way that the derivatives at the points of the contact are the same. The curve (surface) is continuous and smooth.

Among the interpolation splines the natural cubic spline stands out (Wright, Lipchak, 2006: 603) with the continuous first and second derivatives. This spline is global, that is, a change of one control point affects the entire behaviour of the curve. In Figure 4. there is an implementation result of the natural cubic spline interpolation.



**Fig. 4. Cubic spline interpolation**

When implementing this spline in each area between two adjacent control points, the following equation is calculated:

$$S_i(x) = a_i + b_i(x - x_i) + \frac{c_i}{2}(x - x_i)^2 + \frac{d_i}{6}(x - x_i)^3.$$

In conditions of the continuity of the first and the second order, we get the formula for the coefficients calculation of the spline:

$$a_i = f(x_i);$$

$$h_i c_{i-1} + 2(h_i + h_{i+1})c_i + h_{i+1}c_{i+1} = 6 \left( \frac{f_{i+1} - f_i}{h_{i+1}} - \frac{f_i - f_{i-1}}{h_i} \right);$$

$$d_i = \frac{c_i - c_{i-1}}{h_i};$$

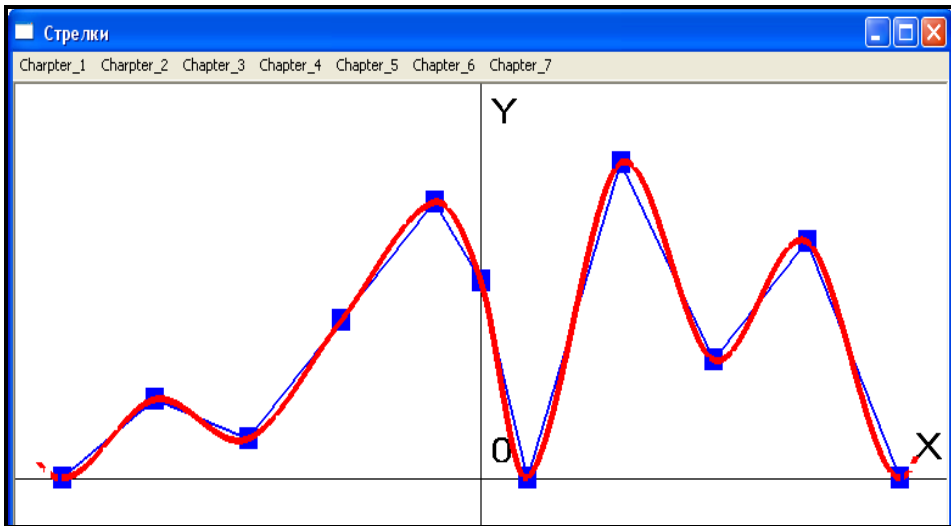
$$b_i = \frac{1}{2} h_i c_i - \frac{1}{6} h_i^2 d_i + \frac{f_i - f_{i-1}}{h_i},$$

where  $h_i = x_i - x_{i-1}$ .

For the comparison, we present a polynomial with the same input data that passes through all the control points, in Figure 1; its use is not advisable because of the sharp variations between the checkpoints.

The next type of the spline interpolation is the Hermit spline. It is local, in contrast to the natural cubic spline, and you should set the appropriate values of the first derivatives, besides the values at the control points, for its construction. The change of the derivative at the control point affects only the adjacent points. In this way you can control the first derivatives of the starting points in order to change the behaviour of the curve.

Figure 5. represents the cubic Hermit spline interpolation.



**Fig. 5. Hermit spline interpolation**

To implement Hermit splines we should find  $n-1$  cubic polynomial:

$$P_k(x) = a_k + b_k(x - x_k) + c_k(x - x_k)^2 + d_k(x - x_k)^3.$$

Each piecewise polynomial coefficient is calculated in the following way:

$$a_k = f(x_k) \text{ и } b_k = f'(x_k).$$

$$c_k = \frac{3f[x_k, x_{k+1}] - f'(x_{k+1}) - 2f'(x_k)}{x_{k+1} - x_k}, \quad d_k = \frac{f'(x_k) + f'(x_{k+1}) - 2f[x_k, x_{k+1}]}{(x_{k+1} - x_k)^2},$$

where  $f[x_k, x_{k+1}] = \frac{f(x_{k+1}) - f(x_k)}{x_{k+1} - x_k}$ .

To set the first derivative (coefficient  $b_k$ ), we recommend the following formula:

$$f'(x_k) = (1 - c) \frac{f(x_{k+1}) - f(x_{k-1}))}{x_{k+1} - x_{k-1}}.$$

In this formula, the parameter  $c$  varies from 0 to 1. According to this formula, the derivative in the middle of the segment is equal to the difference between the first split on the whole interval, multiplied by the coefficient  $c$ , with which you can control the curve.

The spline interpolation can be used for contouring, smoothing, etc. According to the last equation a piecewise polynomial prediction can be made.

The disadvantages of the spline interpolation are:

1. The initial data control points on the axis  $OX$  should be sorted in ascending  $x_0 < x_1 < x_2 < \dots < x_n$ .

2. It is necessary to obtain and store in memory  $4 * (n-1)$  parameter for the calculation of the piecewise cubic polynomials, where  $n$  – is a number of the control points.

For practical purposes B-splines are widely used, which are intended to approximate the input data (Zelensky, Baran, Lysenko, 2012: 140-154). The approximation methods are used mainly in the design tools and at the solution of mining-geometric problems to create an

object. By far B-splines are the industry standard for the designing and modelling of surfaces and are the major tool of the well-known OpenGL graphics library.

Each point of the B-spline curve is described by the following equation:

$$P(t) = \frac{\sum_{k=0}^L P_k w_k N_{k,m}(t)}{\sum_{k=0}^L w_k N_{k,m}(t)},$$

where  $(L + 1)$  – is a number of the control points (numbered points from 0 to  $L$ );  $P_k = (x_k, y_k)$  – are the coordinates of the control points;  $w_k$  – are the weights of the control points;  $N_{k,m}(t)$  – are the connecting B-spline functions;  $m$  – is the connection order of the B-spline functions,  $N_{k,m}(t); t \in 0, \dots, t_{max}$  ( $t_{max}$  – is a maximum value in the knot vector  $t$ , equal to  $L - m + 2$ ).

Each B spline function is based on the polynomials of some order  $m$ . If  $m = 3$ , the polynomials will be of the 3 order, and hence, the power of 2, that is, will be the quadratic B-spline. If  $m = 4$ , the corresponding polynomials have the 3 power, which means, they will be the cubic ones.

The basic formula describing the B-spline function  $N_{k,m}(t)$ , is as follows:

$$N_{k,m}(t) = \left( \frac{t - t_k}{t_{k+m-1} - t_k} \right) N_{k,m-1}(t) + \left( \frac{t_{k+m} - t}{t_{k+m} - t_{k+1}} \right) N_{k+1,m-1}(t);$$

where  $k = 0, 1, \dots, L$ . This definition is recursive and describes the function construction of  $m$ th -order of the two B-spline functions of  $(m - 1)$ th order. To initialize this formula, we have to define the function of the first order. It is a constant unit function within its range:

$$N_{k,1}(t) = \begin{cases} 1, & \text{if } t_k < t \leq t_{k+1}, \\ 0, & \text{otherwise.} \end{cases}$$

Note, that the sum of the set feature is automatically equal to one for all values of  $t$ .

The weight coefficients ( $w_k$ ) allow to manage the influence of the specific control points in the behaviour of the curve. So, if you want the curve to pass through a checkpoint, it is necessary to give the maximum weight. For this we are forming an array of weights ( $w$ ) in the following way:

$$w = (1, 1, 1, 1, 100, 1, 1, 1, 1, 1, 1).$$

That is, all the points are given the unit weight, and only the fifth point is given the weight equal to 100.

The result of the construction of B-spline curve based on 11 test points is shown in Fig. 6. The order of the polynomial for the construction of the corresponding curve is chosen  $m = 4$  (cubic polynomial).

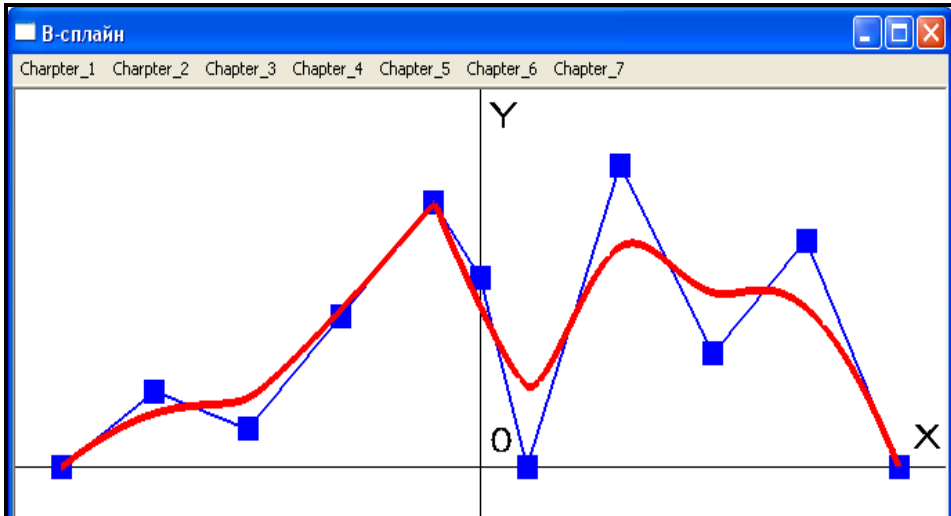
Let's point out the main benefits of B-spline:

1. Ease of calculation. Connecting functions are evaluated in the simple recursive manner. It is advisable to use functions to connect the second or the third degree.

2. Local control over the curve. The change in one control point does not affect the change in the curve, and it is only in its particular area. This is due to the fact that only a small

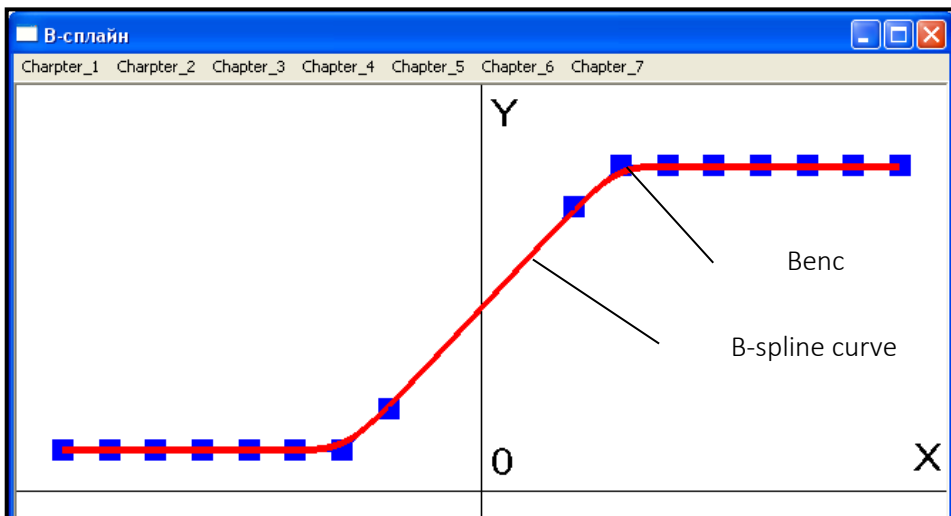
number of the control points, depending on the degree of the polynomial, affects each connecting function.

3. Using weights to pass through the strictly defined locations.



**Fig. 6. The construction result of B-spline curve by using weight**

In Figure 7 we demonstrate the profile of the bench in an open pit, described by B-spline, which has repeated the profile of the benches with the high accuracy. For the comparison, Fig. 2.demonstrates the profile of the bench in an open pit, that is described by a polynomial of the 6th degree. In this case, the localization of the control points is totally absent.



**Fig. 7. Bench profile described by using B-spline**

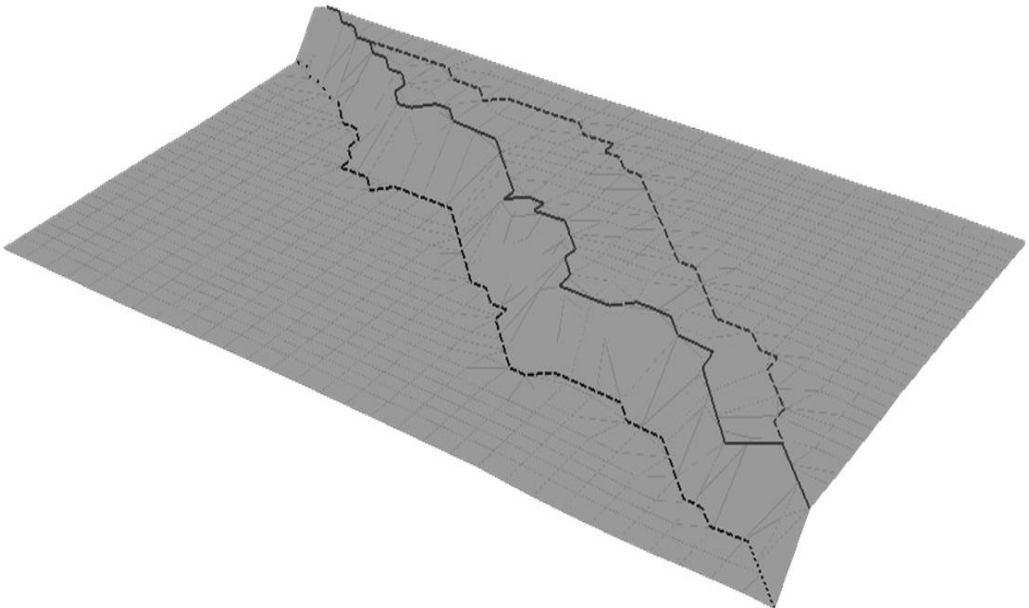
When applying the construction methods of B-spline curves on the NURBS-surface, the following formula is used:

$$P(u, v) = \frac{\sum_{i=0}^M \sum_{k=0}^L w_{i,k} P_{i,k} N_{i,m}(u) N_{k,n}(v)}{\sum_{i=0}^M \sum_{k=0}^L w_{i,k} N_{i,m}(u) N_{k,n}(v)},$$

where  $(M + 1)$  – is a number of the control points on the axis  $OX$  (numbered points from 0 to  $M$ );  $(L + 1)$  – is a number of the control points on the axis  $OY$  (numbered points from 0 to  $L$ );  $P_{i,k} = (x_{i,k}, y_{i,k}, z_{i,k})$  – are the coordinates of the control points;  $w_{i,k}$  – are the weight coefficients of the control points;  $N_{i,m}(u)$  и  $N_{k,n}(v)$  – are the correspondingly connecting B-spline functions in the direction of the axes  $OX$  and  $OY$ ;  $m$  and  $n$  –, respectively, are the connection orders of B-spline functions  $N_{i,m}(u)$  и  $N_{k,n}(v)$ ;  $u \in 0, \dots, u_{max}$  ( $u_{max}$  – is the maximum value in the knot vector  $u$  in the direction of the axis  $OX$ , equal to  $M - m + 2$ );  $v \in 0, \dots, v_{max}$  ( $v_{max}$  – is the maximum value of the knot vector  $v$  in the direction of the axis  $OY$ , equal to  $L - n + 2$ ).

NURBS stands for the uneven rational B-spline (non-uniform rational B-splines).

Figure 8. presents the Nurbs-surface benches in 3D-graphics (Zelensky, Baran, Lysenko, 2012: 157). For the passage of the surface strictly through the edges (crest and toe) of the bench, much higher weight is assigned to the corresponding nodes on the network  $a$  (accepted value of 1000).



**Fig. 8. The benches described by using Nurbs-surface**

B-spline is used both for the visualization of curves and surfaces in 3D-graphics and the accounting operations. B-spline in the form of a surface can be used to model the surface pit and for the evaluation of its displacement, the calculation of reserves, for the ore-mining accounting, mapping of the ore body, isolation lines.

### Conclusions and Suggestions

The comparative characteristics of the construction methods of curves and surfaces is made by the authors in the Visual C++ language for Windows by using the tools of the OpenGL graphics library. The developed mathematical and algorithmic method of the surfaces construction, based on B-splines (NURBS-surfaces) helped to create the most effective automation ways of the ore grades mapping, construction of the pit surface, surveying of the controlling weightier and the total calculation of reserves.

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## PUBLIC-PRIVATE PARTNERSHIP RISKS AND POSIBILITIES IN CONDITIONS OF THE UP-TO-DATE ECONOMICADVANCEMENT

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**Abstract.** The article is devoted to the study of the public-private partnership possibilities to achieve the system of goals as well as risks in the implementation of the public-private partnership because of their classification. The empowerment effective ways through reducing and preventing risks are proposed herein too.

**Keywords:** public-private partnership, public-private partnership possibilities, risks of the public-private partnership, risk management, project risk assessment methods.

*DOI: <http://dx.doi.org/10.23856/2314>*

### Articulation of Issue

The public-private partnership has not practically widespread yet as well as the theoretical analysis multifaceted in conditions of the up-todate economic progress of Ukraine. Ways and shapes of some economic growth, especially its motivated and strategically prospective grounds exist in spite of the fact that there are not any contradictions that such a partnership is new with its many specific features. The current conditions of the world economy development in all its diversity are characterized not only by some commercial interests of the subjects which are at the heart of the economic relations, but also by the social orientation clearly evident herein and the state spirit to ensure the decent life for its citizens and its priming on general civilizational values (Heiets, 2009).

Both the state and the business try to find opportunities to join efforts for the fuller and faster results. The partnership in and of itself acquires such importance. Every subject in each sector is looking for a reliable partner with unidirectional goals and appropriate ways to implement them, and a private business often became such a partner for these states in practice, and each state, in its turn, became the partner for the social business. The world experience of any partnership between the state and business has taken the form of the public-private partnership widely spreaded in many countries with high development. The public-private partnership implementation allows to carry out the monitoring for the process from the state and provides opportunities for any business to get profits from this cooperation as well as to be responsible for final results. Any private financing of the public important tasks assists to reduce the risks both for the public sector and for the private business. Therefore, the analysis of the empowerment and reduction of risks in the public-private partnership for the further economic development have an important theoretical and practical importance.

## **Analysis of the Recent Publications and Studies**

Aspects of the public-private partnership formation and implementation have been studied in the works of many scientists, including: J. McGillBuchanan, Jr., V. Varnavskiy, M. Weber, T. Veblen, E. Durkheim, J. R. Commons, D. North, R. Nureyev, G. Schmoller, V. Bazylevych, S. Varnalii, O. Vikarchuk, A. Halchynskiy, V. Heyets, N. Hrazhevskaya, P. Yeschenko, T. Yefymenko, I. Mazur, S. Mochernyi, A. Chukhno and others.

### **Remaining Open Issues**

The analysis of many theoretical studies and practice of the public-private partnership project implementation confirms the expansion of the private enterprises and private companies reasonably considering the state as a prospective partner. Then, the convincing conclusions about the opportunities that any private business will get and the risks, which it will avoid when participating in the public-private partnership as a partner of the state, should be made. Only after that, ways both to increase opportunities and to reduce risks for the long-term development through the public-private partnership can be offered.

### **Purpose of the Article**

To study the opportunities and risks arising in the joint activities of the state and business in the public-private partnership implementation, as well as ways to increase the opportunities and to reduce the risks both to the partners and to the society resulting in the facilitation of the economic development – the purpose of the article.

### **Key Findings**

The analysis of the theoretical background and practice of the public-private partnership in up-to-date economic development conditions of many countries shows that either theoretical understanding of the public-private partnership or the practice of the public-private partnership has its own specific nature. So, the partnership is sometimes identified with the private finance initiative as well as it is seen as a way of the economic development of cities, and as one of the effective mechanisms to combat the social inequality, and as a factor of the civil society development.

The world practice considers the "public-private partnership" in three vectors explaining it as:

- a system of relations between the state and business being used as a tool for the economic and social development or as some cooperation being implemented jointly by the government agencies and the private companies at the sites of the state and municipal property.

- a form of the business project implementation of the government using the resources of the private sector to meet the public needs.

Therefore, the theoretical consideration of the public-private partnership takes into account these three vectors whose features and directions are interpreted through the practice. And the theory reveals the essence of the public-private partnership is much broader than the practice sees it today including the following four aspects:

- 1) forms of the cooperation between the state and business for the realization of the socially significant projects on mutually beneficial terms;
- 2) cooperative relationships between the government and business to implement such socially important projects in various areas;
- 3) social institutions where both the joint activities of the public authorities and the private sector meet the society needs;
- 4) agreements between the public and the private parties in the production and provision of the infrastructure services and means of the budget financing effectivization.

The legislation of Ukraine involves both the world practice and the theory of the public-private partnership understanding. Any partnership is regarded herein as the cooperation based on the contract between the state and the local authorities on the one hand and the legal entities and natural persons - entrepreneurs (private partners) on the other hand on terms determined by the legislative standards (Varnalii, 2007).

The public-private partnership is the cooperation among Ukraine, the Autonomous Republic of Crimea, local communities represented by the respective state authorities, the local self-government (public partners) and legal entities, except the state and municipal enterprises or individuals - entrepreneurs (private partners) if it is based on the agreement in the manner prescribed by this Law and other legislative acts.

The public-private partnership is understood as official relations or agreements on fixed / endless time between the public and private parties where these two sides interact in the decision-making process and invest some limited resources, such as money, personnel, equipment and information to achieve particular purposes in the specific field of science, technology and innovation (Mazur, 2007).

According to the definition given by the World Bank, the public-private partnership is an agreement concluded between the public and private parties on the production and provision of the infrastructure services in order to attract the additional investment and, more importantly, as a means of the budget financing improvement of the effectiveness (Public-private partnerships in Europe – before and during the recent financial crisis, 2010).

The European Commission's Green Paper concerning the public-private partnership defines it as a form of some cooperation between the public authorities and the business community, whose aim is to provide funding, construction, renovation, management and maintenance of the infrastructure or provision of services (Commission of the European Communities).

The International Finance Corporation (IFC) determines the public-private partnership as the relationships used by the private sector to provide the public with some infrastructure assets and public infrastructure services traditionally provided by the state (Graeme, 2004).

The United Nations Economic Commission in Europe (UNECE) states that the public-private partnership is a contractual arrangement between the public and private sectors in the provision of some public services and infrastructure development. They will combine all the best that there is in these sectors: the private sector resources and its qualification potential, as well as the public sector capacity in the economic regulation and protection of public interests (Institute for Public-Private Partnerships, 2013).

As can be seen from the above, and taking into account all these definitions of the public-private partnership, we can determine its directions and such specific traits as:

- the public-private partnership is organized to achieve socially significant goals, and specific objectives of the economic and social development;

- the outcome of the public-private partnership is the improvement of public services and the effective use of the resources of the public and private partners in the current and long-run period.

Given this, we can conclude that the direction of the public-private partnership, its purpose and the results determine the essential characteristics of any public-private partnership. They are:

- any social and public control of the government and business interaction;
- some equality of the partnership, members of the public and private sectors;
- the partnership realization through the investment activities;
- common efforts and resources of the partners and reduction of their risks;
- parties' relationships being built as the contractual relationship based on the contracts having been defined and fixed before.

Some determined characteristics of the public-private partnership allow us to clarify those forms of the cooperation, which had not been defined as a public-private partnership between the private and public entities without such an orientation and characteristics. This significantly not only extends an understanding of the public-private partnership as a special form of the cooperation between the state and business, but also stresses that any public-private partnership is a new practical consolidation of efforts by all entities for the economic development.

Under the Green Book of the European Commission on the public-private partnership, such a partnership is characterized by:

- some relatively long duration of the relationship involving the cooperation of the public partner with the private partner in various areas of the planned project.
- project financing which is partly due to the private sector, partly due to the complex arrangements between the various actors but in some cases – with the possible involvement of public funds, including those which are in large amounts.
- service provider which is determined as well as its role at various stages of the project design, financing, implementation and completion which are specified.
- public partner's significance mainly focusing on the definite objectives to be achieved to meet the public interest, quality of services and pricing policy which are determined. The public partner is responsible for the project monitoring and the implementation of the requirements for each partner to achieve these goals.
- risks which are identified and allocated between the public and private partners, and the allocation of risk usually taken on the public partner.

One of the public-private partnership particular feature providing the same partnership, but not a temporary mutual cooperation is the coordination of risk-sharing, where the private partner assumes all the risks, or even most of them (Methods Identifying Types of Risks of the Public-Private Partnership to Assess and Determine the Risk Management Form, n.d). The exact distribution of risk is determined in each case according to the ability of the parties to control and to cope with risks (Braylovskiy, 2013). It promotes the public-private partnership in the European Union and makes actual need to complete the legal acts of Ukraine to promote the cooperation between the state and business, the improvement of the regulatory activity and the regulation of the public-private partnership, the procedure of its establishment, implementation, and the monitoring which is consolidating the distribution of risks. The legislation of Ukraine defines such peculiarities of the public-private partnership as:

- the technical and economic performance ratioguarantee, which is rather higher than in the case of such an activity performed by the public partner without the involvement of the private partner;
- the relationship length from 5 to 50 years;
- the transfer of risks to the private partner in the implementation of the public-private partnership;
- the private partner investments in the partnership objects with sources not prohibited by law.

As we can see, such features of the public-private partnership are different from the public-private partnership specific traits defined in European legislation. They primarily involves such differences in:

- the vision or duration of the partnership terms of its functioning;
- the vision of financing side allowing to involve various forms of the project financing including the public funds and their use;
- the definition of the roles of the public-private partnership parties, the identification of the service provider and the public partner;
- the vision and approach to the risk allocation, taking into account the ability of the parties to deal with such risks, as well as keeping the proportionality in the distribution of such risks.

So, specific traits of the public-private partnership determined clearly and in detail in the European legislation convince the potential participants in partnership with the state that the cooperation of the state with the private partner provides a number of benefits for each side. Improving legislation as to the detailed opportunities and risk sharing in the public-private partnership will promote the development of the public-private partnership in Ukraine.

The public partner of the public-private partnership gets the opportunities subject to the ways of the economic development and achievements both for the state and for the society. We divide them into two groups: opportunities for the state and society development and opportunities for the economic advancement.

The first group of the state capacities for the development of state and society and public-private partnerships include:

- Urgent implementation of only socially important projects;
- Quality improvement and expansion in number of public goods and services;
- Public infrastructure improvement;
- Expansion of the control and the overall development strategy influence;
- Integration of science, education, manufacturing promotion;
- Public and private R&D and design works;
- Corporate social responsibility.

The second group of the state opportunities for the public-private partnership economic development include:

- state property effective use;
- modernization initiatives in key sectors;
- new technologies to attract foreign investments;
- more financial and material resources;
- budget savings;
- management experience expansion;
- development of the project financing innovative forms;
- avoidance of risks and threats; and

- increase in jobs and employment.

However, the private partner in the implementation of the public-private partnership gets opportunities that can be divided into two groups:

- opportunities to have the status and play a significant role in the economy;
- economic and investment priorities.

The first group of opportunities involves the following features:

- participation in the economic development of own country and the effective assistance to its social development and welfare of citizens;

- project status advance because of its importance in the economy and the participation of the public partner in it;

- improvement of relations and the regulatory framework through the forward and backward linkages like "society - the state -business";

- creation of the positive business image in the society;

The second group of the economic opportunities and investments consists of the:

- expansion of own market share;

- entry previously closed sectors of the economy (infrastructure, utilities, social, etc.).

- availability of loans and concessional loans, including credits against the state guarantees;

- involvement of the budget for the project development;

- reimbursement of credit guarantees;

- security of sales and implementation services;

- reduction of the competitive pressure and the need for the constant improvement of competition;

- decrease in the investment risks;

- avoidance in the number of risks in the long run.

Some difficulties appear together with the public-private partnership capacities, which we offer consider as tasks to perform. Such tasks ensure the implementation of the:

1) budget planning - the implementation of the individual projects where the source of income is the cost of the budget and there is some need in a detailed budget planning;

2) expansion of the managerial skills and abilities, and continuous qualification improvement of civil servants who control the implementation of the public-private partnership;

3) analysis of potential risks, their assessment and possible consequences.

Therefore, we consider the nature and characteristics of risks in the public-private partnership. The term "risk" means such circumstances which, according to the parties, may have an adverse effect on the benefits which the partners plan to get implementing the project.

The risks for each participant in the public-private partnership arise at each stage of a public-private partnership from its planning to the implementation of goods and services. The appetite for risk will be different for each side of the partnership depending on its role in the implementation of the public-private partnership. We define the following four groups of risks. The first group of risks focused on risks of the legislative provision and regulation. The second group of risks consists of financial, monetary and associated with changes in the exchange rate risks. The third group of risks involves technical and technoeconomic risks in the design of the construction and operation. The fourth group of risks deals with market risks associated with changes in market prices or demand for manufactured goods and services.

Any risk assessment of each group foresees their detalization in each the public-private partnership project and determines the likelihood of their occurrence, possible adverse effects

and the size of possible losses. The result of the risk assessment should be the formation of the mechanism of risk sharing based on the following principles of:

- proportional distribution of any risk among the public and private partners;
- possibilities for each partner to evaluate and control the hazards and their impact on the performance of the contract;
- timely implementation of measures to prevent risks or minimize their effects.

The risk sharing mechanism and its application in practice requires the risk assessment in each situation with taking into account the resource capacity to the partnership (Klimov, 2012).

The public-private partnership world practice offers to reduce these risks through the government guarantees, insurance coverage or through the guarantees from the international financial institutions or export credit agencies and investment promotion.

As to the assessment and measurement of risks, we propose to divide the risks which can be assessed and the risks that are difficult to be deductible. The risks being difficult to assess and to reduce include risks associated with the legislative framework imperfection and monetary instability in the current conditions of the economy. This is particularly true when we talk about issues of licenses, permits, taxation and contract enforcement, and risks associated with currency fluctuations, especially the depreciation of the national currency.

Therefore, measures reducing risks may be as follows:

- involvement of the public or private partners' additional resources having been defined and agreed by the partners before;
- contract review because of the risk including the extension of its actions;
- termination of the agreement by one of the partners with a simultaneous settlement of issues dealing with the compensation of the related losses;
- insurance against failure or improper performance of the contract because of the risk of the partnership.

Taking into consideration the fact that any funding of the infrastructure projects from the private sources provide an opportunity to reduce the cost of public funds and resources allocated for the development and operation of any infrastructure, then, the state support for these projects must be at the regional level. Such projects must be included into the plans of the regional development by reducing the risks for the participants of the public private partnership.

Thus, proportional and equitable distribution of all the groups of risks among partners is essential for the successful implementation of any public-private partnership. Conversely, the disproportionate allocation of risks, or its shuffling off the burden on one of the partner will slow down the project implementation and reduce its effectiveness, despite the great opportunity for each participant of the public-private partnership and the desire to participate in such a partnership for the development of economy and society.

## **Conclusions**

1. Any public-private partnership is to achieve socially significant goals and to clear objectives of the economic advancement, as well as to improve the efficiency of public services and the effective use of resources.

2. The legislation features of any public-private partnership should be clearly defined and convince the potential participants of the public-private partnership that their mutual beneficial participation in the long term as defined in European legislation where the terms of

the partnership functioning is not governed, allows various forms of the project financing, in particular, the use of public funds. The participants define the public-private partnership significance as an organization - the service provider and the public partner, the division of risks with regard to the ability of the parties to deal with such a risk. To follow some proportionality is recommended in the allocation of risk to facilitate the cooperation between the public and private partners and increasing benefits for both parties.

3. Any participation in the public-private partnership projects extends the capabilities of each partner, which are complemented and mutually provided.

4. Together with the possibilities of public-private partnership, some difficulties need to be considered as a task to be performed. They ensure the realization of the opportunities like budgeting in case of the individual project implementation where the budget expenditures foreseen and the expansion of managerial skills and abilities of the public servants controlling the implementation of public-private partnership.

5. Both the analysis and evaluation of all the groups promote the mechanism of the effective risk management as well as the public-private partnership partners' capability implementation grounding on the following aspects:

- proportional distributions of each risk among the public and private partners;
- possibilities for partners to evaluate and control the hazards and their impact on the contract performance,
- measures timely implemented to prevent risks or minimize their effects.

6. The mechanism for the efficient risk sharing and its application in practice requires the risk assessment in each situation and taking into account the resource capacities of all the partnership participants.

7. Ways expanding opportunities and reducing risks is to improve the legal framework regulating the activities of the partners and their responsibility with taking into account the business proposals and the prevention of the corruption elements in the contractual relations among the public and private partners.

8. Considering the fact that the infrastructure projects create an opportunity to reduce the cost of public funds and to accelerate the economic advancement and growth, different ways of motivation to develop any public-private partnership should involve the state support for these projects at the regional levels and its inclusion into the plans of the regional development.

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## STUDY OF FACTORS FOR EFFECTIVE INTERACTION IN THE CHAIN "HEI – EMPLOYER"

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**Abstract.** The study has proved that the higher education institutions of Ukraine, which carry out training of qualified specialists for all sectors of the economy, are not full players in the labor market. Lack of coordination and cooperation between employers and HEIs leads to the formation of an inefficient model of competences of future specialists and makes it impossible for them to quickly adapt to the business processes of the enterprise. The article substantiates the expediency of introducing dual education and competence-based learning while training specialists in the national HEIs and using affiliate marketing tools for building effective interaction between higher education institutions and employers.

**Keywords:** higher education system, labor market, competence-based learning, dual education, interaction in the chain "HEI - employer".

*DOI: <http://dx.doi.org/10.23856/2315>*

### Introduction

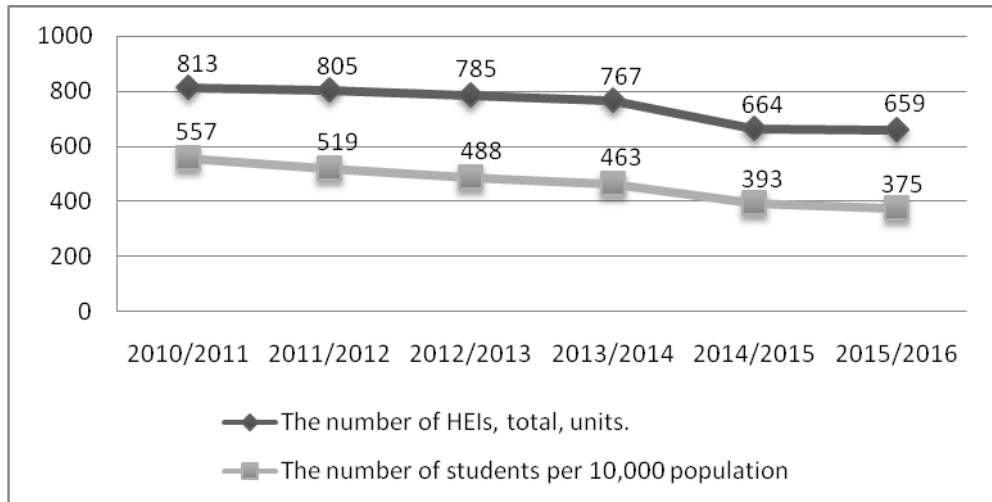
The labor market in Ukraine and recruitment companies require that the job seekers, in addition to a high level of professional training, possess a number of specific competences. The reform of the national higher education system that is getting primarily competence-oriented, unfortunately, does not allow higher education institutions (HEIs) to become a full player in the labor market. This is due to a number of objective and subjective factors, the most significant of which is that the results of training specialists by Universities do not coincide with the expectations of the employers, and the graduates do not have sufficient level of practical training, which makes it impossible for them to quickly adapt to the business processes of the company-employer. Solving these problems involves, in addition to introducing competent-oriented training and improving the practical training of students, using affiliate marketing tools for building interaction between HEIs and employers.

### The results of the study

In most cases, when a university graduate gets a diploma and his first job, he faces a number of difficulties, in particular, the practical implementation of the acquired competences and challenges of rapid adaptation to the internal corporate and organizational culture. This applies to both graduates of public and private universities. In this connection, the topical

question arises: what causes the mismatch between the training of specialists by the Higher School and employers' requirements? In addressing this question it is advisable to first assess the situation on the market of educational services of Ukraine.

According to statistics, at the beginning of the 2016/2017 academic year, there were 657 higher education institutions in Ukraine and at the beginning of the 2015/2016 academic year - 659 (fig. 1).



**Fig. 1. Dynamics of the number of HEIs in Ukraine and number of students per 10,000 population**

Source: Official website of the State Statistics Service of Ukraine, 2017

According to the plan of higher education reform, Ukraine needs to reduce the number of HEIs to 217. The main criteria for assessing the performance of HEIs are their professionalism in training specialists and feasibility of their functioning. The implementation of reforms by the Ministry of Education and Science of Ukraine led to a reduction in the burden on teachers in the context of eliminating unnecessary bureaucratic, "paper" work, as well as strengthening the fight against corruption and academic ill-manner (plagiarism). HEIs' cooperation with the employers and their greater autonomy in dealing with issues of local character is critical to the effective reform of higher education. This, in turn, may be achieved, to some extent, by decentralization.

No less important are the reforms in secondary education. In particular, it is planned to revise the primary school curriculum, followed by its relief, and to transit to 12-year secondary education following the example of Western countries. (Kwit, 2015). On the other hand, external study, individual and distance learning are the forms of learning that are becoming increasingly popular among Ukrainians. According to the Constitution of Ukraine and international legislation, parents are responsible for the child's education and can do it in a traditional manner (in school), and by applying modern methods: remote or home education (parents alone or through tutors). In Ukraine, thousands of children have changed school for home schooling and master all subjects of the curriculum at home at a convenient time, but each month they must demonstrate their knowledge to the teachers of the school, to which they are attached. This will give them the opportunity to not only pass the final external

independent evaluation and obtain a certificate, but also to use the school library and to communicate with teachers (Meest-Online, 2017).

An important step in reforming the current system of higher education in Ukraine is the realization of the National Action Plan for 2016-2020 on implementation of the National Qualifications Framework (NQF). The National Qualifications Framework is a key instrument for lifelong learning.

The National Qualifications Framework (NQF) is a systematic and structured by the competences description of the qualification levels. It is intended for use by Executive authorities, institutions and organizations implementing the state policy in the sphere of education, employment and socio-labor relations, educational institutions, employers, other legal entities and individuals for the development, identification, correlation, recognition, planning and development of qualifications.

According to the Minister of Education and Science of Ukraine L. M. Hrynevych, the National Qualifications Framework is a tool that binds the education system to the labor market. It also helps to understand how a person would progress in lifelong learning, and therefore the content of this framework will significantly affect the formation of Education Standards (Hrynevych, 2016; Zakharchenko, 2015). For a comprehensive solution to the problem of introducing the National Qualifications Framework, it is necessary to adopt the Law of Ukraine "On Education", which involves the creation of inter-institutional platform for filling the NQF - National Qualifications Agency, which has to unite education system and labor market.

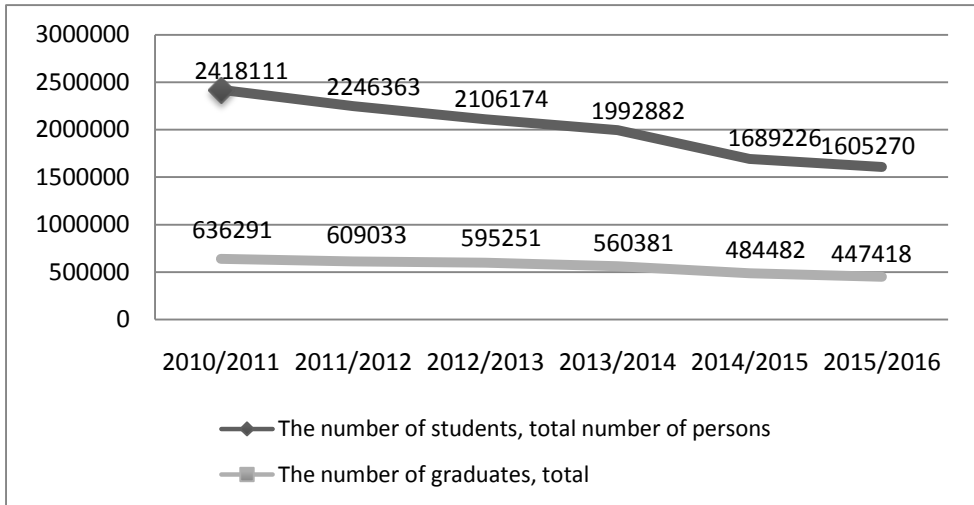
It should be noted that these measures, despite their being essential for the improvement of higher education in Ukraine, proved to be insufficient. To form a set of competencies that will be required by the employer in a few years, both the students and young specialists – graduates of HEIs, must not only constantly learn, but also improve their knowledge and skills and use them in practice.

Nowadays, the Internet offers a huge number of online courses, blogs, social media, free e-books, webinars, which provide a great opportunity to expand knowledge. On the other hand, technological advances and quick access to information on the Internet leads to the rapid aging of information and an increase in employers' requirements to the job applicants. The system of higher education in Ukraine remains academic, conservative and static. Consequently, graduates, as a specific HEIs' product, do not meet the needs and requirements of employers. The combination of professional competencies and personal qualities of young professionals coupled with the art of communication and rapid adaptation to business processes is crucial for employers. That is why, in the course of training, national Universities should not just equip students with a set of professional competencies, but above all, teach them to use the acquired knowledge, that is to perform specific actions. After all, the best knowledge will not make the young specialist more influential and successful unless he applies it in practice. The synergistic effect of such activities will, firstly, bring the graduate closer to achieving specific goals for employment and career development, and secondly, strengthen the interaction between HEIs and employers in the process of training specialists and their employment (Lukominskyi, 2017).

According to the Ministry of Education and Science of Ukraine, in the 2015/2016 academic year, there were 1605270 students in HEIs of I-IV accreditation levels, which is 812841 students (or – 33, 6%) less, than in the 2010/2011 academic year. According to experts, this is due to the demographic situation in the early 2000s.

17100 people from 484482 HEIs’ graduates registered as unemployed in 2015. A third of them, that is, about 5,700 are economists, despite the fact that there is a shortage of qualified professionals in Ukraine. Thus, it is necessary to analyze in detail the situation on the labor market in Ukraine.

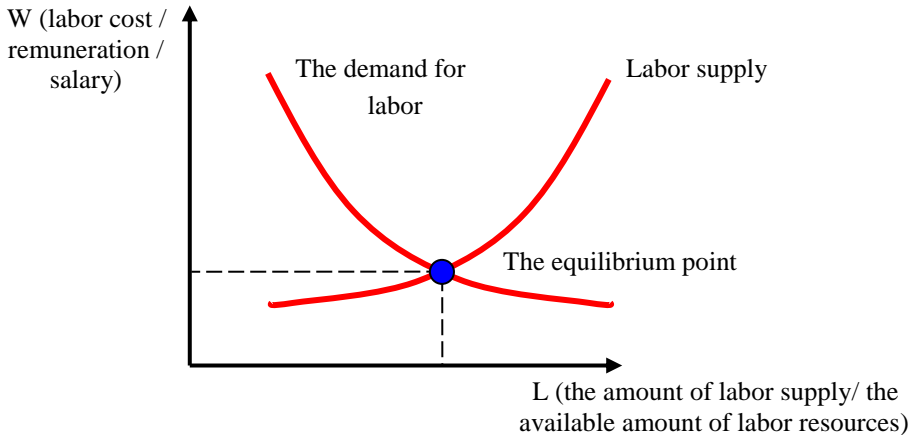
Dynamics of the number of students enrolled in Ukrainian universities and those that were released is presented in fig. 2.



**Fig. 2. Dynamics of the number of students enrolled and graduates of Ukrainian HEIs, persons**

Source: Official website of the State Statistics Service of Ukraine, 2017

In the classical model of the labor market the buyers of labor (in our case - skilled graduates) are employers. On the other hand, the sellers, creating supply, are the graduates of HEIs of different categories. Meanwhile, HEIs, which trained these professionals, often remain aloof from the process of their further support in finding employment. Based on the tenets of the classical model of supply and demand, the labor market has to adjust itself at the level of the equilibrium wage rate (labor cost) (Fig. 3).



**Fig. 3. Equilibrium in the labor market**

If the labor market is dominated by perfect competition, the wage rate and employment level are determined by the intersection point of market demand and market supply curves. The equilibrium combination of  $W^*$ ,  $L^*$  expresses a state of full and effective employment. In the process of self-regulation of the labor market, the role of the profit of the entrepreneur, who is the buyer in the labor market, is equally important. In an effort to reduce expenses including the hiring of labor, enterprises modernize production, improve the organization of work and the like, which in turn leads to increased requirements of employers, and therefore, should be reflected in the training of specialists in higher education system, as a potential labor market. In practice this is not happening.

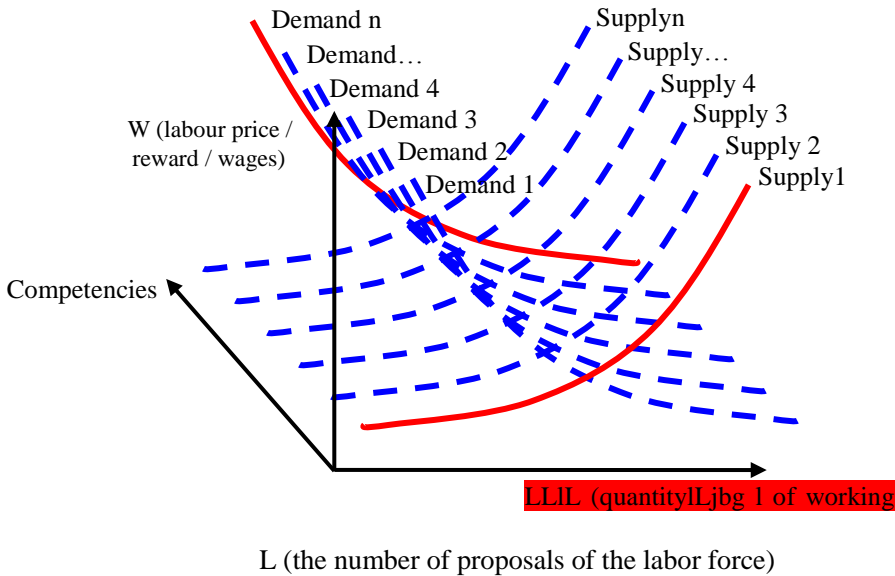
The labor market research assumes, on the one hand, the definition of the specialists' competitiveness, and on the other hand, the competitiveness of the enterprise that will offer them a job. Special attention at this stage should be paid to a study of the factors shaping the requirements for quality and competitiveness of the set of specialists' competencies.

The factors that shape the aspects of some uncertainty on this issue include the difference in approaches to developing requirements and parameters for the selection of potential employees on the part of HR management of the enterprises-employers. HR managers develop a list of qualities of job applicants required for a particular company.

They include not only the qualification requirements, but the personal qualities too. Such criteria are referred to as "qualities" of a specialist, that is, a socio-economic category, which allows defining specific qualities of job applicants depending on the characteristics of the particular workplace at the enterprise level taking into account the requirements to the applicant. Recruitment, selection and assessment of personnel is carried out based on the developed requirements to competitiveness and quality, guided by the results of marketing research of the labor market, given the trends in relation to changes in supply and demand, using the factors of market segmentation, which correspond to the specific industry and region of location of production and consumption of products (Sahaidak, Matseyeva, 2013).

Therefore, in fact, the classic model of supply and demand for the labor market of young specialists in Ukraine is not valid. The point is that supply and demand are in the same

plane in the classical model. In reality, supply does not meet demand qualitatively. Hence, there is a need to introduce a quality indicator of labor force/specialist into the model. The level of the particular specialist’s competencies may serve as such an indicator.

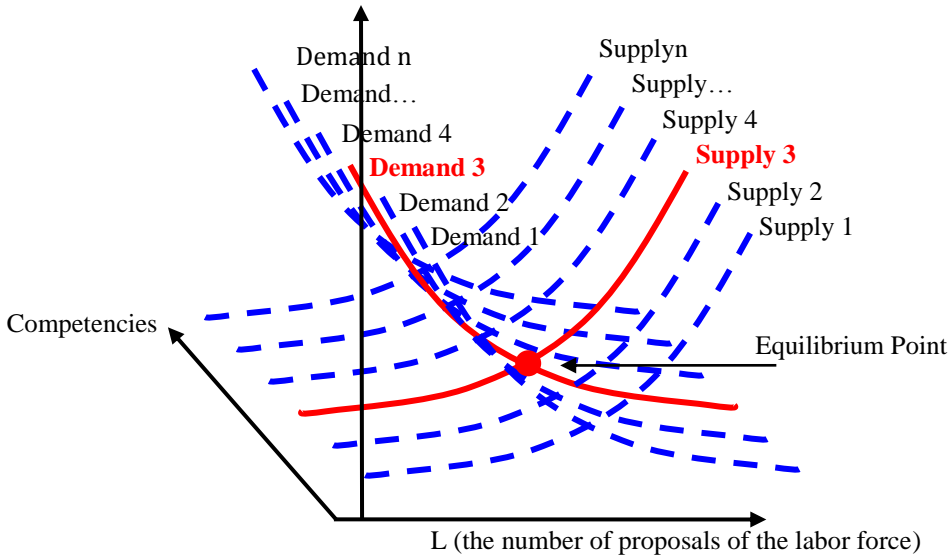


**Fig. 4. The model of the market of supply and demand in the primary labor market**  
 Source: Elaboration of Authors

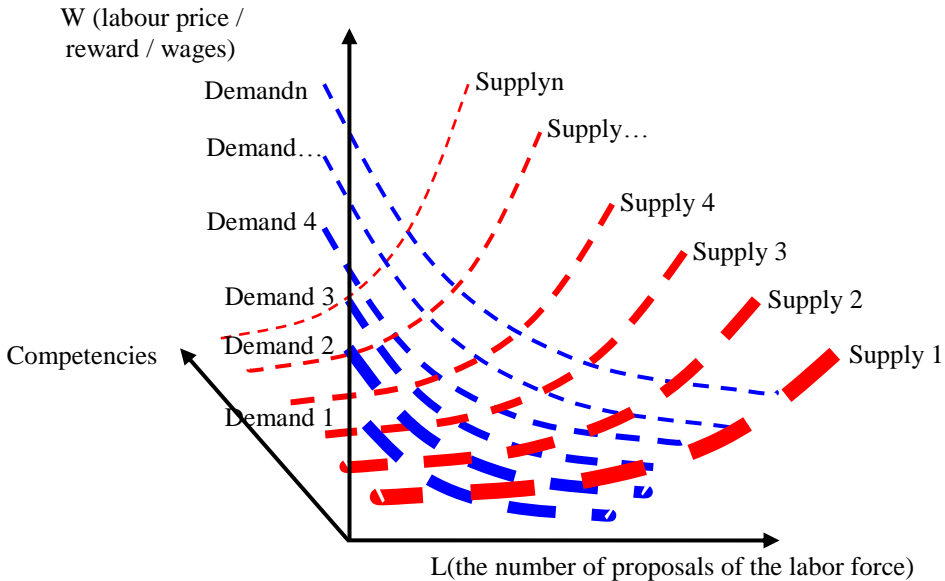
In our opinion, the classic model of supply and demand in the labor market of Ukraine (in particular, the primary labor market, when HEIs’ graduates become job seekers), must be complemented by another dimension, namely competencies. Therefore, the model becomes three-dimensional due to the three axes of ordinates: price, quantity and competence (fig. 4).

In this model, the equilibrium of supply and demand on the market can only be found when both the buyer and the seller are in the same plane along the axis of competencies (fig. 5).

In most cases both the buyer (employer) and the seller (graduate/applicant) of a working place act at different levels of all the competencies. In addition, one can state with great probability that slope of demand and supply curves are different at different levels of competencies. Obviously, the quantity of the labour participants, having the maximal (or optimal) set of competencies, is small enough on the part of the graduates. And, on the contrary, the number of applicants with limited (or insufficient) competencies is much bigger. That’s why the graduates with the low index of competencies offer themselves to the employer at a lower price. The employers, on their part, wish to get more specialists, having the maximal/optimal level of competencies, and are ready to pay a higher price for it (fig. 6).



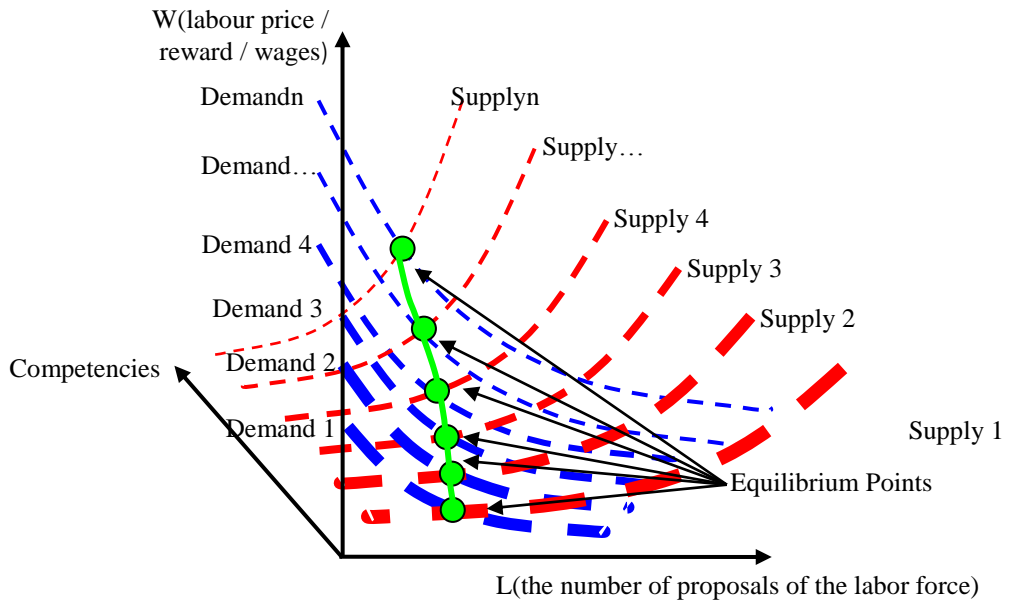
**Fig. 5. Equilibrium model of demand and supply on the primary labor market, in which equilibrium is achieved at a certain level of competencies**  
 Source: Elaboration of Authors



**Fig. 6. Positions of demand and supply in the labour market**  
 Source: Elaboration of Authors.



Due to the difference of demand and supply at different levels of the competencies quantity, the curves of demand and supply have different slope angle and different length. However, even at the minimal level of wages (since 01.01.2017 it is 3200 UAH), there is no necessity for an employer, for example, to have a great number of unqualified employees. According to it, the intersections of demand and supply curves, being formed at all the levels of competencies, create the corresponding set of intersection points which are the points of the market equilibrium, according to the definite levels of a specialist's competencies. This multitude of points creates the equilibrium curve line at the labour market (fig. 7).



**Fig. 7. Equilibrium curve in the model of labour market**

Source: Elaboration of Authors

The curves of demand and supply, in their turn, outline area of values of possible demand and supply variants. These areas are three-dimensional in the presented model. The intersection of the area of demand and supply values with the basis area, which is the competencies/ the number of proposals, and altitude, which is the equilibrium curve, form all the multitude of the variants which meet the market requirements. In other words, it's all the multitude of variants of making/setting contracts between the potential employers and potential employees.

Taking into consideration all the above-mentioned, we come across another, not less actual problem: which competencies is it necessary to form for a student during his/her studies at the Higher Educational Institution (HEI) today in order to be in employer's popular demand at the labour market tomorrow? To our mind, it's rationally to use the international experience of the youth employment promotion combined with the search of the alternative variants.

Practically all the countries of the European space take a special care of the youth employment. The level of the young people unemployment does not increase 10-15 % in such countries as Switzerland (4.3%), Germany (6.9%), Austria (12.6%). However, some countries

of EU, particularly Greece (48.9%), Spain (45.3%), Italy (39.1%) suffer from the excessive quantity of young people who need to be employed. Both in the first and second cases, one of the universal ways is the integration of an employer's interests and young applicant's values, for whom the chances of being employed increase as a result of different training programmes (Kolyshko, 2016).

The main reasons of the HEI graduates' lack of employment in the first working place are: the excessive proposal of the working force; the imbalance of knowledge and skills to the real needs of the employer; the unwillingness of an employer to waste resources (material, time, human ones) on the new employees' adaptation to the real production, the lack of the employers' stimulation to create new working places (in current conditions of the recession and economic development slow down, the opportunities of the country economy are extremely limited).

One of the solutions to a situation that has been observed is, firstly, to improve the content of the education through the development of professional standards and adapting educational programs to them, secondly, to stimulate employers to spread the practice of training in the workplace (compared with dual education); thirdly, to form additional competences and professional competencies in the students during their study. Workplace training refers to training that takes place when students are doing real work. The education is carried out both in education institution and in the workplace, and the employer is taking a direct part in this process. This work can be paid or unpaid, but it should be real and connected with producing real goods or services.

It should be noted, that traditional developed systems of dual education can be found in the countries with the lowest current indices of youth unemployment. The above mentioned systems are characterized by the ability to "grow" specialists who do not require adaptation to the conditions of production and are familiar with the specific equipment and business processes, increased levels of employee loyalty to the company, strong supportive relationships in a team, successful solution of the issue of discrepancy between curriculum and real working conditions. Such a system of staff training in no way substitutes traditional education, and is not even considered to be an alternative, just an integral supplement. Therefore, at least four parties, which are a person, a State, an educational institution and an employer are concerned with successful implementation of such practices (Kolyshko, 2016).

Thus, interaction between HEIs and employer companies in terms of realization of dual training program can be effective and profitable for both parties provided a proper balance of original conditions is kept. The following terms of cooperation are among original condition: contractual arrangements; joint costs obligations; the procedure of applicants casting; the motivation of the participation of the parties in the implementation of such programs; providing the enterprise with specialists having professional skills and competencies, enabling them to perform specific functions immediately; the involvement of HEIs in the process of graduates employment on the labour market, etc. (Zemlânskiy, 2010).

Besides, it is worth mentioning that Ukrainian legislation, unlike the laws of EU Member States, completely lacks factors stimulating employers to implement practical training in the workplace. The "motivating" activities may include employers being involved in final exams and other forms of knowledge control (Article 33 of the "Law on Vocational Education ") and the responsibility of heads of enterprises, institutions and organizations to ensure the creation of adequate conditions for practical training in the workplace, compliance with rules and norms of labour protection, safety and industrial sanitation in accordance with existing legislation (article 51 of "Law of Ukraine on Higher Education ") (Kolyshko, 2016).

On the other hand, the countries where the status of the teacher stands high and their educational culture is well developed, turned out to be in the top in the implementation of competence oriented approach to teaching and learning. Having studied the experience of the countries, in which the model has proven to be the most successful, it can be concluded that the funds, which are allocated to education, are important, but more important is the culture that promotes the desire and ability to learn (Lunáček, 2013).

In view of competence oriented approach the level of education is determined by the ability to solve problems of various levels of difficulty on the basis of existing knowledge. Competence oriented approach does not deny the value of pure theoretical knowledge, but it focuses on the ability to use the acquired knowledge. Therefore, the main components of modern student competences must be the following ones:

- knowledge, but not just rapidly changing information. Types of knowledge which should be found and pointed in the right direction of their activities;
- ability to use this knowledge in a particular situation;
- understanding how you can gain this knowledge;
- adequate self evaluation, estimation of the world, your place in the world, specific knowledge, its necessity for your activities as well as methods of its acquiring and application.

This formula can be represented in the following way: competence = knowledge mobility + method flexibility + critical thinking (Bubela, 2013).

Thus, competence oriented approach confronts such phenomena as traditional subject teaching, based on the idea of delivering and assimilation of knowledge (information); selective, two - level (knows -does not know) system of assessment; forced forms of classes organization (conveyor method of organization); vertical, hierarchically organized system of administrative control.

## **Conclusions**

Analysis of relevant problems of higher education and the challenges of Ukrainian labour market allow us to conclude that there is an imbalance, firstly, between the graduates of vocational education and higher education establishments, i.e. there is a shortage of staff in the market (both of manual labour specialists and professionals with higher education), and secondly, between the students learning curriculum and requests and requirements to employees, i.e., the qualifications of the graduates do not meet the requirements of the labour market and employers. In this connection there is an objective need for reforming the system of higher education with the aim of its better orientation to the requirements of the labour market; improvement of the mechanism of financing the Government Order on Education (the abolition of the Government Order as a means of support to uncompetitive HEIs); development of a fundamentally new law on vocational education and the adoption of a new "Law of Ukraine on Education"; improvement of the State Standards of Education which must be based upon competence oriented approach in accordance with levels of NDF on the grounds of modern professional standards; enhancing of the prestige of workers and engineering professions in society; implementation of the dual education system in order to minimize employers' investment in staff training; empowering employers in employment, together with additional obligations in the sphere of development and assurance of qualifications standards, as well as in the arrangement of training, retraining and advanced training of graduates that have not been employed in the first workplace taking into account

the current and prospective labor market needs; giving opportunities for the youth to improve competitiveness, in particular, by facilitating the internships, including studying abroad.

Being built on a parity basis, the interaction between HEIs and enterprises-employers is to encourage professional orientation of the population; definition and agreement of the current and prospective needs of the workforce, vocational training and staffing of vacant jobs; improvement of the mechanisms for providing training and professional practical work for students; providing advanced training (internship) of HEIs' teaching staff at the corresponding enterprises; involving business representatives in the supervisory boards of HEIs to ensure real impact of labour market on institutions of higher education strategy including curriculum programs and organization of the educational process (Kolyshko, 2017); arranging joint work on the content of education, paying particular attention to the development of professional standards and taking their positions into account while carrying out educational programs; establishing an independent internal and external system of education quality assessment; optimization of HEIs' management system, including their consolidation, improvement of material and technical base, which will result in improving the quality of education.

The crisis taking place in the system of higher education of Ukraine, concerning, in particular, reduction of the contingent of students is to encourage management of HEIs to increase their competitive advantage by improving staff policies (involving temporarily unemployed scientific-pedagogical employees into new programs and grant projects etc.), reviewing and improvement of its own services strategy in order to be more competitive in the market of educational services.

One of the problems of the HEIs' graduates employment is frequent inability of the employer to form a set of clear criteria for the evaluation of the applicant, either raising claims to high, or relegating them to the key duties prescribed in the official instructions. Apparently, as regards a specialists' or graduates' set of competencies, there must be a unique one according to the standards of education of one or another field (technical, economic, pedagogical etc.), which will give this specialist a direction to follow. In particular, a graduate of the HEIs of Economic profile must be able to:

- keep his mind open and be mobile (to monitor internal and external environment of enterprises, have command of languages for business communication and have skills to apply them, to be able to feel the "right place" and "the right time" and be mobile in order to be there);

- to learn and use the acquired knowledge in practice (be capable of self-training and lifelong learning);

- to analyze and plan (critical acquiring of the information, its classification, being able to see the trends of development of events and phenomena, create business-idea, design business plans, develop tactical and strategic objectives);

- to implement proposed solutions (business plan/idea of the outcome);

- to monitor the progress of events (to carry out monitoring of business processes, create a system of indicators to help track changes and deviations from the plans);

- to respond (to be mobile and responsive in making managerial decisions);

- to take situational judgment and be totally responsible for them (to be able to take the decision apart from the emotions and cutting off unnecessary information);

- to bear the responsibility (to be able and ready to bear the social and other responsibility for their actions/activities).

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 Porat, M. U. (1978). Global Implications of the Information Society. *J Communication Journal of Communication*, 28(1), 70-80. doi:10.1111/j.1460-2466.1978.tb01565.x

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  - All figures should be in shades of gray; Drawings and tables should be placed in the appropriate place in the text; • All figures and tables must also be sent in separate, well-described files. • If figures or tables are not owned by the author (s) of the text it must be accompanied by a written permission of their owner.
  - the table font size of 10 points;
  - quotations with the straight-line fonts given in the double quotation-marks;
  - word forms and foreign words (inflexible in the language of article) should be written with the Italics font style;
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**The contents of articles, the credibility of data, facts, quotations, level of self-dependence of obtained results are entirely the responsibility of the authors of the articles**

THE EXAMPLE OF THE DESIGN OF MATERIALS**NEW ECONOMIC SYSTEM OF SOCIETY DEVELOPMENT****John Sitdson**

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**Abstract.** The article deals with the information economy as a new economic system wherein information and knowledge are the main products. It is proved that a central component of an economic system is work with information and use of information systems in the process of management. The author substantiates the requirement for the search of new approaches to the solution of problems of development of institutional structures of information economy.

**Keyword:** knowledge, information, system, information economy, management.

*DOI: <http://dx.doi.org/10.23856/xxxxxxxxxxx>*

**Introduction**

Global growth of information and telecommunication technologies, on the one hand, and also the necessity of development of scientific knowledge in the area of theory, methodology and practice of informative approach of study of information economy and society, on the other hand, determines topicality of consideration of the process of formation of information economy. Information turns into a strategic resource and factor of acceleration of scientific, technical and technological development and becomes a part of the real economy.

**Subtitle of the body**

It presupposes the conceptual comprehension of the process of establishment of an informative and technological method of production and related to it forming of an information paradigm in a modern economic science.

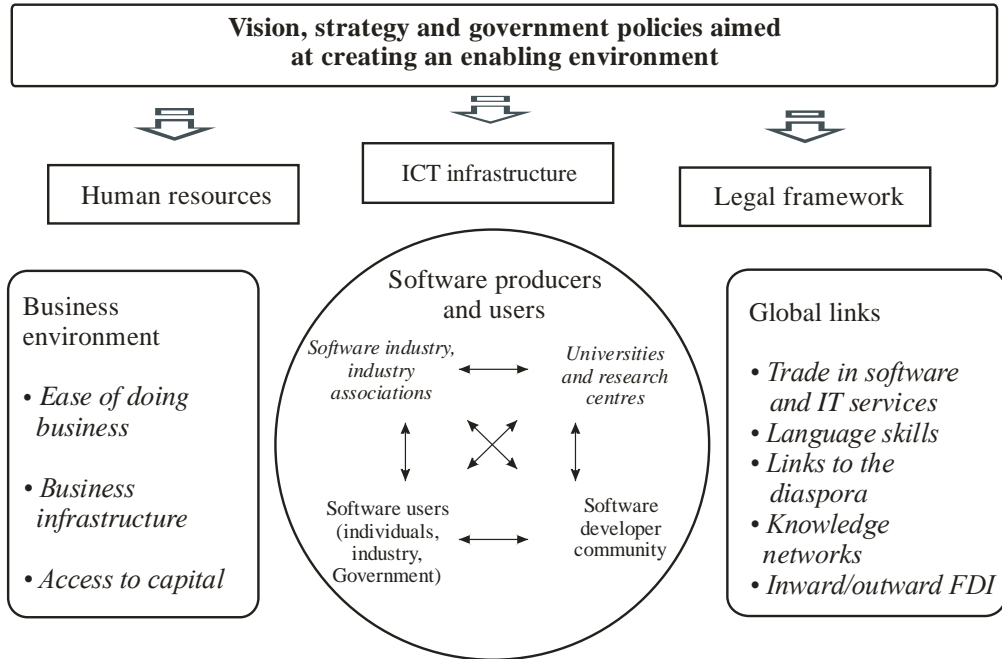
The evolutionary process of the establishment of information society is represented in researches of P. Drucker, who used a notion “information revolutions” (Drucker, 1989). He worked out the theory of the stages of development, which allows deeper understanding of the logic of establishment of information economy.

The term “information economy” was first used in 1976 in works of Mark Porat, an employee of the Stanford Centre and designated by him as a cluster of industries, engaged in the production of modern databases and facilities which provide their application and functioning (Porat, 1978). He is given the credit for introducing a distinction between the primary and secondary information sector of economy. A primary sector, according to his opinion, can be estimated quantitatively, while everything is much more difficult with the secondary one.

The Revolution in the development of information technologies allowed to talk about a global network, which materialized the globalization of economy. New information technologies, in fact, are not simply becoming the instruments of application, but also the processes of development. The system-oriented analysis of the information economy with due

regard to the forming informative paradigm of the economic theory requires additional consideration.

**Figure. 1. A national software system (Information Economy Report, 2012)**



### Conclusions and suggestions

Conception of information economy includes fundamental definition of information society. It's defined as a system of connections and relations between individuals, which appear in the process of interchange of information concerning social and economic activity. Information economy is simultaneously defined as a system of public relations, wherein the information is a basic productive resource.

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