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THE ROLE OF MERCHANT CREDIT INSURANCE IN PROCESSES STIMULATING THE ECONOMIC SECURITY OF COMPANIES

Abstract. In the paper an attempt to present the role of merchant credit insurance in processes that affect the security of business operations of companies has been taken. As a part of the discussion, the areas and sources of the risks have been presented, their overall distribution has been taken into account, and particular attention has been paid to those that could be covered under insurance contracts concluded with credit insurers. The reasons underlying their use have been discussed, taking into account both the specificity of the risk and the benefits of its protection. In the practical part, the results of author's own research and the conclusions drawn have been presented. The final part of the paper contains conclusions on an attempt to assess the economic viability of merchant credit insurance in the activities of individual companies taking into account the external market conditions in which they operate.

Keywords: credit insurance, risk management

1. Introduction

The level of knowledge and opportunities concerning the management peculiarity of various risk types are significantly improving over time both for individuals, entire societies or economic entities. The evolution of the phenomenon makes us conclude that we should not aim solely at the elimination of risk, but to its management. Losses the company is incurred from the environment and the losses to which an enterprise exposes itself by its decisions determine the extent of its risk[1], which has a significant impact on the level of its economic security. Therefore, it is necessary to seek comprehensive protection of the interests of the enterprise in all areas where it may be exposed to the negative consequences of risk implementation. One of the key areas that should be covered is the risk of non-payment for sold products or services rendered under deferred payment terms.

The purpose of this paper is to attempt to assess the role and importance of merchant credit insurance in the processes that stimulate economic security of enterprises in the area of receivables loss.

2. Areas and sources of risk in companies operations

Future situations are influenced by a large number of variables. It is possible to try to divide them into those that are at least partially identifiable, and into those in which such attempts are ineffective. Difficulties in this field are the cause of the occurrence of a risk phenomenon, which may result in damage. Its origins can be inherent in natural processes, but this is not always the case. Very often they are the result of intentional, conscious activity of people but may also be unintended, being a by-product of the action addressed to another purpose. In the case of natural changes that occur without human intervention their prediction generally does not cause any major difficulties. The opposite situation occurs in the case of human activity, which often causes sudden transformations in the economic environment, manifested through the so-called progress variables. They include: population growth,

[1] M. Kuchlewska, *Ubezpieczenie jako metoda finansowania ryzyka przedsiębiorstw*, Wydawnictwo AE, Poznań 2003, p. 40.

education and training, accumulation, technical progress and innovation, geographic discoveries, changes in human needs and the ways in which they are met, as well as the international situation. The rapid pace of development of science and technology, shaping the relationship of production, increasing the size and importance of risk and spreading its manifestations, is what counts on the decision-makers and the actions that come with it[2]. Each and every one should strive for the risk to be more predictable. One cannot avoid it, but one can manage it[3].

Therefore, it is important for every entity to be aware of the possibility of realizing the risk of a consequence that could be its direct and indirect loss. Direct effects are usually visible quickly and can be measured, but indirect ones can unfortunately be revealed at different times. The array of dangers is broad and covers not only such common occurrences as theft of valuable equipment or attractive goods from warehouses, factory hall fire, destruction of buildings by flood or hurricane. The losses from these causes are very serious, but this is only a small part of the company's possible losses. Equally, the consequences of the implementation of financial risks, which cannot be clearly defined, are not more important. These risks are associated with any event that adversely affects an entity's ability to achieve its objectives or strategy or whether it is a measurable probability of loss or less than expected returns[4]. Proper identification and risk assessment gives it an opportunity to integrate it into the business management process. In addition, its capture requires consideration of potential consequences of its implementation, which may hinder achievement of the objectives set. These risks are more and more often associated with random events, but may result from decisions and actions that are not random, i.e. those that are independent of the will, knowledge, care and general psychophysical efficiency of the person. Losses are then unfavorable changes in the company's financial flows, i.e. deviations from the expected value of the company in the direction less than expected. They often run out in the future, which makes collecting information about them generally impossible or very difficult, as is the case of risk of receivables loss.

3. Risk of receivables loss

The pressure that the company faces in terms of resource constraints and market demands imposes the need to make money, which results in the emergence of risks that are manifested through threats that may prevent achievement of the intended objectives. In the market economy companies are facing increasing competition and constant volatility of external conditions. In order to meet these conditions they increasingly decide to liberalize delivery conditions, which results in an extension of the collection period. The higher the range of freezing of receivables, the greater is the probability of the cost of lost opportunities and, at the same time, the lower return on capital. This is a commonly occurring risk at present, whose essence is that the borrower cannot or does not want to meet the commitment made at the time of the transaction. This phenomenon was especially exposed by the financial crisis of 2007–2010, then many OECD companies operating on the grounds of lack of insurance claims went bankrupt, many units reduced sales, which was their way to manage risk. In this way, a spiral of problems coincided, as a result of which the banks reduced funding for companies without adequate insurance coverage[5]. As a result, there were observed several trends in the insurance market that resulted in increased demand for policies, the identification of underserved markets, increased competition and growing concerns over increasing risks. It was noted that active observation and assessment of market conditions and indicators were crucial in

[2] B. Nietyksza, *Zasady kompensowania szkód z tytułu ryzyka*, PWE, Warszawa 1971, p. 26.

[3] D. Laster, *Every One is a Risk Manager*, [in:] P. Shimpi (ed.) ,Integrating Corporate Risk Management, Texere LLC., New York 2000, p. 16.

[4] A. J. McNeil, R. Frey, P. *Embrechts, Quantitative Risk Management: Concepts, Techniques and Tools*, Princeton University Press, 2015, s. 3.

[5] *The Impact of The Financial Crisis on The Insurance Sector and Policy Responses*, OECD Publishing, 2011, no. 13, pp. 30–31.

minimizing negative impact of economic fluctuations in the economy. Proactive and meticulous management based on the state of the economy can mitigate the impact of business cycles[6].

Sometimes receivables from customers are a significant part of assets. Without paying attention and taking security measures, the business will never be fully secure. This is confirmed by studies conducted, among others, in Poland each year the so-called bad debts in about 20 % are a direct cause of business insolvency (similar situation occurs in Western Europe). This is shocking if one takes into account the relatively high popularity of merchant credit insurance or other forms of payment security in the region.

Contracts concluded, despite the detailed specification of the obligations of the parties, contractual penalties for breach of contractual obligations and the manner of settlement of disputes, do not provide reasonable assurance of the legitimate interests of counterparties. Frequently, the specific nature of the transaction makes it impossible to identify possible commercial weaknesses during the execution of the contract, and in many cases they are revealed after the contract had been completed. Undoubtedly, credit risk is the most widespread in the era of corporate lending not only from financial institutions but also from trading partners. In practice, however, under the concept of credit there are many variants of it: financial, merchant, advance, commitment or trust. However, there is no one and at the same time exhaustive classification in this regard, while its creation seems very difficult, but also pointless. From a business practice perspective it is important to distinguish between the risks that can be insured and those whose insurers are not willing to accept. From a theoretical point of view, an insurance company is able to cover any type of risk insurance coverage. Due to the scope of the study, the consideration will be limited to the risk of loss of receivables secured by credit insurance, which, according to Swiss Re assumptions has been classified as financial risk[7]. This risk can be defined as a numerical value characterizing the ability of a given counterparty to meet its obligations[8]. The source of information about credit risk may be the ones who are interested in insurance as well as other entities with whom the cooperation is conducted. An entity, whose obligations are insured, does not necessarily need to know that. It becomes necessary to gather a lot of information including financial data, information about an owner, references and opinions, information on the entity's history, about the business, the information that describe the organization of the company and the existing cooperation with both suppliers and recipients. Additional sources may be registers which are intended to ensure transparency and security of circulation. Acquisition and processing of customer information is a quest to equalize the opportunity in a game called "customer risk assessment" by completing missing data or drawing conclusions from the data already available[9]. Information obtained from many sources allows an insurer to recognize, assess and monitor credit risk.

4. Credit insurance in the process of managing the risk of receivables loss

The functioning of enterprises in the market environment creates the flow of business between companies, accompanied by specific risks of delays in supply, poor quality of products or services, and particularly delays or lack of payment. The pursuit of profit maximization has necessitated the need for professional, planned and organized diagnosis and countermeasures arising from the realization of the various risks within the risk management processes within the individual stages ascribed to them, including credit risk. Integrated risk management is becoming increasingly popular, mainly because of the promotion of academics, credit rating agencies and state institutions[10].

[6] E. Clipici, *Credit Insurance During the Financial Crisis, Practical Application of Science*, 2013, vol. 1, no. 1, 43–44.

[7] *Credit and Bonding Reinsurance*, Swiss Insurance Training Center, Swiss Reinsurance Company 1986.

[8] M. Sierpińska, D. Wędzki, *Zarządzanie płynnością finansową przedsiębiorstwie*, PWN, Warszawa 1997, p. 149.

[9] M. Wyżycki, D. Pałczyński, Źródła informacji dla oceny ryzyka kredytowego, [w:] Ryzyko kredytowe – wierzytelności hipoteczne. Modelowanie i zarządzanie, red. K. Jajuga, Z. Krysiak, Związek Banków Polskich, Warszawa 2004, s. 38.

[10] P. Bromiley, M. McShane, A. Nair, E. Rustambekov, Enterprise Risk Management: Review, CritiQue, and Research Directions, Long Range Planning, no. 48, s. 265.

– In the case of business activity, credit risk is practically unavoidable. With this type of transaction we have to deal with each other in relation to the parties to a legal relationship, each of whom is supposed to fulfill the benefit of the other, and the dates of fulfillment of the benefits are different. As a result one side of the relationship must previously provide for the other and then expect the other's mutual benefit. The credit insurance contract is of the highest trust, it is based on the reliability and completeness of the information provided by the parties and their full cooperation during the insurance period. The information that underlies the risk assessment is not generally public and available. In addition to hedging the insurer puts emphasis on introducing procedures to minimize risk. Most often they come down to the following of the conditions during the term of the insurance contract by the insured, in which he is obliged to transfer certain information to the insurer. When risk-taking measures prove ineffective, properly prepared and undertaken actions imposed by the insurer should lead to a reduction in the magnitude of the damage and avoid further, sometimes even greater damage. It can be said that they constitute an emergency plan covering direct procedures at the time of the occurrence of the event giving rise to the damage, the directions of the activities enabling the continuation of normal operations and the procedures to restore the situation before the occurrence of the injury. The introduction of a credit risk analysis and monitoring system offers additional benefits[11]:

– facilitates control of receivables management;

– reduces staff training costs and erroneous credit decisions;

– reduces the amount of bad debts and thus reduce the cost of capital;

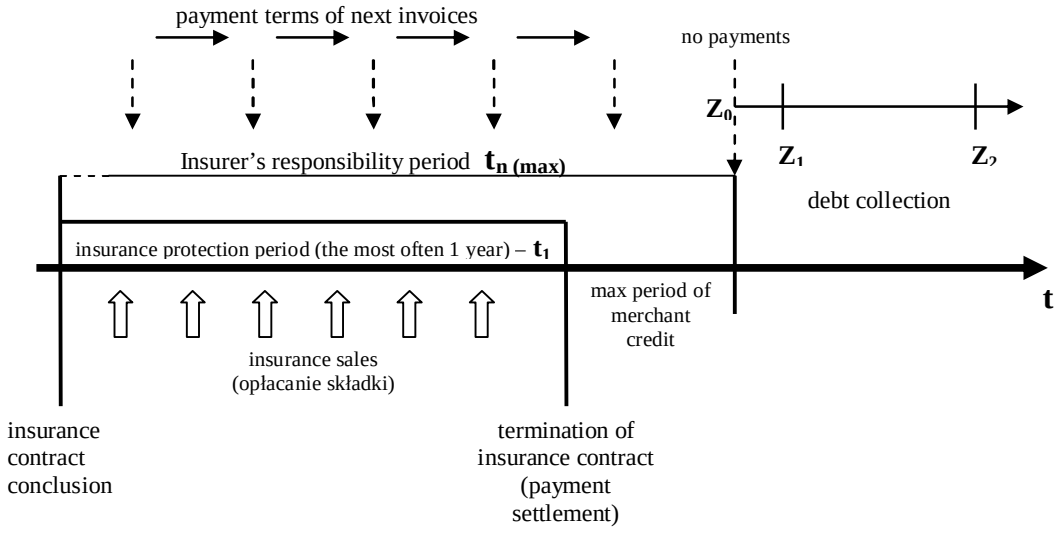
– increases the amount of information about the business environment.

The characteristic of credit insurance is that the duration of an insurance contract, the expiration of which is in the case of a classical insurance policy, means the end of the liability of an insurance company, the loan guarantee can only mean the end of the insurer's overdraft period, while its liability extends over the life of the loan. Since the parties to a credit transaction are not fulfilled at the same time, the entity which first satisfies them (the lender) is at risk of non-performance by the other party. A diagram of the functioning of trade credit insurance covering the individual periods during the insurance contract is shown in Fig. 1.

Treating insurance as the only form of risk management that is an alternative to managing it is a wrong approach. On the contrary, all safety processes should be mutually complementary and, what is extremely important, the introduction of one element cannot loosen discipline from the other. It is in the interest of the company to prevent, which, on the one hand, reduces the likelihood of injury and, if the risk to which it is the consequence, is insured, leads to a reduction in the cost of insurance. In most cases, despite the fact that the risk is transferred to the insurer and so its part remains with the insured (own share, franchise). Awareness of the risk, which may result in a threat to the achievement of the target, makes the companies themselves interested in taking control actions that reduce the chance of realized risk, thereby allowing them to continue to operate.Research in the world confirms that there is a link between the volume of insured trade and the increase in sales, especially in exports. With a 1 % higher level of insured export value contributes to an increase in the value of exports in general by 0.01 %. At the moment when the insured exports less than 1 %, 5 % and 10 % of the insured exports, it turns out that every EUR involved in export credit insurance generates an average increase in exports by 1,3 EUR. From further observation it is clear that countries where the share of insured receivables is higher represent more trade than those in which insurances are rare. Thus, there is a strong positive statistical relationship confirming the impact of receivables insurance on export[12].

[11] M. Sierpińska, D. Wędzki, *Zarządzanie płynnością finansową w przedsiębiorstwie*, Wydawnictwo Naukowe PWN, Warszawa 1998, p. 150.

[12] J. M. Koen van der Veer, The Private Export Insurance Effect on Trade, The Journal of Risk and Insurance, 2015, vo. 82, no. 3, pp. 608–614.



$$t_{n\,(max)} = t_1 + m_{max} - m_{min}$$

where :

$t_{n\,(max)}$ – max period of insurer's responsibility
t_1 – insurance period
m_{max} – max payment term
m_{min} – min payment term

periods:

$z_0 - z_1$ – lender's self debt recovery
$z_1 - z_2$ – recovery by or through the insurer
z_2 – compensation payment in case of insufficient debt recovery

Fig. 1. Terms and time intervals used in merchant credit insurance.

Source: R. Dankiewicz, Przedziały czasowe w ubezpieczeniu kredytu kupieckiego, [in:] ed. J. Handschke, Studia ubezpieczeniowe, ZN nr 127, Wyd. UE, Poznań 2009, p. 177.

5. Merchant credit insurance in the light of own research

In order to obtain empirical data on the role of the merchant credit in the processes that stimulate economic security of enterprises, a pilot study was conducted using a questionnaire and a direct interview was used as a technique of observation. The survey research was the most effective form of data collection, often inaccessible in no other way. Their use was explained by the ability to clarify possible complexities of the formulation and the speed of data acquisition.

The purpose of the study was to determine the role and significance of merchant credit insurance in the processes ensuring economic security of the audited entities. The surveyed population comprised 147 small, 14.3 %, medium (72.8 %) and large (12.9 %) respondents who responded to the questionnaire between January and March 2017. When comparing the results obtained with the data of a similar study carried out in 2005, there is a clear increase in interest in the offer of insurance companies on the part of entrepreneurs in the analyzed insurance. In the group of large entities, an interest in the offer increased from 19.5 % to 63 %, in case of medium companies from 4.7 % to 38 %, while in the case of small entities from 0 % to 4.7 %. According to the declarations, the lack of interest of small entities results from the lack of an acceptable offer for this market segment. For most large and medium-sized companies decisions are made by the board of directors – 57 % (29 entities), one by the president/owner – 19 % (10 entities) and the chief accountant – 24 % (12 entities). As the main reasons for increasing interest in the insurer's offer within insuring commercial credit entrepreneurs provide: the need to secure against various types of risk 100 %, support in the assessment of recipients' financial liability (90.2 %), tradition within establishing the

insurance agreements (76.5 %), less often the requirements of other market participants (7.8 %) and the law regulations (5.9 %).

The source of information on merchant credit insurance does not necessarily have to be insurance companies and their surroundings understood as different types of brokers. Paradoxically, the respondents may be contractors who, through specific requirements, influence the growth of insurance awareness and thus create demand for specific products offered by insurers. The main source of information is the insurance brokers' offer – 66.7 %, the insurance companies themselves – 51 % and the information available on the market 47.1 %.

The most important factors influencing the quality of protection in the opinion of the respondents are: the reality of the protection provided, timely and correct settlement of losses, the level of financial coverage of losses, the speed of payment of compensation (the above may be a surprise, taking into account the specificity of credit insurance and compensation periods often exceeding 180 days from the date of notification damages). In the analyzed case, counseling on credit risk management and debt collection is of particular importance in all types of insurance. The scope of the offer is for companies to support their activity in the field of control. The insurer is not limited to making an insurance decision. Through additional services, he monitors the situation of creditors and warns them about their uncertain or threatened financial situation before signing a contract, thus warning them before contracting.

The surveyed group of respondents was asked whether in the past there were situations when the lack of trade credit insurance could disrupt the functioning of the company. The answer was not universal, although it could not be marginalized. The most common reasons for the disruption were the bankruptcy of the debtor and the loss of the contract. Failure to pay the invoice without other conditions that make it impossible to make a payment is a major concern for small businesses, although it affects all parties to a large extent regardless of their size. This phenomenon in the opinion of the representatives of the investigated entities in many cases negatively affect their functioning.

Examining the effectiveness of insurance coverage, if it is to be effective, should be carried out from the policyholder's point of view, i.e. from the one who directly sees the effectiveness of insurance coverage at the time of the insurance accident. The most important issue for him is obtaining full compensation[13] (in the case of commercial credit insurance, the amount of compensation paid is reduced by the obligatory contribution of the insured person) and the certainty that in the event of a particular accident, the compensation is fully real.

However, serious difficulties may arise when trying to express the effects that an entity achieves through the use of insurer's credit insurance services. The proposal for recognition as a result of the insurance business of the indemnity paid does not seem to be right. In addition, the insured's knowledge of the insurance company's readiness to cover losses, which at any moment can be translated into specific amounts resulting from lost receivables, should be recognized as an effect. This intangible effect cannot be expressed in terms of value. Similar problems are encountered by the surveyed entrepreneurs, despite the fact that they have concluded a receivables insurance policy, but they have problems with the exact size of the insured turnover and the final amount of premiums.

Conclusions

The previous reflections seem to lead to the conclusion that any study of efficacy should only refer to those human activities that are embodied in material goods, but in terms of services, including insurance, and in particular trade credit insurance, about testing their quality. Thus, the impact of insurance coverage on the effectiveness of the economy is determined by the quality of this protection, and thus the quality of the insurance services provided and the insurance coverage, i.e. the assessment of the entities with which the cooperation is conducted, assistance in debt collection or psychological effects. The number of claims depends on the economic situation, so it is not unusual that the amount of compensation paid

[13] H. Poleszak, Pojęcie efektywności ochrony ubezpieczeniowej i metody jej oceny, Studia Ubezpieczeniowe, vol.VI, Warszawa-Poznań 1982, p. 59.

in two consecutive years may vary widely and the amount of compensation paid differs from the amount of the loss, because insurers know that it will be difficult for them to recoup insurance to recover the entire payment arrears[14]. The final assessment of merchant credit insurance, taking into account all factors affecting its effectiveness, can only be made by reference to the interest of the individual undertakings, which may be the subject of separate considerations. The economic cost-effectiveness of the insurance determines the result of the ratio of costs incurred to insurance against the effects of the insurer's activity in the newly created receivables structure, while taking into account the costs incurred so far.

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12. *Wyżycki M., Pałczyński D., Źródła informacji dla oceny ryzyka kredytowego, [w:] Ryzyko kredytowe – wierzytelności hipoteczne. Modelowanie i zarządzanie, red. K. Jajuga, Z. Krysiak, Związek Banków Polskich, Warszawa 2004.*

[14] International Financial Consulting, *Study on short – term trade finance and credit insurance In European Union*, Publications Office of European Union, pp. 5-7.

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RATIONALITY IN DECISION-MAKING WITHIN INTER-ORGANISATIONAL NETWORKS

Abstract. A networking structure is a natural phase in the evolution of organisational forms. An organisational form of a network is a set of interconnected structures and technological elements, i.e. individual economic agents, cultural and social values that arrange inter-organisational relations in a certain order and make network processes operate in a system-like fashion. Effective joint work in inter-organisational networks suggests a need for a common goal, which is perceived to be a critical factor for joint activities.

The paper studies the rationality of decision-making for inter-organisational networks. The analysis of behaviour within inter-organisational networks that consist of agents, like firms, entrepreneurs, governmental authorities, scientific centres, proves that group decisions are not always an optimal method to achieve a goal. There are certain tasks and circumstances when an authoritarian approach to problem solving is more sensible. It analyses a formalized model for joint choice, prevailing practice and rationality of group decision-making in order to reach a strategic balance within a network. The study summarizes key advantages and drawbacks in case a decision is made by a group.

Keywords: inter-organisational networks, rationality, decision-making procedures, strategic balance, cooperative game, coalition.

Problem definition

Current organisational development presents numerous challenges; and a major one is how to change an organisational structure of companies and transform them into networking unions that can secure effective innovative cooperation. A networking structure is a natural phase in the evolution of organisational forms. When traditional market relations between companies or a hierarchy that occurs as a result of an integration of a few firms under single management turns out to be inefficient, they can be reshaped into a hybrid organisational structure, i.e. a network.

The following factors catalyse the development of networking structures:

- aggravated competition and its upscaling to the global level
- complicated industrial and commercial activities
- highly unpredictable external environment
- elevated importance of information as a resource
- increased value of a time factor, and
- a wide range of product and service offers with their lifecycle being shortened, and innovation pace accelerated.

An organisational form of a network is a set of interconnected structures and technological elements, i.e. individual economic agents, cultural and social values that arrange inter-organisational relations in a certain order and make network processes operate in a system-

like fashion. In order to establish and develop an inter-organisational network the following key conditions are required:

- a number of companies that already interact or can potentially interact in a system of a single business process, and can get united with a view to a potential growth trend in a define market segment
- companies that have common technological features and specialize in certain products or technologies that demonstrate the signs of potential innovative development
- connections with scientific and research centres that have achieved highly entrepreneurial culture, importance and recognition within a scientific environment
- well-developed infrastructure that supports the work of innovative and industrial complexes, and
- national economic policies that encourage networking and clusterization of economy.

Relevance of the problem

The studies of inter-organisational networks reveal many blind spots; in particular, how network agents make decisions while being part of a group. Traditional economic theory does not consider an impact of a type of a decision-making subject on decision content. Only recently, some studies into this issue have been undertaken, i.e. whether a subject that makes a decision is an individual or a group. While analysing the difference between the aspirations for the expected equilibrium felt by individuals and a group, we find ourselves in an understudied area of economics.

Group decisions can be correctly explained neither by merely summing individual variants of a choice in the course of decision making even with a view to a network structure and its strategic goals, nor by a theory of group decision-making used in psychology [1]. A greater number of scientists are striving to learn a difference in behaviour of a group and single individuals, if any, and they apply instruments of experimental economy while analysing the behaviour of individuals and groups in the controlled laboratory environment [2–4].

Setting goals and objectives

The task of this paper is to identify the rationality of joint decisions within inter-organisational networks. The study is based on the postulate of individualism, according to which group decisions are generated as a result of certain rules of a choice. The methodology should be based on constructive and cognitive approaches to a decision-making system. The first approach stimulates creativity and mental activity, while the cognitive one encourages a quest for universal and multilateral links between various aspects of a decision-making process.

Main material presentation

Let us consider a formalized model of a joint choice and approaches to its analysis and solutions. Imagine, there is a network consisting of a N-number of agents, $N = \{I_1, I_2, ..., I_n\}$. A problem occurs, when the network runs into a set of objects, like projects, plans, orders etc., and it has to make a choice and select one or a few objects. Here, the objects creating an set $A = \{a_1, a_2, ..., a_m\}$ are called alternatives. The task is limited to selecting a single element from an A set, and when a single element is chosen, a problem of a decision-making is solved.

Before the network proceeds with the decision-making, its agents have to examine specific features of every alternative and make their own evaluations. And every network agent builds their own attitude towards alternatives in terms their attractiveness. It is irrelevant, whether an agent is led by subjective reflections, considers an alternative's objective characteristics or adopts a boundary strategy. Based on alternative evaluations and using a certain rule, the network proceeds with selecting a single alternative. The rule used in decision-making is known as a function of a joint choice, a voting procedure, an arbitration scheme etc.

The quality of a group decision-making depends on a few key factors:

- firstly, a task that should be solved
- secondly, a composition of a network
- thirdly, a decision-making procedure (formal or informal).

It is the fact that a hierarchical organisation (well-organised, formalised) is far better in solving structured and define tasks, and is quite poor in dealing with undefined and stochastic jobs. Hence,

a network is likely to demonstrate the opposite, as it does not have any hierarchy.

In management, the most popular rules or procedures for group decision-making are the following:

- Consensus or a rule of unanimity, when all group members agree upon a selected alternative. High costs of unanimous decision-making, when any individual has a right to veto, limit a wide application of this method. In practice, a rule of simple majority is mostly employed. However, it can lead to intransitivity of advantages, which is one of the postulates of rational behaviour. In order to eliminate the intransitivity of advantages, it is necessary to set limits that substantially change the procedure of joint decision-making.
- The rule of simple majority is a procedure when a group choice coincides with a choice of at least [n/2+1] group members. While knowing individual preferences of all pairs of a_i and a_k in an A set, it is quite easy to identify a group choice: the alternative selected by the majority is in the first place, and the second place is taken by the alternative selected by the rest of the group.
- The rule of a qualified majority is more rational, and implies that the higher the interest of a group member in a certain group decision, the higher the value of a rule of an individual veto.
- When making decisions in a group, international organisations and joint-stock companies often use a rule of weighted majority, when a country-member or a stockholder has a certain number of votes depending upon a size of their contribution or a number of shares they own. However, under these circumstances, an opinion of minority is ignored.
- A principle of dictatorship is a rule when a group decision is a decision of one of its members; the thoughts of other group members are ignored; and it is applied in a force majeure event [5].
- A summation strategy considers an opinion of all group member, and it is widely practiced. According to this strategy, the alternative that gains a higher (or lower) rank in comparison to a define benchmark is considered to be preferable.

Group decision-making rationality implies a state of a strategic balance. In the Nash equilibrium, the theory of economics decides on an optimal strategy regardless of a decision-making subject. However, when decision-making subjects behave in the way that differs from the one defined by an equilibrium, their behaviour becomes more important for making decisions. The Nash equilibrium correctly describes the stability of contracts implemented by the members of a strategic coalition. It is rightfully criticized, as in order to reach it as a result of a game, all players should choose one and the same equilibrium strategy, even in case there is more than one equilibrium strategies (stationary level).

There are quite a few detailed explanations of the rationality of using equilibrium situations. For example, a reflexive behaviour of a group can result in making decision in favour of an equilibrium situation. Another benefit of the Nash equilibrium is the creation of a 'centre', an advisory body that theoretically provides recommendations for players. At the same time, if a player, on his own, deviates from the suggested recommendations, he cannot win. Hence, it makes sense for him to follow what is recommended by the centre. However, this approach somehow contradicts the principle of a non-coalition game, as the 'centre' formed by all players, in its essence, represents an information coalition.

Pareto optimality is the most widely accepted principle of rationality used in the theory of games. This principle is opposite to the Nash equilibrium which is the pinnacle of a player's individual behaviour. After Pareto, efficiency is measured by the level of cooperation. Pareto says, in order to reach an optimum situation it is often necessary to exchange information between agents, coordinate their actions or even compensate some players for performing certain activities. Theoretical game models that consider such interactions are the subject of the theory of cooperative games. Their core idea is to stop analysing the process of negotiations as such, but analyse its results and make conclusions on how well the results of negotiations are implemented, how stable they are, as well as how stable coalitions of players are. Hence, the elements of a formalized conflict are not the actions of its players, but the outcomes that can be secured by such a coalition.

A classical cooperative game is a mathematical model of an economic situation that anticipates certain agreements upon common strategic behaviour. When interacting, participants of an inter-organisational network receive commensurable gains that can be soon re-distributed among agents. The game also implies that individual wins are scalable, so that the result's usefulness is transferable for any pair of members.

A coalition based on the Stackelberg equilibrium is stable, as cooperation facilitates information exchange, therefore a behavioural asymmetry is evened. Coalition after Nash is unstable, because an equal weight of its agents entails an equally high level of information asymmetry that cannot be normalized in a short-term period. When information exchange is ceased, the equilibrium is ruined, and as a result, the probability of expected gains in the course of inter-organisational interactions in the equilibrium, changes.

Obtaining information from a reliable source or a mediator, information price and an ability of each agent to make a decision on the basis of such information pose yet another challenge. Modern economic science is unable to offer a method of mass data evaluation that could provide a decisive answer how an agent of an inter-organisational network should behave, in case an information price set by a mediator is very high, or most likely, information asymmetry is high, i.e. information limitations, strong lobby, tough bureaucracy etc.

After Nash and Stackelberg the level of information perception is different, and this makes an impact on the relations among network agents. For example, the value of external information for a Stackelberg network agent is always lower than for a Nash coalition member. In the first case, a leader has an opportunity to influence without a support from his followers; and in the second case, a need to keep the balance of interests makes it impossible for a network member to change his tactics unilaterally.

Effective joint work in MoMax suggests a need for a common goal, which is perceived to be a critical factor for joint activities. In the course of the cooperation, a network should develop and make agreed decisions. Natural limits of human capacities to process and store information are one of the reasons in favour of group decisions: these limits influence human behaviour and are a source of numerous inconsistencies, contradictions, 'traps' and constraints in decision-making.

Therefore, decision making within a group is more effective, because such decisions are more rational and less subjective. Discussions among agents can thoroughly consider various alternatives and eliminate unfavourable options. A group is more successful when dealing with difficult tasks than individuals due to an objective division of labour depending upon various skills and abilities of network agents. A group can do better situation analysis and offer better solutions, as it has more information and knowledge and makes less mistakes when processing data. The participation of a group in making a decision and then its implementing could substantially increase its efficiency, as such an approach creates a desired effect of involvement, and we can talk about integrated work of individual network agents who gain valuable skills for the future.

While demonstrating clear advantages, group decisions could have a good number of drawbacks; in particular, a group spends more time on making a decision than an individual. The time increases, as it is necessary to prepare a network for joint work, establish and maintain contacts among its agents, agree opinions and summarize results.

A group can sometimes make decisions that do not agree with the goals of a higher organisational level. Insufficient knowledge of network strategic goals, personal motives and contradicting interests of some agents who delegate their candidate to make a joint decision are just a few reasons for such a disagreement.

A typical situation is when a decision made at a higher level, without other company members, faces opposition. It is difficult to deviate from a tradition of group decision making. At the same time, in case decisions are used to be made unilaterally, any attempt to have organisational members participating in decision-making will be likely unwelcome and suspicious.

A problem risk level is one of the core difficulties related to group decisions. As most of the studies show, a group risk is higher than a risk of a decision made by an individual [7]. A risk escalation in case of group decisions is called a risk shift. As Kozeletsky Yu. stated [6], risk shifting

came out as a surprise. Everyday observations look like testifying to the opposite; group decisions are more cautious. However, numerous data, from the area of psychology in particular, prove that a human being that works within a group, is ready to make decisions with a higher risk level. There are a few hypotheses that try to explain the reasons for risk shifting in a group, like a shared responsibility for the results among group members, a desire to follow a leader's choice, and unwillingness to appear more cautious than the other etc.

'Group thinking' is another peculiarity of group decision making. This is a style of thinking for people who are fully involved in a single group and in this group an aspiration for unanimity is far more important than a realistic evaluation of potential variant [7]. For these people, it is crucially important to maintain a unity of a group and a friendly environment, to satisfy interests of group members, as well as one's own interests. These impede rational analysis of a situation and decrease the quality of decision-making. Subsequently, it creates a negative attitude about a possibility of another opinion, i.e. if any group member doubts a decision; he is blamed for being non loyal. A group spontaneously produces people who become watch guards and monitor information inflow that could challenge the authority of a group and decisions it makes.

In general, 'group thinking' is characterized by conformism, biased information selection, unjustified optimism, and confidence that a group has all advantages to cope with complex economic and political problems. Psychological studies demonstrate, the stronger the dependency of a group on its leader and the stronger the status of the people that make such a decision in a group (coalition), the higher the risk of 'group thinking'.

'Mistaken agreement' and 'virtual leader' are among other drawbacks of group decisions. The first phenomenon means that because of low competence of certain group members, the weakness of their personal status or unwillingness to put some efforts and improve their knowledge and competencies, they find themselves in some sort of vacuum. They do not participate in group discussions, but clearly emphasize that they entirely agree with an option of a leader or that of a majority, and this is not based on logical arguments, or moreover, could conflict with their individual preferences. It is important to note, group decision making could also trigger a reverse behavioural pattern, i.e. a desire to 'get noticed' and accentuate one's role in a process. This generates another phenomenon known as *'demonstrative disagreement'* [7].

'Virtual leader' phenomenon is less known though being well studied and explained. This is a subject who does not really exist in a group, but as a meaningful part of a group thinks, should *'soon appear and solve a problem'* [7]. On the whole, this phenomenon is negative, and the only positive moment is that while waiting for a 'virtual leader', in some cases, a group can be very scrupulous in preparing and explaining its choices.

It is worth mentioning one more group phenomenon called *'deliberate conflict expansion'*, which is quite often employed by managers [7]. Its task is to aggravate tensions within a group intentionally so that at final stages of decision-making, the key role is not for sensible and meaningful arguments, but for emotional and interpersonal factors. Hence, apparent incompetence of some group members who are most interested in this situation, is shrewdly masked.

Conclusions

The analysis of behaviour within inter-organisational networks that consist of agents, like firms, entrepreneurs, governmental authorities, scientific centres, proves that group decisions are not always an optimal method to achieve a goal. There are certain tasks and circumstances when an authoritarian approach to problem solving is more sensible. It is quite typical when a manager or an expert has far greater knowledge about a situation than the rest of network agents. Decisions made collectively are not always better than those made individually. However, the latest studies confirm that a group decision is more effective in comparison with individual in case it relates to tasks that are not formalized, as well as to problems that require a high level of expertise.

Comparison of individual and group decisions is far understudied, particularly when considering time for making a decision, strategic value of a decision, availability and accessibility of

mass data, psychological and emotional linkages with a network etc.

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IMPORTANCE OF E-COMMERCE IN THE DEVELOPMENT OF ECONOMY AND BUSINESS

Abstract. The article investigates the tendencies of a global e-commerce market and its legislative regulation. The value of e-commerce for domestic businesses as well as the main advantages of electronic commerce over the traditional one is shown. The features of e-commerce implementation in Ukraine are determined.

Keywords: e-commerce, e-commerce market, economy, Internet-technologies, business.

Formulation of the problem. A rapid development of Internet technologies influences greatly all areas of economic activity today. This happens not only due to the fact that advertising in Internet is one of the most affordable methods of communication with customers that is characterized by the best perception rate. The growing number of Internet users contributes to the emergence of new channels for the distribution of goods, services and information. A swift growth of Internet technologies prompts the development of new institutions such as e-commerce. Until recently this concept was quite disputable and critically evaluated in the domestic economic science because it had no legal basis. Nowadays the situation changed and e-commerce is one of the possible instruments that may be used to stimulate the development of small and medium-sized businesses in Ukraine.

Analysis of recent researches and publications. Over the last two years the researches of e-commerce became very important due to the adoption of the legislative regulation of this type of business activity. Each year many international analytic companies investigate a global e-commerce market and present their annual reports. Unfortunately, we have a limited number of similar researches of domestic e-commerce market. In addition, many foreign researchers, including A. Becker [1], describe the methodology and tools of e-commerce. There are several scientists in Ukraine that explore the significance and features of e-commerce. Let's note L. Jancheva [2] and V. Pleskach [3] among them.

The objective is to study the importance of e-commerce both for the development of the global economy and businesses in Ukraine.

Presentation of basic material of research. According to E-commerce Foundation, 2520 million people worldwide use Internet. It accounts for 45 % of the Earth's population over the age of 15.1436 million of them perform purchases in online stores [4]. The global e-commerce market estimated at $22.1 trillion. China is responsible for the largest share of this market, being followed by the United States and Japan [5].

The USA was on the first place in terms of the total commodity turnover provided by e-commerce (Table 1). China, however, is the closest rival with the total number of online customers surpassing the USA by almost 2.5 times.

Table 1

Commodity turnover provided by e-commerce in 2016, according to the countries with the largest number of buyers [5]

Country	Buyers (million)	Annual spend by buyer ($)	Annual B2C Sales ($ billion)	Annual B2B Sales ($ billion)	Annual total sales ($ billion)
China	413	1508	623	2078	2701
USA	166	3072	511	6072	6583
Japan	57	1994	114	2380	2494
Germany	41	120	2	966	968
UK	38	4539	174	709	883
Brazil	33	376	12	112	124
Russia	30	756	23	700	723

The significance of e-commerce increases in the total output of countries. In particular, e-commerce accounts for almost 8 % of the GDP in the European countries. At the same time, Great Britain, China and France are the countries whose economies depend on e-commerce (Fig. 1). E-commerce in the USA accounts for 2.3 % of the country's GDP [5].

When it comes to Ukraine, statistics data claim that 21.9 million people (58 %) in 2016 were Internet users, of which 3.7 million (10 %) were buyers in online stores. In 2016, sales of goods and services through online stores amounted to UAH 1429 million [6]. The GDP of Ukraine amounted to UAH 2 383 182 million in 2016 and the share of e-commerce in it was only 0.06 % [7].

Despite the fact that many Ukrainians are already very confident users of the Internet as well as experienced online stores buyers, the domestic e-commerce market is only at its early growth stage. This fact is confirmed by a rapid growth of electronic sales volumes (35 % per year), that is typical for the initial stages of the industry's life cycle.

The main driving force behind the development of this industry is its legal regulation. Let's review how it happened in developed countries.

The activity of e-commerce companies in developed countries, the United States in particular, has been regulated since 1996. UNCITRAL Model Law on Electronic Commerce became an example for the development of many national e-commerce legislations. This law defines a conceptual apparatus and regulates the issues of legal force in data transmission as well as electronic signature contracts, issues of document circulation and many other matters.

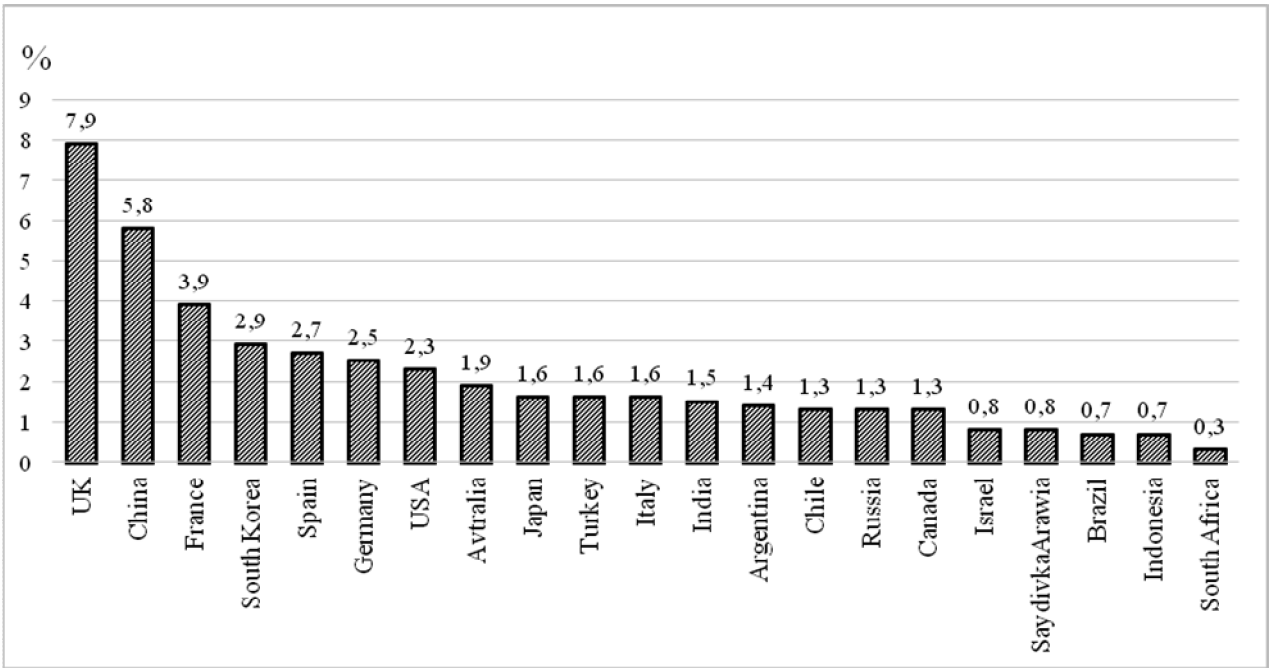

Fig. 1. Share of e-commerce in GDP in 2016, % [5].

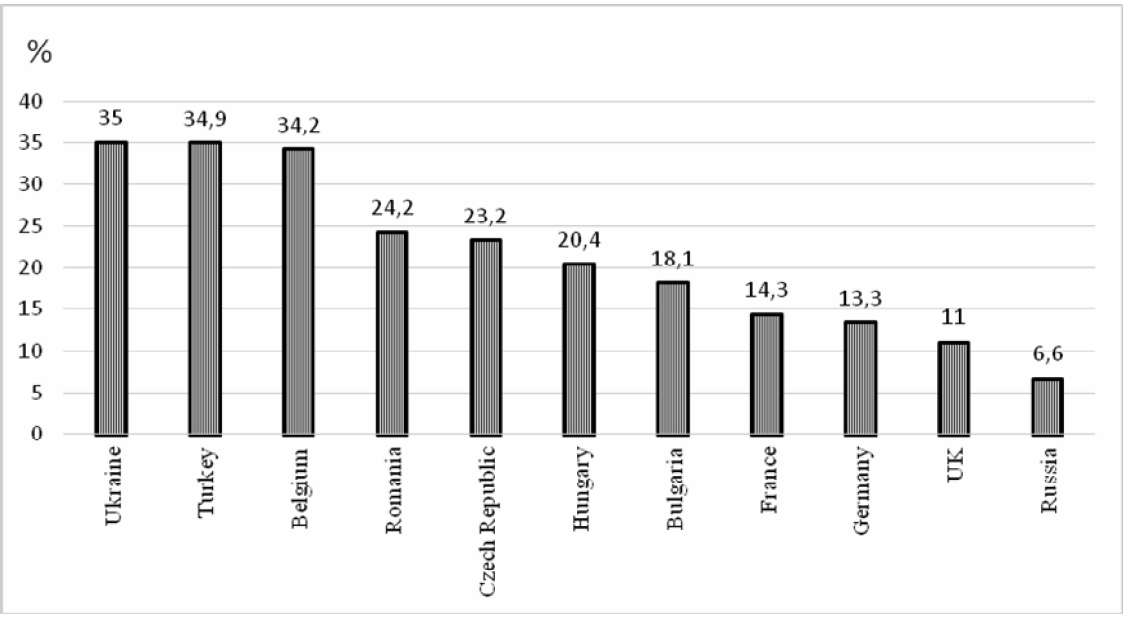

Fig. 2. Annual growth of electronic sales volumes in 2016, % [6].

A "golden period" of e-commerce started with the introduction of this law in the United States and lasted from 1995 to 1999. Amazon, a well-known online books store, started operating at that time and shortly after its legalization became a multimillionaire. Inspired by the success of this company, eBay, another project, was launched and in 1997 the first commercial domain *.com* appeared. E-commerce enjoyed the highest pace of growth in the economic history. Businessmen, investors and consumers felt incredibly enthusiastic about this period of industry's growth that brought the small and medium businesses to a new level.

By 1999, an overwhelming majority of companies realized that electronic pages were a necessary instrument in boosting their sales. Due to this, the income from e-commerce performed by American companies amounted to $707 million in 1996. The indicator skyrocketed to 2.6 billion just in a year and already in 1998 the revenue from e-commerce in the USA amounted to $5.8 billion [1].

The United States enjoy a constant growth of retail trade turnover for 15th year at a row starting from 2002 (Fig. 3). Even the world's financial crisis that hit badly many industries hasn't influenced e-commerce much. The e-commerce industry not only preserved its positions during 2008–2009 but confidently demonstrated a substantial surplus in 2009.

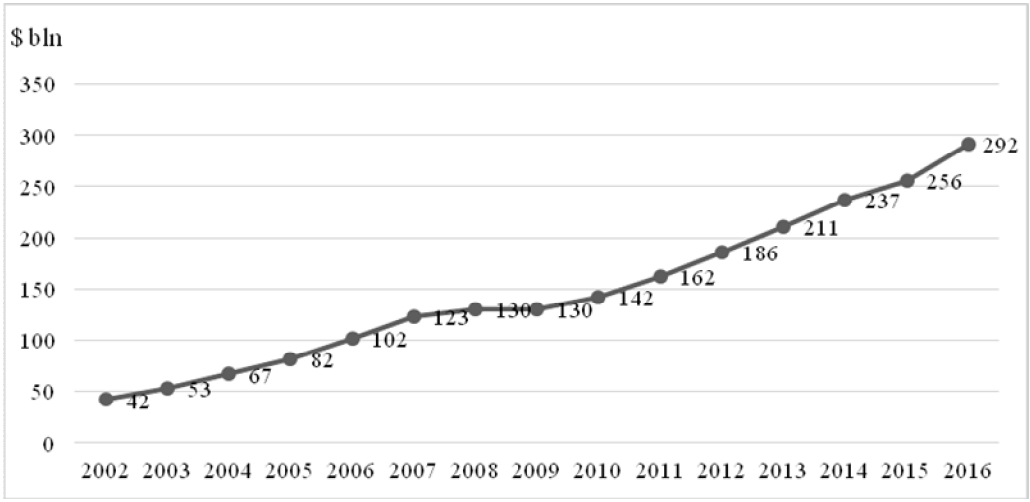

Fig. 3. Commodity turnover provided by B2C e-commerce in the USA, $billion [5].

The activity of enterprises engaged in e-commerce in the EU countries is regulated by the EU Directive on e-commerce of June 8, 2000 [1].

Only in 2004 another EU Directive on the rules and taxation of Internet commerce was introduced. Electronic sales in Europe are growing at a rapid pace until now, especially in the southern countries. The turnover from retail e-commerce in EU countries is expected at EUR 602 billion in 2017. In 2016, the trade turnover amounted to EUR 530 billion [6].

According to the recent research performed by Frost & Sullivan, Alibaba Group (Hangzhou, China) is the absolute leader on the e-commerce market. The Group manages the following subsidiaries:

- Alibaba.com – a public joint stock company, whose shares are freely rotated in the stock market; the main activity is electronic commerce aimed at wholesale buyers;
- Taobao.com – an e-commerce model targeted at a retailer and running in two modes: shop and auction;
- Alipay – a platform for making online payments;
- Alisoft – development and sales of e-commerce software;
- Yahoo Koubei – a directory of enterprises in China, divided by regions and areas of activity.

Alibaba Group is not the only Chinese company that generates a large cash flow from e-commerce. While the main players on the US e-commerce market are eBay, Facebook, Amazon, PayPal and Google, China can boast of such companies as Baidu, Alibaba and Tencent, more known under the abbreviation BAT. However, these companies cannot be compared to one another, because each of them uses its own technologies, platforms and the unique sales approaches. Presently, the value of the product market provided by Alibaba alone is $27.28 billion accounting for 11 % of the total e-commerce market. This dominant market position will provide the proposed products value of about $6.7 trillion by 2020. Such trend makes B2B segment twice as large as the B2C segment (an expected market volume will amount to $3.2 trillion by 2020). Alibaba has achieved such crazy success during 11 years of its existence primarily due to its focus on B2B pattern. This company is a pioneer in doing such sort of business.

E-commerce is a new type of activity for the Ukrainian economy. Cabinet of Ministers of Ukraine issued an action plan on August 23, 2016 regulating the economic activity of enterprises operating on the e-commerce market. This document envisages the adoption of legal acts aimed at the regulation of electronic agreements, electronic money transactions, electronic document circulation, etc.

E-commerce is actively growing for about 20 years in Ukraine. Despite this, the Law of Ukraine "On e-commerce" [10], a legislative document that regulates the activity of e-commerce companies, was issued only in 2015. The document designates e-commerce as relationships that are aimed at making profit and take place remotely involving the use of information and telecommunication systems. These relations have all general characteristics of a commercial activity but there is, however, one substantial difference, namely, the agreements are concluded remotely by means of Internet. Similarly, if such relationships are carried out by means of other types of information and telecommunication relations, they will also have the signs of e-commerce.

Table 2

E-commerce types in terms of relationships between participants in 2016

Connections	Consumer	Business
Consumer	**C2C** Consumer-to-consumer	**C2B** Consumer-to-business
Business	**B2C** Business-to-consumer	**B2B** Business-to-business
Government	–	**G2B** Government-to-business

Existing types of e-commerce have slightly different features compared to the traditional commerce. Five patterns of goods, services and information trading may be outlined:

- C2C – a type of e-commerce formed by consumers with the participation of intermediaries;

- C2B – a type of e-commerce, when consumers create demand for goods or services and producers provide them;
- B2B – e-commerce oriented on business-to-business relationships; it is the organization of wholesale purchases of goods, works or services;
- B2C – e-commerce focused on retail distribution of goods and services;
- G2B – e-commerce implying the state buying services from commercial enterprises [1].

Another rapidly growing form of commerce is a mobile commerce that is carried out wirelessly.

When it comes to the domestic e-commerce market, the G2B segment in Ukraine is the most successful one. According to the statistic data, the total amount of concluded agreements via Prozorro website estimated at UAH 163.3 billion in 2016. This project will certainly develop in the nearest future that allows attract more users to search for available orders through this system [9].

Table 3

Commodity turnover of Ukraine's e-commerce in G2B sector during 2015–2016

Procurement procedure	Period (year)	Cost indicators			
		UAH million	USD million	EUR million	RUB million
Open bidding	2015	101 620.70	49.96	115.215	0
	2016	115 796.1	15.99	36.08	1.19
Two-stage bidding	2015	24.188	0	0	0
	2016	537.35	0	0	0
Negotiable Procurement Procedure	2015	76 802.59	314.21	26.96	0
	2016	44 477.7	9.53	5.9	0
Request for price offers	2015	1012.53	0	0	0
	2016	1064.71	0.002	0	0
Prequalification of participants	2015	1022.47	0	0	0
	2016	1380.17	0	0	0
Total	2015	180 482.48	364.17	142.18	0
	2016	163 256.03	25.522	41.98	1.19

This particular area of e-commerce in Ukraine has its own peculiarities. Prior to the adoption of the law on public procurements through the Prozorro system, B2B e-commerce was not widely used in Ukraine. As a rule, sellers and wholesalers found each other on several websites that were mainly developed by the Russian specialists. With the advent of legislation that obliged public procurements to be made through the Prozorro system, the B2B segment became literally crowded out by the G2B segment. The B2B segment is now presented by the website Wishround.com.ua and is a “Many-for-many” model based on the creation of customer associations aimed at a direct collaboration with the product manufacturers.

C2C segment is represented by Prom.ua, Bigl.ua, Crafta.ua, Kabanchik.ua, Goodini.ua, which sold goods and services for UAH 8.5 billion in 2016. At the same time, the sales growth rate is 73 % per year. The average check is UAH 885 and it grew by 7 % at the end of the year. The most popular goods on the websites of the C2C segment are clothing and footwear, household and garden goods, cosmetic products, appliances and gifts. However, the category of ordering food and tools is also growing rapidly.

B2C segment is represented by such well-known online stores as Rozetka, Modnakasta and LeBoutique. Financial results of these companies are not in a public access but the statistics on the attendance of their websites is available. Let’s review it in more detail.

The table 4 shows that the main e-commerce player in the B2C sector is Rosetka online store visited by 23.600,000 people per month. According to the statistics of 2017, almost 40 % of all domestic Internet users are the visitors, and

therefore, the potential buyers of this platform. About 75 % of users make purchases by means of their smartphones in 2017.

Table 4

The most visited Ukrainian online stores in 2016 [8]

№	Seller	Number of visitors per month
1	Rozetka	23 600 000
2	Allo	3 500 000
3	Modnakasta	2 800 000
4	Comfy	2 600 000
5	F.ua	2 400 000
6	Mobilluck	2 400 000
7	Leboutique	2 300 000
8	Citrus	2 200 000
9	Lamoda	2 100 000
10	Eldorado	1 800 000

A large segment of the e-commerce market is also occupied by services provided via Internet. These include legal services, accounting services, tax consultancy services as well as various information services in all areas of human activity. Providing such services via Internet allows reduce the unemployment level as well as increase the clients base of a particular enterprise. However, much attention should be paid to the legal regulation of e-commerce business in service providing area. If any organization, company or business owner has its own website where the services are simply listed, it's just a source of information and such activity has nothing to do with the Internet commerce. A main feature of e-commerce is the signing of the offer in a variety of ways, which may include filling in the order form, adding goods to the basket, filling in a feedback form in which the initiative to buy a product or service is indicated. If the website doesn't provide the abovementioned opportunities, it is merely one of the means of traditional business advertising.

As a whole, the Ukrainian economy is based on small and medium business which fact is confirmed by the GDP indicators. In 2016, statistics data showed that small enterprises generated 20 % of GDP while medium ones accounted for about 43 % [8].

Table 5

The structure of business activity results in terms of their value, in 2016 [9]

Company size	Quantity	Sales (UAH, million)	Financial result before taxation (UAH, million)
Large-size	382	2 387 762,8	60 870,2
Middle-size	14 869	2 602 415,8	33 203,9
Small	291 118	1 224 550,8	-24 859,7
Total	306 369	6 214 729,4	69 214,4

As a rule, the large enterprises in Ukraine occupy monopolistic or oligopolistic positions in their industries, thus preventing small businesses from entering their markets. At the same time, e-commerce creates new opportunities for the development of small and medium-sized businesses because of its vast geographical coverage that is literally unlimited. In addition, it's financially affordable for any small business or entrepreneur to reach leading positions selling products via Internet. That's why e-commerce creates equal opportunities for all market players enabling the products of a better quality to win the competitive struggle and enjoy more demand at a more affordable price.

E-commerce for business is another additional marketing instrument that, if properly applied, may become the main one. The number of purchases through online stores is constantly growing in Ukraine. Leading positions are occupied by the stores selling household appliances and clothing. The distinguishing feature of market leaders is that they work via Internet only. Such pattern of activity provides them with a number of benefits.

The Fig. 4 shows, that the main benefit of e-commerce is its comfort for the customer: first, online shops serve their customers 24 h/7 days a week creating a steady inflow of clients that cannot be achieved in terms of traditional trading.

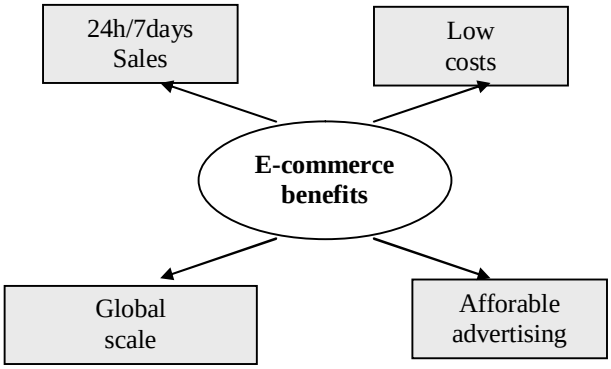

Fig. 4. Benefits of e-commerce activity.

Second, the business doesn't bear a burden of serving staff costs.

Third, the absence of a physical shop reduces the maintenance costs. It's enough to store goods in the warehouse.

Fourth, online advertising is more affordable than traditional advertising options. Additionally, the providers of effective e-commerce advertising usually have a direct access to the customers who are really interested in their products. This is achieved using the search engines that collect data about the interests and preferences of consumers and offer relevant products.

Apart from the benefits to the company itself, e-commerce offers a range of benefits both to the users and a society in a whole. First of all, all the purchases of goods, works and services are carried out in an anonymous format for users. With the help of specialized websites, users may find even the most specific products and services that are unavailable in the offices and the ordinary stores. All sales have personalized features, meaning they are focused on providing services or selling a product that you really need. E-commerce enables consumers to buy cheaper products. The ability to purchase goods or services through online stores is of great importance in the electronic socialization of society.

The society enjoys a number of advantages too. In particular, it is provided by a wide range of services. The availability of affordable goods and services enhances living standards as well as the national security. Speaking about the global environmental impact, online shopping reduces road traffic that exerts a positive influence on the environment.

Taking into account the fact that e-commerce makes it possible to bring services or products of the own production more easily into the global marketplace, it is also of great importance both for economic development and improving the level of self-employment of the population. Since the large industrial capacities in some regions of Ukraine are absent, the population tries to organize its employment independently. However, the only thing that does not allow realize it in a full scale is the difficulty in entering the market. It is the electronic commerce that promotes the economic potential of the country through the development of creative and entrepreneurial potential of its population that has an incentive to create new products and bring them to the world markets. In Ukraine, the market of hand-made goods is actively developing nowadays. This is the domestic production of food or non-food products that enjoy a high demand because of well-organized advertising campaigns through the Internet, in particular social networks. Social marketing allows offer the products and services to a more engaged audience which is easy to identify in social networks.

Presently, there are only several important aspects that can be considered as the disadvantages of e-commerce. A fraud is perhaps the most sensitive problem in this respect. It is difficult to eradicate it without a perfect system of state control over the implementation of e-commerce practices. As a rule, E-shops work, using payment systems like Interkassa, which practice high interest rates for payments. It's important to introduce at least 3–4 operators that will serve the market to make the market prices of interests more interesting for business. Due to the imperfections of legislative regulation of e-commerce activities and the lack of appropriate control over its implementation, an overwhelming majority of businesses in Ukraine belongs to a so-called shadow economy.

Conclusions and perspectives for further research. The study enables us to conclude that e-commerce has occupied an important place in the economies of the developed countries long ago, providing them with significant competitive advantages as well as new growth opportunities. It's hard to overestimate the value of e-commerce for leading global businesses. E-commerce has a tremendous potential that changes the traditional

principles of doing business and is able to create a solid foundation for the competitiveness of both the national economy and the individual company.

Though demonstrating a high growth pace, e-commerce technologies in Ukraine are now on the beginning of the difficult way of development. The leading world experience should be studied thoroughly and then implemented considering domestic economic reality. E-commerce allows small businesses to have their place on the market along with the big companies. The main advantage of e-commerce is that it can significantly reduce the enterprise's costs and offer an attractive price for goods and services. In addition, unlimited geographic coverage makes it possible to increase the volume of sales expanding on the global marketplace. The development of entrepreneurship in Ukraine owes itself much to the growth of e-commerce, since the produced goods and services can reach not only the domestic but the world market as well. Modern delivery systems allow operate in the global market effectively, which first of all contributes to the improvement of positive reputation of Ukrainian producers and promotes the development of the country's economy. Today, mostly due to the fact that domestic e-commerce does not rely on a perfect regulatory system yet, (especially because the control over the activities of e-commerce companies is absent), there is a certain percentage of fraud that is difficult to eliminate. An imperfect control system that should be abolished at the legislative level enables many online businesses to hide their incomes and avoid paying taxes to the budget. The development of e-commerce should be based primarily on a state support. The state should not only create a legislative framework, but also improve the electronic payment system of Ukraine and implement effective systems for monitoring the activities of e-commerce companies.

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FUNCTIONAL PURPOSE AND APPROACHES TO BUILDING ACCOUNT PLANS IN THE HISTORICAL RETROSPECTIVE

Abstract. The contents and function of the account plan in the organization of accounting, principles of systematization of classification groups of accounts in it are disclosed. The historical origins of the plan of accounts in accounting science and its evolution are presented. The key factors of influence on the principles and basic principles of constructing an account plan at different historical stages of accounting science are analyzed. The reasonableness of the scientific classification of accounts and disadvantages when forming accounts in the historical past has been analyzed. The expediency of conducting in-depth researches of previously formulated scientific developments concerning principles and approaches to the formation of the account plan and the use of their separate aspects in modern researches has been argued.

Key words: history of formation of the accounting, development of the accounting, classification, grouping, plan of accounts.

Formulation of the problem

In accordance with its purpose, the plan of accounts serves as the basis for accounting, and determines the order of accumulation of the systematized information required in the specific economic environment for internal and external users for making managerial decisions. The basis for constructing an invoicing plan in all historical periods was the circulation of economic resources and sources of their formation (capital) of the subject of economic activity. Formulated according to different principles and approaches, the plans of accounts had a significant impact on the evolution and development of certain areas of accounting science.

The content of the principles of building an account plan follows from the traditional functions of accounting information - to meet the information needs of different users, to provide the possibility of an objective compilation of defined forms of accounting in a particular historical period and for a particular economy. Setting and structuring accounts is an important aspect for the mutual reconciliation of the indicators of a separate enterprise with the method of information disclosure of general economic processes. Therefore, his substantiation on the agreed basis with the system of national accounts is important.

Modern methodical techniques for constructing a plan of accounts acquired in the process of historical development of the balance study, accounting theories and the development of existing systems of accounting for the present. That is why the scholars recognize that it is impossible to objectively disclose the current value of the chart of accounts to achieve the objectivity of the accounting data and the representation of the reliability of information about assets and capital in public financial reporting without analyzing the principles and approaches formulated in different historical periods for the construction of accounts plans.

The analysis of the latest research and publications shows a rather high interest of scholars in the historical achievements of the development of the Accounting Plan, approaches to its structuring and content. The importance of the selected principles, rational and scientifically-based construction of accounting in a systematic list (plan of accounting), as noted by Ya.V. Sokolov, is due to the fact that “accountancy is substantive in nature, which allows applying the methodology of accounting to any economy” [1, p. 382]. The significance of the research principles and basics used in the evolution of accounting science for the formation of the accounts for a specific economic

environment is related to the way in which A. N. Kuzminskyi stressed, that "in separate branches of the national economy on the basis of a single plan of accounts, taking into account the specifics of their activities, develop their accounts" [2, p. 171].

Scientists mostly hold the view on the importance of research into the evolution of the plan of accounts, the significance of their results for the current needs of adapting the accounting system and financial reporting to the conditions of the modern economy. In this context, N. V. Osadchuk notes that "the issue of creating, improving and implementing the plans of accounting in the world has long been paid close attention of scientists and specialists in order to ensure reliability and confidence in accounting, improving its management function, the introduction of an effective system of taxation on its basis" [3, p. 262]. The main accent of the significance of historical research of this element of the accounting method is the analysis of the principles and approaches to ordering accounts in it, their appointment in the accounting system and the methods of displaying information on them.

Proceeding from the above, and also similar conclusions in the publications on this direction, the authors, proving the relevance of research on the analysis of the evolution of the plan of accounts, its content and purpose, indicate that even today "the issue of rational construction of the Accounts plan is debatable and not fully studied" [4, p. 7]. In addition, K. P. Borymska notes that "the lack of a systematic approach to the consideration of directions for the development of an account plan" [5, p. 37]. Therefore, the conclusions of the overwhelming majority of studies and publications that reveal the evolution of the principles of building an account plan determine the need for an in-depth study of the principles of constructing multi-type account plans for the validity of this element of the accounting method in the modern development of the accounting system.

The purpose of the article is to consider and systematize the principles of constructing a plan of accounts at different stages of accounting knowledge, the development of individual scientific theories or paradigms, and the formulation of proposals on the feasibility of using certain principles and approaches for using contemporary developments of a bill adapted to real economic conditions.

Presentation of the main research material.

The emphasis of the development of an account plan is particularly relevant to the modern accounting practices of large corporations, the specifics of which requires the construction of an autonomous accounting system. It is the account plan that is the basic condition for the development of the accounting system for such entities. The doctrine of accounts and their consolidation into a specific format (plan) in modern accounting science is insufficiently in demand. Despite the theoretical significance of the accounts for the main concepts of accounting and balancing in modern accounting science, this aspect is pushed to the background.

Under the plan of accounts refers to their grouping by economic content, purpose and structure in a systematic list [6]. Problems of development and implementation in the conditions of functioning of modern enterprise accounts plans in order to develop the accounting system itself in modern science is still given considerable attention. This is due to the need to provide financial reporting with relevant indicators, the need to strengthen managerial functions based on the information formed on these accounts.

At the stage of the birth of accounting science was the decisive account and their double entry. In the future, there was a need to classify invoices with scientific justification of each class. Beginning the practice of using the plan of accounts was characterized by the fact that each accountant in his own enterprise independently formed the plan, so for several centuries, accountants could not even imagine that you can take a plan of accounts from another company and use it on its own [5]. In the field of internal organization of accounting, account plans created opportunities: to identify accounts with financial reporting items, ensuring the logic of its construction and the convenience of its compilation, to design model documents, forms of reporting, to disclose accounting terminology.

In the historical research of the evolution science of accounting it is believed that the founder of the accounts was E. Degrange, who in 1795 offered a single plan of accounts, bringing all accounts to five. Only small enterprises could satisfy the plan of accounts of this format. Therefore, the Belgian author A. Godefrua in 1864 proposed such a component of the organization of accounting by reducing all the accounts to six groups: 1) non-current assets;

2) expenses; 3) inventories; 4) settlements; 5) the owner's accounts (capital, reserves, profits or losses, etc.); 6) cash and securities.

The first classifications of accounts bind them with a substantive and binding law (without any other signs), then the classification was based on mixed features (legal, economic, structural). At the same time allocated capital accounts, values, third parties. They were further developed in the early twentieth century and influenced modern approaches. In addition, accounts were divided into active and passive, as well as to budget accounts (income and expenses). Subsequently, the development of this classification led to the allocation of classification groups of accounts: "inventory, costing, distributive, operating, transit" [7]. Important in this was the classification of accounts given by L. Pacioli, who once wrote: "The account – no more than an appropriate procedure, established by the merchant, with the successful application of which he receives information about all his affairs and whether they are successful". Synthesis of the views of Italian and French accountants leads to the construction of an account system, on the one hand, taking into account accounting objects for other management purposes. The chart of accounts should be based on the classification of accounts. A plan built outside of the classroom leads to a clutter of data, and as a consequence, before receiving unsystematic and non-effective information.

In different historical periods, the scientists contributed to the development of plan of accounts by various principles regarding: the balance sheet (O. Rudanovsky), the place of balance (I. Cher), the completeness of information (Zh. Savari, J. Cherboni, V. Paliy), a business entity (R. Delaport), mobility (E. Schmalenbach), economic content (M. Kiparisov, M. Leontiev), the conventionality of assessments and their relation to the objectives of economic analysis (Zh. B. Dumarshche) [8, p. 50].

By the beginning of the twentieth century, all the account plans were focused on the formation of accounting information for the purposes of financial reporting. Plans of this type did not take into account the process of capital turnover, as well as the mechanism for comparing income and expenditure. In 1927 professor at Kiel University E. Schmalenbach justified ways to overcome these shortcomings, a means to improve the plan, the necessity of the plan of accounts was not substantiated on the basis of which balance sheets are formed, but a document combining production and trade accounting [9].

E. Schmalenbach interconnected the capital turnover and the decimals principle, his plan was a matrix of 10 × 10, and each element of the matrix contained 10 accounts. Such a plan of accounts allowed to freely open up to 1000 accounts per enterprise. The basis of such a plan was the idea of achieving equality in enterprises in the organization of production and, above all, industrial accounting. The approach of E. Schmalenbach was inherent in monism – the traditional German association in a single system of production and trade accounting. The only billing plan consisted of ten classes, grouped by several features: turnover of accounts – K1 (including static, fixed accounts), monetary – K2 (dynamic, "external" for accounting cash, currency, checks, bills, calculations), costing K3 (dynamic , to ensure the accounting process – the calculation of cost, calculation of financial results.

In the construction of the accounts individually note the theory of the French scientist P. Garnier, according to which the classification of facts of economic activity determines the classification of accounts. The basis of the theory is that "the classification can be constructed either artificially, or to execute its description objectively in the given accounts, in the latter case it will be natural, in the same way as D. Mendeleev's table, and due to this, it will be possible to open those accounts which not yet known accounting". According to his theory, all accounts P. Garnier divided into two groups: balance accounts (assets – active and sources – passive) and management accounts (productive – costs and revenues of the enterprise).

It is important to classify accounts on the evolutionary grounds of M. Blatov [7, p. 286], according to which each subsequent group of accounts was considered as the development of the previous one. So, historically groups consist of the following accounts: inventory, personal; costing distributive operational; liquidation transit Each of their kind has a certain detail. Yes, "inventory accounts are opened by type of property or its custodians; personal – for reflection of settlements with any legal entities and individuals: debtors and creditors; costing – for the consistent accumulation

of expenses in the process of formation of assets; distributions take into account temporary amounts that are subject to distribution among other accounts; operational opens to reveal the results of one operation, separated from others or their groups; liquidation – for accounting and comparison of projected and actual costs or predicted and actually received profits; transit accounts – to distinguish from the general list of operations and records in one or another of their groups, which is not allocated during normal accounting" [10].

Now in the world practice, the most famous are the three main directions that are used when constructing bill plans:

– matrix-accounts are divided into classes and groups, which allocate subclasses, groups of accounts and accounts themselves;

– linear – provides a sequential description of the nomenclature of synthetic accounts, grouped (without the use of sub-accounts);

– hierarchical – provides a hierarchy of subaccounts.

In the countries of the Anglo-American accounting system and at present there is no single plan of accounts. Administration of companies from Great Britain, USA, Canada, Japan, Estonia, etc. themselves form the most appropriate plan for themselves. In individual countries (France, Germany, Russia, Ukraine, Portugal, Spain, Guinea-Bissau, etc.) there are uniform national plans of accounts used by all enterprises.

With the development of financial accounting, in 1960–1980 pp. Three regional accounts were created: the EU, the Organization of African Unity, and the Latin American states.

First determine accounting as a management function and an informational source of decision-making, including external users They are based on international and national standards, and also take into account the effect of legal laws. They have the following features in their baseline:

– developed in accordance with the 4th EU Directive, which establishes common standards and requirements for the countries of the community for each item of the balance sheet and profit and loss account;

– act as the basis for the creation of a regional accounting system of European states;

– take into account the requirements of the Commercial Code, which defines the list of mandatory reporting registers used by economic entities;

– are based on the norms and regulations of the tax codes regulating the methods of depreciation of fixed capital, the inventory of balance sheet items, the creation of reserves and the determination of taxable profits, etc.;

– comply with the legislation, which provides for the organization of accounting and control, depending on the form of ownership, types of enterprises and their sizes.

National accounts of EU countries are based on the principles of carrying out the control and audit processes and accounting standards of the International Federation of Accountants and the European Community of Experts on Economic and Financial Accounting. Unions of Chartered Accountants, Auditors and Commissioners of Accounting in each EU country decide on the extent to which international standards are applicable.

The idea of creating an account plan in countries with Anglo-American influence on accounting development was often identified with the development of centralization principles inherent in a planned-regulated economy. However, in this regard, the purpose of E. Shmalenbach was different: in contrast to the Taylorism and centralization of production, he was guided by the fact that the proposed chart of accounts would be used as a tool for decision-making in a free market economy.

In 1927, the Association of German Machine-Building Enterprises published a plan of accounts of the Weimar Republic. It was a simplified version of the billing plan proposed by E. Schmalenbach. In the late 30's of XX century government regulation of the economy in Germany was decisive, and therefore the introduction of a single plan of accounts was inevitably inevitable. This is due to the fact that state controllers should have full information about the activities of any organization. In connection with this in 1937 was adopted a mandatory plan of accounts. In first place in the importance of accounts in the accounting system, it was not trading (financial), and production records. This chart of accounts also relied heavily on the development of E. Schmalenbach. The German chart of accounts (1937) became the basis for the accounts of Sweden (1942), Holland (1944), Poland (1942),

Hungary (1943) and Greece (1944). At the same time, it should be noted that in Belgium (1944) a plan of accounts, focused on the balance principle of I. Sher, and not on the principle of the capital turnover of E. Schmalenbach, was introduced. In general, the construction of a chart of accounts on the principle of capital turnover proposed in the works of E. Schmalenbach, prevailed in almost all countries of continental Europe.

After the Second World War in the economic activity of countries and companies of Europe, the American capital began to gain decisive value. Together with this was recognized and Anglo-American approach to accounting. Perhaps this influence would not have been so significant if not one of the drawbacks of E. Shmalenbach's plan: the plan of accounts, which simultaneously covers accounting and management accounts, leads to a breach of commercial secrecy. Around this issue, the largest discussions among critics of the bill of accounts of E. Schmalenbach were unfolded. Thus, V. Le Kutr wrote that in the German account accounting records of 1937 much attention was paid to management accounting, which led to a decrease in the significance of financial accounting.

In Switzerland, K. Kefer (1943–1946), while developing his own account plan, developed similar ideas, laying the foundation for only financial accounting. This chart of accounts reflected the theory that it was based on four main accounts. These accounting accounts were subject to analytical breakdowns: Assets, Liabilities, Expenses, Profits. Subsequently, the idea of four accounts was developed by the French author P. Garnier. It should be noted that the plans of the accounts of O. Brad, K. Kefer and P. Garnier focused on the possibility of consolidating financial statements.

Financial accounting includes, as a rule, 7–8 classes of accounting accounts, while in all countries, balance accounts are grouped into 5 classes: capital accounts, fixed assets, intangible and financial assets, inventories and work in progress, calculations and financial results. The bills for the cost-issue system are from 2 to 3 classes; most often it accounts for the cost of items, income by type. In separate countries, an independent class "Results of Accounts" is allocated.

In the plans of accounts also establishes a certain connection between classes. So, in the French accounting account, in the class 6 "Expense reports", the accounts are placed in a similar manner to the accounts of class 7 "Income accounts". For example, account 66 "Financial expenses" in class 6 corresponds to account 76 "Financial income" in class 7.

Expense and revenue accounts (have corresponding accounts of the second and subsequent orders, which account for expenses and revenues, based on their economic nature and nature. At the same time, the accounts are grouped in such a way as to allow them to determine the production, financial and extraordinary (extraordinary) result.

It should be emphasized that in most national accounts there is no class "Profit and Loss Account and Profit Profit". This is due to the fact that, in accordance with international norms, the balance is disclosed after the distribution of financial results, that is, taking into account the decisions already taken on the use of the balance on the account "Results for the year" and the balance of "Retained earnings".

In addition to the above, it should be noted that although the plans of the accounts of the 12 participating countries are very similar in general, there are some differences between them, which are usually caused by national peculiarities and traditions.The plans for the accounts of the Latin American states are shaped by the characteristic feature of the Anglo-American accounting system, which does not have the generally accepted national accounts plans. For these countries, the following features in the accounting accounting plans used are typical:

– availability of two independent accounting departments – financial and managerial;

– the chart of accounts, like most EU Member States' accounts, is based on a cost-issue method with a constant emphasis on accounting for the final result.

– direction of the purpose of the accounting system for the operative determination of financial results.

– significant integration of planning and accounting at the level of financial and managerial accounts.

In accordance with this definition of financial results is carried out on the basis of grouping the cost of elements with a clear separation of value added.

The lack of a single chart of accounts does not mean that anarchy prevails in the countries of the Anglo-American accounting system in this area. All professional account plans are based on certain principles, on the basis of which each company independently justifies the expedient and adequate account plan. Thus, in the USA, all accounts are divided into six main groups: Assets, Liabilities, Equity (capital of company owners), Profits, Expenses, Taxes.

Conclusions

In the modern information and intellectual economy, the specifics of the activities of each economic system (companies, corporations, enterprises), the structure of its economic resources and components, and the criteria for determining the efficiency of functioning become important. The given and determines the need for an organization for an individual entity accounting system. In theoretical studies the necessity of development and additional introduction of accounting subsystems of a new type (actuarial, prognostic, and strategic) or types of accounting is formulated. Regardless of content and functional orientation, a new version of the accounting system should be based on the plan of accounts, combining it accounts of financial and managerial accounting.

Based on the specifics of the functioning of modern enterprises, it is clear that the unification of both general classes of accounts and the class of accounts of management accounting is complex. From this perspective, it is evident that for the organization of the accounting system, each enterprise should develop its own chart of accounts. Therefore, the principles of its construction, in particular the historical experience of the formulation and practical testing of multi-type accounts, the results of their analysis and the assessment of their level of validity by modern researchers, are at the forefront.

On the basis of the analysis of the development of accounting plans there is a lack of clear formalization of the principles of structuring the format of the accounts, and therefore the formulation and solution of the problem in this article is directed at substantiation of expediency of further researches made in the historical past approaches to the development of multi-type plans of accounts.

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SUPPORT OF THE STUDENTS ENTREPRENEURIAL INTENTIONS WITHIN THE HIGHER EDUCATION SYSTEM

Abstract: Entrepreneurial intentions refer to a state of mind that directs and guides the actions of the individual toward the development and implementation of a new business concept. Educational support is perceived as a determinant of entrepreneurial intentions, for the reason of providing the students with necessary knowledge about entrepreneurship.

The main aim of this article is to present the role of university education in shaping the entrepreneurial intentions among students in Ukraine and Poland and the forms of university support which students prefer when start own business.

In order to develop the issue, the authors conducted a questionnaire survey among 212 students in Ukraine and Poland in 2016. The results of the research clearly show that Ukrainian students present higher level of entrepreneurial orientation as an intent to set up and to develop of the company in the future than Polish students, and at the same time they expect less support from the university.

Keywords: entrepreneurial intentions, entrepreneurial orientation, entrepreneurship, university education

Statement of the problem. Studies have long recognized that entrepreneurial organizations constitute a major engine of economic development (Henderson, Weiler, 2010). Nowadays, not only enterprises, but governments, educational institutions or non profit organizations, etc. are seeking ways to develop entrepreneurial forces. In the simplest meaning, entrepreneurship can be defined as establishing of new and independent enterprises (Mueller, ve Thomas, 2001). In broad sense, entrepreneurship is described as the process in which something new and innovative is created in order to generate wealth for the entrepreneurs and, indirectly, to aggregate value for society (Leit, de Moraes, 2015).

Understanding factors and conditions which urge individuals to become the entrepreneurs is a crucial question in entrepreneurship studies (Shane, Venkataraman, 2000). Krueger and Brazeal (1994) indicated that before there can be entrepreneurship there must be the potential for entrepreneurs. Interest in entrepreneurship depends on professional experience, management experience, and education and training in the existing education system (Bickenbach, Dohse, Liu, 2017). The growing importance is visible in the role of education system, especially the universities in shaping entrepreneurial intentions and promoting entrepreneurial behaviours of students. There is also a call to conduct a research to understand the determinants of students to involve in entrepreneurship and also to contribute to the development of understanding in this area (Okręglicka et al. 2017).

The main research problem of the article is if there are differences in entrepreneurial intentions of Polish and Ukrainian students and what kind of university support is preferable by them when they start own business.

Analysis of recent research and publications

Entrepreneurial orientation constitutes an individual's natural tendency or attitude towards entrepreneurship (Ngah et al, 2016). It is defined as an organizational willingness to find and accept new opportunities and taking responsibility for the produced effects (Morris et al.,1996).

Educational institutions, especially universities, play an important role in the creation of early entrepreneurial competencies which are later manifested in the form of entrepreneurial orientation (Ismail et al, 2015). In literature, there is recognized the role of universities in shaping and supporting entrepreneurial intentions of their students. Ibrahim and Soufani (2002) found out that the education system plays a significant role in identifying and shaping entrepreneurial features. Education will intensify students' entrepreneurial efficacy e.g. resource assembling, opportunity seeking, and business success achievement through attitude, knowledge and skills they possess (Wilson et al., 2007).

Entrepreneurial intentions are a variable of the perceived feasibility and desirability of the entrepreneurial action (Krueger, Reilly, and Carsrud 2000). Entrepreneurial intentions refer to a state of mind which directs and guides the acts of the person toward the development and implementation of a new business idea (Karimi et al., 2016). There is an extensive body of literature which argues that entrepreneurial intention plays a very relevant role in the decision of new business creation (Linan and Chen 2009).

The development of entrepreneurial aspirations depends on two correlated elements: self-efficacy and outcome expectations (Fig. 1). The interaction of these basic constructs leads to the formation of the entrepreneurial intentions. The entrepreneurial intentions appear when a person (Pfeifer, Šarlija, Sušac, 2016):

– anticipates positive results from entrepreneurial activity;

– feels ability to conduct entrepreneurial tasks or operations successfully;

– express a high personal interest or aspiration toward entrepreneurship.

The individual or external determinants such as attitudes, past educational experiences, social norms, external support, and obstacles may directly or indirectly lead to changes in entrepreneurial intentions or nascent behaviour.

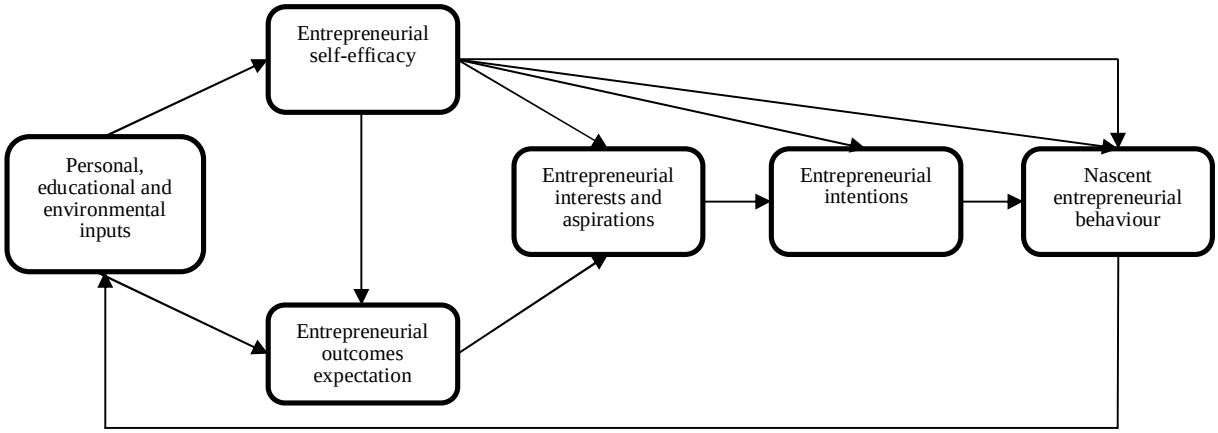


Fig. 1. Development of Entrepreneurial Interests and Career Choice
Source: Pfeifer, Šarlija, Sušac (2016).

Educational support is perceived as a determinant of entrepreneurial intention, for the reason of providing the students with necessary knowledge (Mumtaz et al., 2012). Entrepreneurship education provides knowledge and information to non-entrepreneurs presenting entrepreneurial potential, which help them to possess required skills and attribute for entrepreneurship (Fekri et al, 2012). Implementation of business thinking type of students requires from education system which introduces the innovative contents and style of the teaching which is called the business approach in education (Seidahmetov et al, 2014)

The impact of entrepreneurship education, training, as well as support has been recognized crucial factors in developing positive perceptions of competence for start-up firms (Zhao, Seibert, Hills, 2005), the development of favourable attitudes toward self-employment (Krueger, Brazeal, 1994), and related entrepreneurship preferences and intentions (Chen, Greene, Crick, 1998).

Timmons and Spinelli (2004) suggested that entrepreneurial education is efficient when it enables students to develop a higher ability for imagination, creativity, and flexibility, as well as to develop the ability of conceptual thinking and treat change as opportunity. Krueger and Brazeal (1994) suggested that entrepreneurship education should have a positive impact on entrepreneurship development by increasing abilities to solve entrepreneurship-related tasks. The lack of entrepreneurial contents in education system is perceived as negative occurrence which causes that entrepreneurial dreams of many students can be hindered by inadequate preparation of the academic institution (Wang, Wong, 2004).

Despite the growing interest in academic entrepreneurship and new business creation by students, very little empirical research identified entrepreneurial education and the support factors that can foster entrepreneurship among university students (Walter, Auer, Ritter, 2006). Furthermore, although the growth in the number of entrepreneurship courses and curricula, and the link between entrepreneurial education and entrepreneurial behaviour (Galloway, Brown, 2002; Luthje, Franke, 2003), student entrepreneurship achievements still remain low (Kraaijenbrink, Groen, Bos, 2010).

According to Autio et al. (1997), the support is received by students from the university environment is an important factor which influences their career decision and interest in becoming an entrepreneur after graduation. Peterman and Kennedy (2003) found that participation in an entrepreneurship program significantly increased the perceived feasibility of start a business, which implies that entrepreneurial education can enhance entrepreneurial intention.

The method for an entrepreneurial education program for increase the self-efficacy of students is to provide mastery experiences or "learning by doing." It can appear in the opportunity to conduct feasibility studies, and creation business plans, business simulation, case studies, listen to well-known guest speakers, and to benefit from meaningful apprenticeships and trainings (Cox, Mueller, Moss, 2002). Not least is to foster a supportive environment. It can include offering resources such as a network cooperation which results in expertise knowledge possessing in areas such as marketing or audit, and the provision of one-to-one support (Saeed et al., 2015). By this support some people may gain the confidence to initiate their own business venture (Kraaijenbrink, Groen, Bos, 2010).

Empirical researches repeatedly suggest that the student entrepreneurship programs can have both direct impact on intentions and indirect impact on key constructs of self-efficacy, identity, or outcome expectation (Zellweger, Sieger, Halter 2011; Lent, Brown, Hackett 2002), however, the research results are inconclusive. Gerry, Marques and Nogueira (2008) found insignificant impact of entrepreneurship-related training on students' entrepreneurial intentions, whereas Fayolle, Gailly and Lassas-Clerc (2006) indicated that entrepreneurship education programs may have a direct positive impact as well as a counter effect on entrepreneurial intentions. Some preliminary researches among Croatian students present that university-based entrepreneurship education has a relevant direct impact on developing entrepreneurial ability and mindsets (Kružić, Pavić 2010).

Goals of the article

The main aim of this article is to present the role of university education in shaping the entrepreneurial intentions among students in Ukraine and Poland and the forms of university support which students prefer when start own business.

The article starts with a literature review in order to present the importance of shaping entrepreneurial intentions among students. Research papers considered for inclusion in this literature review are written in English, from peer-reviewed journals, and accessible through electronic economic databases. Then the results of the questionnaire survey are presented. The authors conducted a questionnaire survey among students in Ukraine and Poland. The research group selection had an accidental character, what place the research among seed researches, presenting

preliminary data to further conformation within representative research.

The data collection was completed in 2016, in total 212 complete survey questionnaires were used for the data analysis from universities located in 2 countries. The descriptive statistics and Chi square independence test were used in empirical data analysis to achieve the paper goal. The calculations were performed using software Statistics.

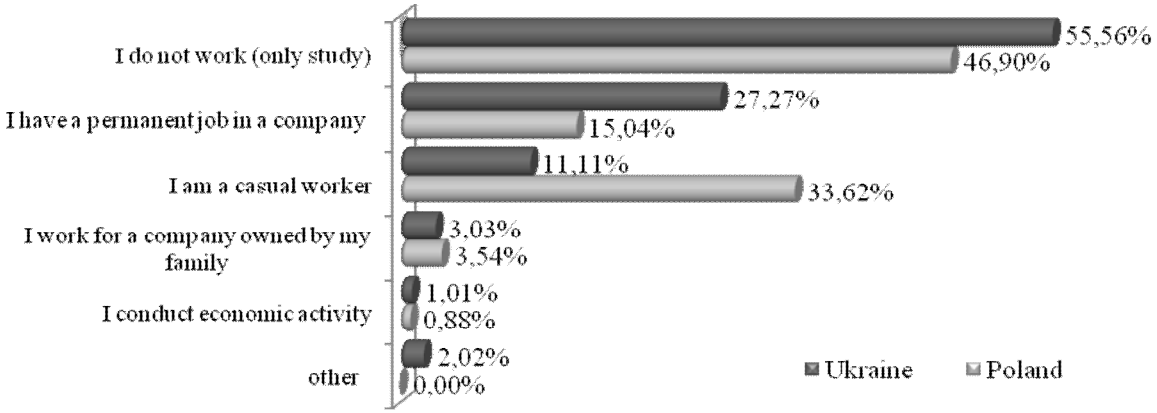
The main material of research

According to the main aim of the research, the results of the survey were presented which show the entrepreneurial intentions of students in Ukraine and Poland, and the expected forms of university to start/run own business.

Initially, students described their current professional situation, presented professional experience and business interest. In Ukraine more than the half of the respondents do not work, whereas in Poland the share of not working students is 8.66 % lower. Additionally, the differences among work active students are visible: in Poland 3 times more students work as casual employees, while in Ukraine more students have permanent job.

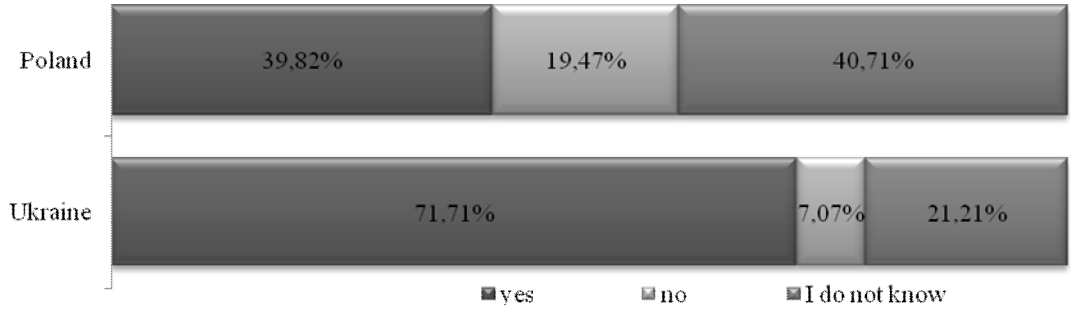
The result of Chi square test indicates that the country of origin has not the influence on the current professional situation of students (Fig. 2).

One of the most important issue of the research is to determine the entrepreneurial attitude of students, as an intent to set up and develop own business in the future. There are visible differences in examined countries: only about 40 % students plan to create their own company in Poland, while over 70 % of Ukrainian students prefer to be self-employed after graduation. This tendency can be noticed in Europe in general – there is the higher level of wealth of society, the lower entrepreneurial orientation is visible among members of the society. It is also confirmed by the result of Chi square test. The p-value indicates the necessity of hypothesis H0 rejection and accepts the hypothesis H1: there is the dependency between variables (Fig. 3).



*Chi-square = 18,486; p = 0,071

Fig. 2. Actual professional situation of the student. Source: own research.



* Chi-square = 22,086; p = 0,000

Fig. 3. Intention to start own business after graduation by the student. Source: own research.

Start own business is connected with many obstacles and limitations. Analysing the most important concerns of students by creating new business entity there are great differences in answers in Poland and Ukraine. Ukrainian students are afraid of the lack of own sufficient funds and insufficient knowledge the most, and also lack of experience whereas for Polish students these are the minor factors. Compared, students in Poland found the most severe obstacle in lack of customers (43.4 %) as a result of strong market competition. In Ukraine this element was pointed only by 24.2 % of students (Table 1). The observed differences emphasize the different level of economic and market development of examined countries.

The dominant part of Polish students expresses the opinion that the university should support them on their way to entrepreneurship. This indicates a demanding attitude of Polish students. In this case, the opinions of Ukrainian students are quite different. Less than the half of students expect any support from the university in setting up and running their own business, and moreover, 39,39 % of students don't want any form of support (Fig. 4).

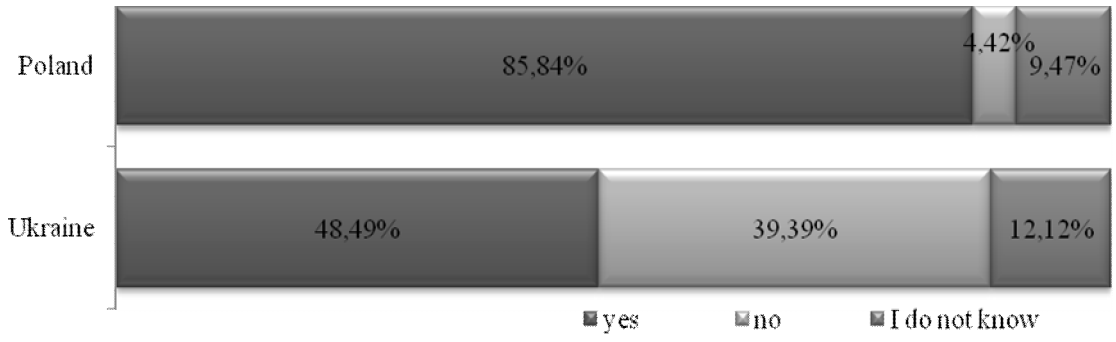
Table 1

Concerns of students about setting up your own business

	Ukraine	Poland
lack of sufficient own funds to undertake own business	60.6 %	11.5 %
insufficient knowledge, lack of experience	53.5 %	24.8 %
costs of running the own business (too high taxes, stamp duty, insurance)	45.5 %	31.9 %
too rapidly changing market situation	38.4 %	16.8 %
excessive bureaucracy	35.4 %	11.5 %
lack of customers	24.2 %	43.4 %
dishonest contractors	19.2 %	14.2 %
inability to credit obtain or repayment	14.1 %	23.0 %
having no premises to conduct their own business	11.1 %	4.4 %
lack of suppliers	4.0 %	10.6 %
no concerns	1.0 %	0.9 %

* Chi-square = 61.564; p = 0.000

Source: own research



* Chi-square = 42,134; p = 0,000

Fig. 4. Expectations about whereas the university should support their students in setting up and running their own business? Source: own research.

There are visible differences in forms of support students prefer in both examined countries. Polish students are focused on possibilities of obtaining founds, especially from the EU, but also from other sources, and in this area they expected support from university. In comparison, Ukrainian students prefer that the university facilitates those contacts with co-operators and promotes their work, especially technological results (Table 2).

Summarizing, the survey showed that Ukrainian students present more entrepreneurial attitude then their colleagues from Poland, they have less demand in the area of external support to start own business. Polish students considered to be supported by the university in wider extent, and the limited access to this support can be one of the reasons of lower entrepreneurial intention.

Table 2

Expected type of support from the university to students by setting up and running their own business

	Ukraine	**Poland**
the possibility of obtaining information about sources of financial support for academic business	8.08 %	22.12 %
the possibility of obtaining assistance in establishing contacts with commercial companies	37.37 %	26.55 %
the possibility of assistance from the university in obtaining EU funds	18.18 %	27.43 %
the opportunity to participate in useful training for the implementation of research results to the economy	12.12 %	18.58 %
access to used equipment (hardware). e.g. for developing capable solutions of being used in the economy	6.06 %	3.54 %
promotion of technological produced results at the student's company which was conducted by university	18.18 %	0 %
Other	13.13 %	1.77 %

* Chi-square = 41.856; p = 0.000

Source: own research

Conclusions and recommendations for further research. Educational support in form of the professional university education is a pertinent of obtaining necessary and useful knowledge about entrepreneurship. The proper and efficient entrepreneurial education influences the scope and strength of entrepreneurial intentions of students.

The research results indicate that Ukrainian students present higher level of entrepreneurial orientation as an intent to set up and develop the company in the future, than the Polish students. In addition, students from Ukraine expect less support from the university, while Polish students need attendance. In both countries, as the most expected support was pointed the possibility of obtaining assistance from the university in establishing contacts with commercial companies and in obtaining EU funds. In contrast, the significant difference is visible in perceived obstacles in creating new business. In Ukraine the most important barrier is a limit of own capital of future entrepreneurs, whereas in Poland it is a fear of lack of customers.

The study is not limitation free. Especially, the research group selection has not a representative character, and as the result, there is not possible to generalize the research conclusions.

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THE CHOICE OF LANGUAGES FOR WEBSITE OF ORGANIZATIONS IN CASE OF MULTILINGUAL CUSTOMERS

Abstract. The paper describes the changes of potential customers' language priorities in multilingual societies at the example of Ukraine. The case of Ukraine is interesting because of sharp changes in customers' attitude to other countries. It makes huge influence on customer behavior while buying goods: customers pay much more attention on the country of product origin. That is why the hypothesis of the article was that such changes in attitude to products produced in certain countries also connected with changes in attitude to languages of these countries and that companies should take into account these changes in their internet-marketing. To check this hypothesis the survey to identify business attitude to this question on the example of websites of Ukrainian bank sector was made. This economic sector is the most vulnerable to customer loyalty. Research showed that Ukrainian language is the prior to satisfy potential clients, and Russian language is needed to avoid the incomprehension of Russian speaking population.

Keywords: internet-marketing, search engine optimization, multilingualism, customer behavior, banks.

General formulation of the problem. Due to the military and political conflict in Eastern Ukraine behavioral characteristics of ordinary customers and users of Internet resources are recently changing. In this situation there is the question that arises in the minds of business owners and web marketing specialists: what is the impact of using different languages in their websites? As we know, the population of Ukraine consists of several ethnic groups including Ukrainians, Russians, Jews, Poles and other nationalities. At the same time the usage of many languages on web sites is difficult technically and requires a lot of additional expenses. That's why there is a logical question: which languages we must choose to use on websites?

Relevance of the chosen topic. The problem of multilingualism is highlighted in Ukrainian society due to the conflict with Russian federation but poorly taken into account in functioning of Internet resources of enterprises.

Analysis of recent studies and publications. There are many authors that made researches of multilingual phenomenon in modern Ukrainian society. For example, in [1] it is indicated that today informational websites are often bilingual, but Ukrainian version is usually secondary and low quality because texts are translated using web-translators without correcting any basic mistakes Most websites of Ukrainian enterprises don't have Ukrainian version and even if they have it, Ukrainian version is usually placed on the second place after Russian, demonstrating the attitude of business to the use of Ukrainian language. Without knowing and using Russian language it will be difficult to find a work because most of job vacancies are created by using this language. Also without knowing Russian language it will be hard to buy something in online-shops, the owners of which often don't mind to create product descriptions using official state language.

Enough common phenomenon for websites that are oriented on Eastern and South Ukraine is the use of only Russian language. It is relied to the particularity called asymmetrical bilingualism. That means that most people that speak Ukrainian speak Russian as well, but at the same time not all people that speak Russian speak Ukrainian. Similar trends exist in Estonia. Due to the residence of a large number of Russian-speaking persons there are many websites that are translated on Russian language. In the internet you can find Russian version of presidents' website http://www.president.ee/ru, http://www.eesti.ee/rus (national website); they have bilingual website of fiscal and customs department, police department, border security department, department of national medical security, state court, some regions, cities, politician parties, organizations. Russian version of websites is used also in many Estonian newspapers and magazines [3]. A completely different situation is observed in Latvia. The law about national language of this country force legal entities to provide official information on Latvian and this fact limits the use of Russian language in the country [4].

The problem of multilingual customers and business rises not only on post-soviet space but also in other countries that have similar ethnic situation. This problem is explored by R. Miller [5] in his article about the reaction of Canadian business on the spread of French language. He speaks about infringement of consumers' rights who lives in French-speaking region Quebec by the ordinary manufacturers who orients on general trends and don't take into account the needs of French-speaking population. The author proposes the implementation of national constraints and incentive measures which will help the future spread of French language in a country. He indicates that on political, social and legal level regional authority must build clear strategy of the French language support.

Speaking about Ukraine, O. Kramar [6] shows the statistics in his researches. He indicates that the amount of national content made in Ukraine in 2011 was not significant among all content that circulated in Ukrainian Internet. He thinks that its part was not more that 6–10 %. It should be underlined that the statistics used by author (bigmir.net) has strong pro-Russian orientation. Author also provides statistics about languages of websites in 2003, 2007 and its interpretation that is in some points questionable. In the first case for 2003 author analyze all websites but for 2007 he uses the statistics of the most popular websites of Ukrainian Internet. The fact is that the popular websites want to minimize their risks and demonstrates the trends of satisfying the majority of users and therefore they use more Russian language which was more popular in the past.

However more important is to see the statistics that show how market reacts on behavioral changes of society. Interesting trends are traceable in the results of research of internet audience of Ukraine made by InMind in March 2013. By the results of February 2013 the company determined top 25 domains that are used by Ukrainian users, particular (from 1st to 25th place in the ranking): Google (average daily share – 66 %), Vkontakte (60 %), Mail.ru (48 %), Yandex (40 %), Odnoklassniki (37 %), Youtube.com (28 %), Wikipedia.org (15 %), Facebook.com (13 %), Ukr.net (12 %), Ex.ua (11 %), I.ua (8 %), Webalta.ru (7 %), Rozetka(.ua+.com.ua) (7 %), Sinoptik.ua (7 %), Rambler.ru (7 %), Aukro.ua (6 %), Gismeteo.ua (6 %), Blogspot.com (6 %), Ucoz.ru (6 %), Rutracker.org (6 %), Fotostrana.ru (5 %), Slando (5 %), Ask.fm (5 %), Marketgid (.com+.info) (5 %), Meta.ua (5 %).

Among these websites there are 8 Ukrainian with domain name that ends on .ua: Ex.ua, I.ua, Rozetka (.ua+.com.ua), Sinoptik.ua, Aukro.ua, Gismeteo.ua, Slando, Meta.ua. [7]

There are two bilingual (Ukrainian-Russian) websites / webmail services among them - Ukr.net та I.ua, two weather forecast websites – Sinoptik.ua та Gismeteo.ua, and also online Ukrainian sales board – Slando. Ukrainian web search resource Meta.ua is trilingual (English-Ukrainian-Russian). At the same time such commercial projects as Ex.ua, Rozetka(.ua+.com.ua), Aukro.ua don't mind to propose Ukrainian language [7]. But in autumn 2016 Rozetka starts the development of Ukrainian version of website and particularly testing it. May be soon we will see full Ukrainian version of the biggest online store of Ukraine [8].

According to researches made by S. Svidlovom [9] in 2016 based on data from top.bigmir.net, top.i.ua, liveinternet.ru we can see following statistics: according to top.bigmir.net 13.2 % of websites use Ukrainian language, 28.8 % use two languages, 58 % use Russian languages. According to top.i.ua 28 % of websites use Ukrainian language, 20 % use two languages, 52 % use only Russian language. According to the data of liveinternet.ru Ukrainian language is used on 14 % of websites, there are 24.8 % of websites that are bilingual and 61.2 % use Russian language. If we will compare this research with the results of previous year, we will see that the part of Russian websites in top 250 was reduced by 4.8 %.

According to the data of zmiya.com.ua among the most popular users of social networks the part of Ukrainian-speaking users raised by 7 % and now takes first place. Ukrainian-speaking users constitute 49.25 %, Russian-speaking – 46.5 %, bilingual – 4.25 %. According to the information of another website watcher.com the part of Ukrainian users raised only by 3 % up to 43 %, the part of Russian-speaking takes 51.75 %, bilingual 5.25 % [9].

According to data of Ukrainian manufacturers catalogue "Made in Ukraine" only 33 % of Ukrainian websites has Ukrainian language. Comparing with previous year the part of websites with Ukrainian language raised only by 1 % in 2015 [9].

According to the data of the research of Razumkov center in 2016 (see Fig. 1), we can see the dynamic of Ukrainian and Russian language use by the population. In the statistic of 2008 we can see the reduction of popularity of Ukrainian language and the raise of the part of bilingual population. The part of Russian language rest almost unchanged so the population only started to use two languages in their life. However the data of 2015 confirm evident changes of those trends. After exacerbation of relations with Russia the part of the population that consider Ukrainian as a native language raised by 16 % up to 59.9 %. At the same time the part of bilingual population was not significantly reduced in comparison with the part of population that considered Russian as a native language before. This abrupt change may also be linked to the inability of making research on the Donetsk and Lugansk territories and the absence of information from temporarily occupied Crimea. Despite those facts this statistics will probably appear on the functioning of all spheres of society, including websites [10].

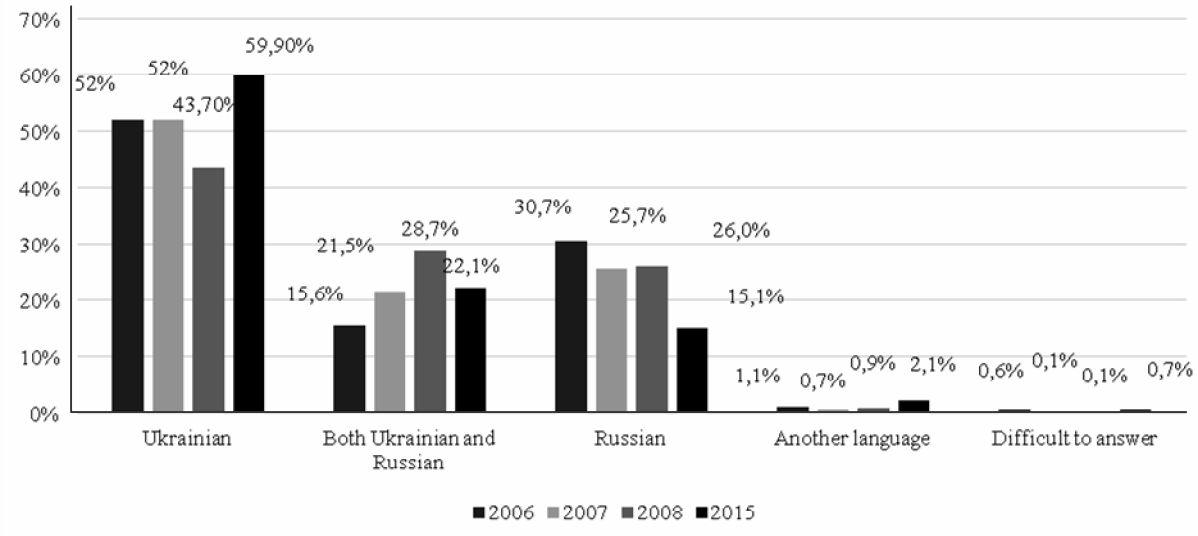

Fig. 1. Statistic of the language perception as a native by the population of Ukraine [10].

There is an interesting statistic shown by [7] about websites of regional administrations in terms of analyze of their websites' languages. Among twenty four regions five websites (21 %) are bilingual, rather, conditionally bilingual, because the change of language almost always had the problems. One of this websites (Odessa region) promotes interference by publishing the materials

both on Ukrainian and Russian languages. Nine websites (38 %) are trilingual, only four of them are fully trilingual, another two are actually bilingual and the rest three are monolingual. And finally one website (4 %) can be considered as multilingual or monolingual with the possibility to automatically translate pages on one of eighty languages using Google translator [7].

Bold unsolved aspects of the general problem. The issue of multilingualism is extremely important for our society and business. However the question of multiple or single language use on websites is not well researched. This question is often posed not by the scientists but by ordinary users in blogs, forums and other online media. Some data about the use of multiple languages on websites is really outdated and not entirely true due to the change of social and political situation. Today the question of multilingualism requires detailed consideration because the use and refusal of use of Russian or Ukrainian language on websites may cause certain economic consequences.

Purpose and objectives. Purpose of this article is to analyze changes in the linguistic situation on Ukrainian websites of entities that are used for marketing communications with their clients. Main objectives are to make own analysis of current situation of website multilingualism in Ukrainian society and develop the recommendations about the choice of website language.

Main material. If we will look at websites which provide information, we will see that the most important result indicator for them is the quantity of visitors during the period of time. From the point of view of web marketing there are three questions: 1) quality of SEO (search engine optimization); 2) cost of CPC (cost per click) Adwords publicity; 3) content perception of target audience. First point is SEO. The fact that SEO is implemented using publishing of unique content on website with keywords that are used by target audience.

If the website is monolingual so the keywords will be only on Ukrainian that disables SEO using Russia keywords. The same trend is observed in the opposite situation, when we will be using only Russian keywords.

Ukrainian online content is growing, but Russian still prevails. This is the opinion of the director of “Google Ukraine” Dmitry Sholomko. He said: “Google – is only a “mirror” that reflects not only the ratio Ukrainian and Russian content in network, but the language preferences of users” [11]. However, we cannot be fully agreed with his statement, considering next point.

The point we are speaking about is a cost of paid search optimization by Google. The fact is that Google AdWords ranks ads search on a 10-point scale and estimates the cost of ad clicks or ad demonstration based on this scale, existing competition and a number of other factors. These ten points are based on three indicators: 1) the expected CTR (click-through rate) – the more people want to find information on a given keyword – the higher will be our CTR; 2) the relevance of the ad – that means, how much ad matches the keyword that user search; 3) landing page – the quality of a webpage and relativity of information to the keywords searched by user.

The problem is that the last two figures largely depend on the availability of the entered keyword in your ad text and landing page text. Accordingly, if our users are looking for Russian language, the use of the Ukrainian language in the ad or on the webpage/landing page will not allow the system to identify the keywords as those that satisfy the search. As a result, you will pay more money for advertising or you will have to translate your own webpage/landing page on Russian language. If the information will be searched on Ukrainian language – we will pay less for Google advertising is and we will have higher chances of being in top of the advertising list.

Also it’s very important to take into account the perception of online content. One of the reasons of Russian language use in Ukrainian Internet is the focus of media resources and strong use of the Internet in the Russian-speaking regions and in Kyiv. I. Mudra [12] provides information about regional distribution of Ukrainian segment of the Internet audience, Kyiv – 66.06 %, Odessa – 8.49 %, Dnepropetrovsk – 7.04 %, Donetsk – 4.53 %, about 15 % are at rest territory. However, these statistics cannot be considered entirely reliable, because most of the traffic is going

through main servers in Kyiv. We can find interesting statistics in print publications. On 15.10.2012 in Ukraine there were 406 exclusively Ukrainian-language print media, 437 Russian and 325 Ukrainian-Russian print media [13].

O.G. Ruda in her research determined the attitude of population to the duplication of information in two languages. The result is shown in Fig. 2. According to this research 43.2 % approve the use of two languages, 21.7 % don't approve, for 33.5 % it does not matter. This statistic demonstrates for website owners the feasibility to duplicate information in both languages.

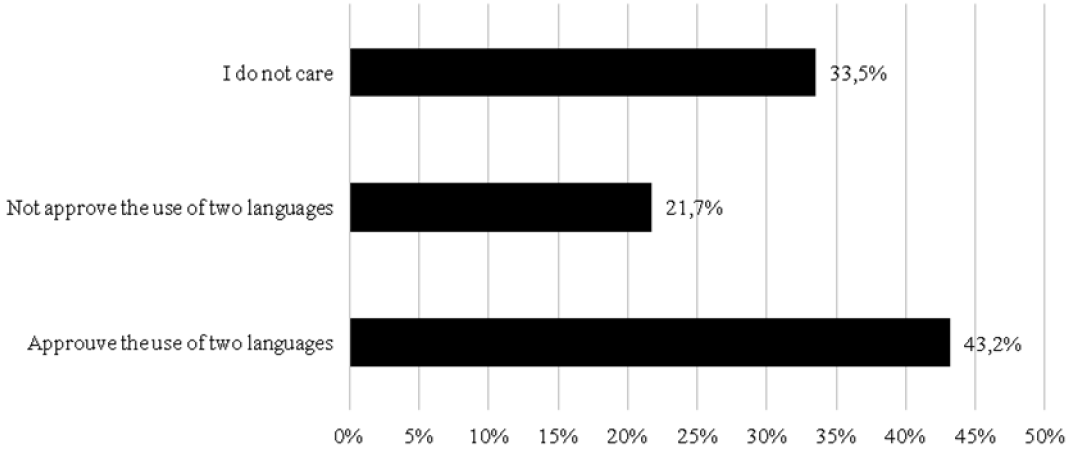

Fig. 2. Attitude to information sources duplicated in Russian and Ukrainian languages [13].

The conflict in the East of the Ukraine in 2014 caused a boycott of Russian goods, which consequently aggravated the language question in business. According to research made by TNS in 2015 more than half of Ukrainian (58 %) were positive for a boycott of Russian goods, 45 % of respondents personally participated in the boycott. Negative attitude to the boycott had 24 % of Ukrainian – most of them in Eastern and Southern regions. Obviously, in Western Ukraine there are many people who personally participated in the boycott – 71 %, next are Kyiv – 61 % and Northern Ukraine – 60 %. Interesting is the fact that men (51 %) are more likely than women (40 %) boycott Russian products [15]. As a result, the turnover of foreign trade of goods and services between Ukraine and the Russian Federation in the first half of 2015 compared to the first half of 2014 decreased 2.2 times to 7.829 billion dollars [16].

In connection with the above statistics, there are the first consequences for owners of Internet resources. Increased demand for Ukrainian goods and Ukrainian content causes more web searches using Ukrainian language instead of Russian. Thus, the owners of companies that do not optimize their website in Ukrainian language lose users. In addition, as the statistics show, customers refuse to purchase Russian goods. Accordingly, the perception of Russian content in online stores will be negative, that can cause loss of customers, who consider Ukrainian as their native language and this is almost 60 % of the population [10].

After analyzing all the collected data, we decided to conduct our own analysis by examine the use of Ukrainian and Russian language on websites of the 40 strongest banks of Ukraine according to the list of rating portal http://minfin.com.ua [17] and http://www.forinsurer.com [18]. Observations was made by surfing online and analyzing websites of this banks. Bank sector was chosen because it is enough well developed in Ukraine and is the most heavily impacted by customer confidence to cooperate with them and the most responsive to their consumer behavior. It should be noted that the data could have an impact from certain banks "regionalism". For example, some banks are active in Western Ukraine and other are focused on Eastern and Southern Ukraine. That is why we have used bank ratings that provide statistics from all regions and minimize error. Observations was made on 12 January 2017 by Ievgenii Ugolkov and

Oleg Karyy from the department of management of organizations, Lviv Polytechnic National University. Below you will find an analysis of the information that we collected.

First question that we posed in our research was about the languages that are used on websites of Ukrainian banks. The results are shown on the Fig. 3. As we can see the most popular is the use of three languages together (Ukrainian, Russian, English). Three languages are used by twenty three of forty banks, representing 57.5 %. Eight from forty banks use Ukrainian and Russian language that is 20 %. There are four banks that use only Ukrainian language, representing 10 %. Only Russian language is used by one bank that makes 2.5 %. Other languages were not represented on the websites of the analyzed banks indicating the refusal of their use. Even the foreign banks as Polish KredoBank and French UkrSibBank don't use the language of their countries of origin.

Second question that be posed in this research was the choice of the default language on the websites of Ukrainian banks. The results are shown of the Fig. 4. Despite the fact that only the Russian language in used on the website of one bank Ukraine, we have 5 banks that use Russian as a default language, representing 12.5 %. Other 35 banks (87.5 %) use the Ukrainian language as a default. English is not used as a default language on the websites of Ukrainian banks.

It is important to mention that the use of multiple languages often leads the low quality of one or two of them. Banks that are using Ukrainian language as a main often have poor quality Russian or English versions. To economize the time they don't translate the articles, banners, news and promotions on other languages. In addition, we can find limited functionality in these versions (for example Internet banking).

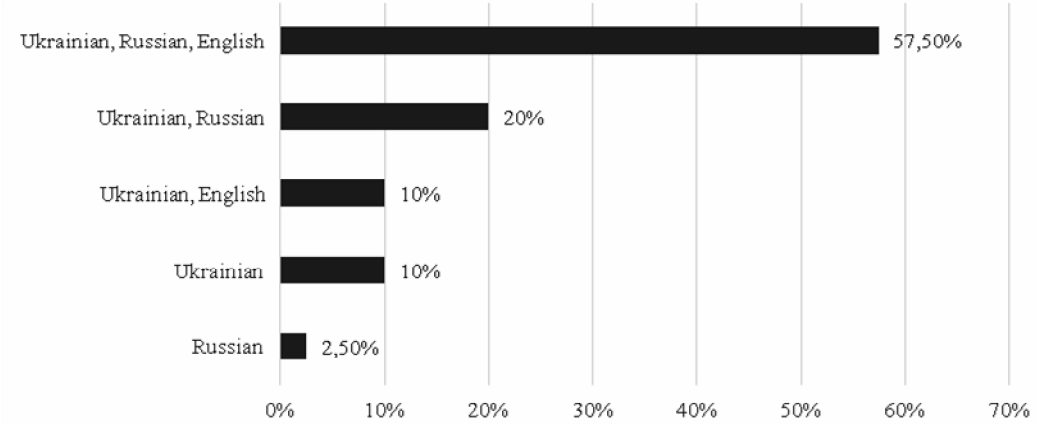

Fig. 3. Languages that are used on the websites of Ukrainian banks.

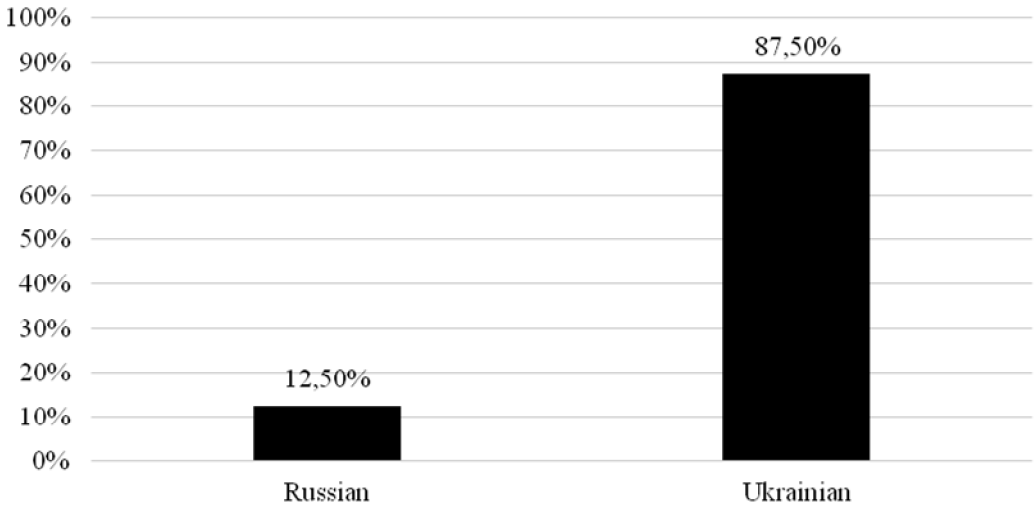

Fig. 4. Language set as default on the websites of Ukrainian banks.

On the basis of the analyses of the languages use on the websites of Ukrainian banks we can confidently say that they are oriented on the maximum satisfaction of modern need of Ukrainian client. Most of them use three languages on their websites: Ukrainian, often as a default, to minimize the risks of losing the client that enters website, Russian to satisfy another part of Russian speaking population, and English that enables to make certain international activity and slightly improve the reputation of bank in the eyes of potential client. Only Russian or only Ukrainian languages are used infrequently.

Conclusion and directions for further researches. After analyzing the literature, previous statistics and conducting our own analysis it is safe to say that at the moment we cannot still talk about total inclusiveness of Ukrainian language in everyday life or in business. The big part of population continues to use Russian when they are searching and buying goods and don't pay attention to political and social factors. Therefore, a complete rejection of the Russian-language content is currently not feasible. Even for Internet resources that narrowly focused on the western regions, the lack of Russian-language content may adversely affect the attraction of users.

Therefore, the best solution for quality promotion of websites currently demands the multilingualism. Moreover, in a period of a conflict it is important to use Ukrainian language as default and Russian as a minor for the purpose of avoiding negative perceptions of the Ukrainian and Russian-speaking users. This strategy allows achieving maximum effect from search engine optimization and minimizing the risk of refuses of users on websites.

On the other hand, companies need constantly to monitor public attitudes of the use of languages because they are dynamically changing. This will reduce the potential user dissatisfaction and effectively engage them to interact.

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CONCEPTUAL MODEL FOR ECONOMIC EVALUATION OF INNOVATIVE TECHNOLOGIES

Abstract.The conceptual model for economic evaluation of innovative technologies that focuses on the consumer value thereof has been developed. Contemporary role and significance of the value that is laid in the technology and is a condition for their innovativeness have been substantiated, a set of tools for practical implementation of the proposed model established. The model enables evaluators to take into consideration the parameters of the impact of technology due to current market phenomena and trends, which helps to make better management decisions on the strategy for development of innovative technologies**.**

Key words: innovative technologies, concept for evaluation, value, cost.

Problem statement. Dynamic progress of the technologically leading countries of the world highlights the increase in the level of intellectualization of technologies with simultaneous technological singularity. Announcement about the beginning of the 4th Industrial Revolution (Davos, Switzerland, 2016), implementation of the concept of creative economy, significant increase in the share and importance of intellectual property in the structure of technologies and other factors related thereto have contributed to the need for the world countries to review existing approaches to understanding the conditions and peculiarities for generation and spreading of innovative technologies.

One of the key factors of the present sixth technological system and the 4th Industrial Revolution is artificial intellect which is convergent with all spheres of human life. The world analytics trends [49, 50] highlight the rapid development of artificial intellect and methods for processing databases in all technological areas. Intellectualization of technologies extensively began to determine their innovativeness, and, accordingly, consumer value. Therefore, the problem of intellectualization of technologies and objectivity in evaluating them as intellectual property objects (IPOs) are increasingly being the subject of special attention of the specialized organizations worldwide. In particular, within one of the three subindexes of the *Global Competitiveness Index* proposed by The World Economic Forum, which is covered in the Global Competitiveness Report 2016–2017 [49], is a *sub-index of factors of innovativeness and creativity* (Innovation and sophistication factors subindex). The key role of subindex's components is to represent diverse aspects of technology intellectualization. The

Global Information Technology Report 2016 [50] of the same organization focused on the exponential growth of the role of knowledge that has been materialized in high technology and tools for their stimulation, etc.

Intellectualization of technologies is objective and irreversible phenomenon which determines studying the specifics of new economic instruments to work therewith, among which the priority belongs to the sphere of evaluation of innovative technologies. The importance of intellectualization-dictated new approaches to evaluation of technologies is explained by current increase in their intrinsic value. In turn, this will determine the choice of methodological approaches in the cost estimation of innovative technologies.

World scientists and practitioners have already developed a considerable number of guidelines and models for evaluating innovative technologies that meet current market demands. Because these models are mostly local in nature, designed for specific technology enterprises or even for certain technologies. The value laid down in innovative technologies is based on the nature of the market in a particular country at certain time. However, in the Ukrainian realities, it is not always possible to apply the world experience in technology evaluation, which is explained by the peculiarities of the domestic R&D system and the transfer of their results. Therefore, integration of Ukraine into the community of technologically developed countries of the world and the innovative type of development declared requires for revision of existing approaches to evaluation of innovative technologies that would actualize the present role of the value laid down therein.

Analysis of recent researches and publications. Innovative technologies are now the main drivers of competitive development of the world. Numerous reports of scientists at the conferences of the World Intellectual Property Organization ([52]) on the issues of economic evaluation of innovative technologies and, in particular, evaluation of intellectual property within them, indicate the relevance and scientific and practical significance of this problem.

Significant works in the field of economic evaluation of innovative technologies are presented by foreign scientists. In particular, J. O. Lanjouw, A. Pakes, J. Putnam [40] evaluate innovative technologies in terms of patent evaluation, which, as intangible assets, determine the cost of innovative technologies. P. H. Sallivan in his work [46] considers evaluation of the technology value determined by intellectual contribution within the framework of intellectual capital management on the basis of the double complexity paradigm (*the two-paradigm complexity*): problems of creation and removal of the value. M. Dobija, J. Barburski and the authors [5] study this problem based on the human capital theory, understanding the capital as human ability to perform work and generate value added, on the basis of which scientists propose approaches to measuring human capital.

The research of methods of economic evaluation of innovative technologies is the subject of works of the scientists, namely: N. P. Archer, F. Ghasemzadeh, P. Board and other authors [26], D. Andriesson [25], A. Brooking [28], L. Edvinsson and M. S. Malone [31], R. S. Kaplan and D. P. Norton [39], S. Kamiyama and authors [38], B. Livson [41], D. H. Luthy [42], K. E. Sveiby [47], T. A. Stewart [45], K. Fink [32], B. H. Hall [33], H.-J. Shiu [36] and others. Groundwork of the scientists is valuable in terms of using certain provisions for evaluation of innovative technologies. However, to be used in domestic conditions, the proposed developments require significant adaptation.

In Ukraine, despite the existing number of conceptual documents on technological development of the country (Sustainable Development Strategy “Ukraine 2020”, Concept of development of the national innovation system, etc.), in fact, no conceptual vision for economic evaluation of innovative technologies has not yet been developed.

An analysis of domestic studies and publications has shown that, for the most part, attention is paid to the aspects of evaluation of innovative technologies from certain specialized points. In particular, evaluation of innovative technologies in the context of management thereof is the subject of the following works: K. Ya. Vodianko

[4], S. M. Illiashenko [8], P. H. Pererva and I. V. Hladenko [14], O. M. Yastremska [24] etc. Evaluation of technologies in terms of the objects of intellectual property right is considered by: S. F. Butnik-Siverskyi [2], P. M. Tsybuliov, V. P. Chebotariov and authors [19]. Approaches to evaluation of intellectual capital were investigated by: M I. Saikevych [18], Y. S. Sytnyk [17], N. O. Shpak [21]. A significant contribution to the study of economic evaluation of intellectual and innovative technologies was made by V. M. Vasylenko [3], V. I. Dovbenko [29], O. Yu. Yemelianov [6], O. P. Kosenko [12].

Despite a good deal of theoretical and practical groundwork in the field of evaluation of innovative technologies, the concept has not yet been developed, and the contemporary significance of their value not duly considered. The fragmentariness of developments does not make it possible to notice that the role and place of innovation technologies in the National innovation system of Ukraine in recent years has changed having acquired qualitatively new accents. The consumer value of technologies determined by the level of their intellectualization has qualitatively new features.

Statistics show that during 2016 scientific and scientific-technical works in Ukraine were carried out by 972 organizations. Of those, 15.7 % belonged to the higher education sector [7, p. 1]. This indicates a significant scientific technical and technological potential of the domestic R&D sector. At the same time, intangible assets have small share – 2–5 % in the assets of domestic companies [9]. For comparison: with the leading world corporations such share reaches 30–40 %, and in high-tech companies 70–80 % [9].

According to the World Economic Forum [49], Ukraine has all prerequisites to generate innovative technologies. In particular, this is traced in the component of the 11th parameter of "innovation" of the global competitiveness index. In the sample of 138 countries, Ukraine gained the following values for the index components (ranking of 138 points): "innovative capacity" – 49, "level of quality of research institutions" – 50, "availability of scientists and engineers" – 29, "patent applications" – 49. Totally aggregated, the "innovation" parameter equals to 52. At the same time, in the above index, within the parameter of "business creativity", the component of "nature of competitive advantage" (indicating the nature of emergence and impact of implementation of competitive advantages as a mover for innovation development) is 109, which means the low level of implementation of innovation and technological potential of Ukraine. That is, having a considerable amount of resources for generation of innovative technologies and R&D results there is no necessary and sufficient response from technological subjects to the demands of the market environment.

This situation slows down technological progress and taking the leading positions on the international scene by Ukraine. Lack of a conceptual model for economic evaluation of innovative technologies that would meet the challenges of time is violating effectiveness of both evaluation and commercialization of technologies and management thereof. Thus, it is time for development of the conceptual model for evaluating innovative technologies that would provide a systematic view of the given problem.

Goal and tasks. The purpose of the work is to substantiate the conceptual model for economic evaluation of innovative technologies.

The object of the study is a set of components of the system of economic evaluation of innovative technologies. To achieve this goal, the following tasks were solved:

1) the contemporary role and significance of the value that is laid in the technology and is a condition for their innovativeness have been determined. On this basis, there is a need for new approaches to evaluation of innovative technologies;

2) the concept of economic evaluation of innovative technologies has been substantiated which focuses attention on the value laid down therein;

3) a set of methodical instruments for implementation of the proposed conceptual model for evaluating innovative technologies has been established.

Description of the main results of the study. Technology, like any other commodity, acquires this when two parties are available, the consumer value and the cost. Such a duality of technology is inherent in labor which is also featured by dual nature. Value and cost are two categories of economic evaluation of technologies that are mediated by mutual influence.

The value laid down in technology by a developer determines the consumer value of this technology in the form of the finished product and dictates the choice of the method for its valuation. The consumer value is the basis for determining the value of technology which subsequently becomes the basis for pricing it. The distribution function of the price indicates that in case of price deviation of cost (for example under the influence of demand and supply), there is a redistribution of the product value between economic entities, sectors, etc. Based on such distribution, the existing technologies can acquire new values. The stimulating function of the price, due to the specifics of the economy of each country, affects manufacturers' aspiration to increase their revenues minimizing cost of their product or expanding output volumes at the existing (conditionally balanced) level of the product price in the industry. It stimulates the search for ways to improve the technology characteristics, and nowadays the main one is intellectualization. Popular point is that the consumer, first of all, buys the value that can be derived from the use of technology, and not the technology as such. Thus, in this way, the value has an impact on the value of technology which essentially determines the course of scientific and technological progress.

The issue of cost evaluation of technologies is more studied, while the value assessment has been researched relatively less than is required by the contemporary market. The reason for this is low rate of sharing and perception by scientists and practitioners of contemporary views about the role of value in the processes of generation of innovative technologies at the macro level, and significant level of subjectivity of value assessments and complexity in researching at the micro level. In general, the value as an economic category has not been sufficiently studied at this time (in particular, the mechanisms of acquiring value by both intangible and tangible assets still remain undeveloped).

The contemporary role and significance of the value in the system of evaluation of innovative technologies

Mainly, the innovativeness of technology is determined by the intellectual contribution of developers during R&D processes. The main subject of technology intellectualization is a *"knowledge-worker"* whose intellectual development and competencies are the basis for development of technologies with the consumer value of high level. Productive implementation of technologies with a significant level of value ensures stable competitive positions of companies, industries and regions in the future. At the same time, due to the value, the cost of innovative technologies provides for an increase in the capitalization level for companies (namely, *Alphabet Inc., Amazon.com, Apple Inc., Foxconn, Hitachi, Huawei, IBM, Microsoft, Lufthansa Samsung Electronics, Sony, Panasonic,* etc).

Value, as an economic category, determines feasibility of implementation of a particular choice among the set of possible ones, being one of the main criteria for substantiation of the product value. Value is the basis for further solving economic issues of ownership, distribution and reproduction. The contemporary view of the evaluation of innovative technologies requires for understanding of the principles of value origin laid down therein.

The criterion of value in various times was one for understanding economic processes. Basis of the theory of value is philosophy of I. Kant, due to which G. Lotze in the 60's of 19th century described the notion of value in the categorical sense for the first time.

Economic theories that describe the value and its role during the valuation of goods, from the 18th century to today include the following: the labor theory of value (W. Petty, A. Smith, D. Ricardo, K. Marx et al.), the theory of cost (F. Quesnay, R. Torrens, J. Mill) and the theory of factors of production (J.-B. Sey and

F. Bastia), the theory of marginal utility (K. Menger, F. Wieser, E. Ben-Bawerk, W. Jswans, A. Marshall, L. Waldras, V. Pareto et al.), the theory of supply and demand (J.-B. Sey, G.-D. McLeod, K. Menger, F. Wyzer, E. Bem-Bawerk). Nowadays, the informative theory of value (D. Bell et al.) according to which the main source of value is mostly intellectual, living work equipped with scientific knowledge becomes relevant.

According to J. Howkins [35], the current leading factor for emergence of technology value is creativity, intelligence, talent, etc. (the concept of creative economics), rather than traditional resources (land, labor, capital). In fact, use by technology developers of their creative imagination leads to the increased value in the technologies they create. Originality and creativity are those factors that a knowledge-worker shall generate during development of technologies. The higher the level of knowledge that a knowledge-worker employs in the technology, the more rapid the new knowledge will emerge, which will become the basis for producing the more effective technologies and will contribute to strengthening the competitive positions of the country, regions, companies, etc. In this context, the value becomes the hallmark of economic progress.

D. Bell, as one of the founders of the informative theory of value, notes that if knowledge in its systemic form is used in practical processing of existing industrial resources, then it is it, and not the labor, that is the source of value [27].

One of the sources of the value origin is the nature of technology synthesis as an intellectual property object (IPO), that is, its composition of simpler IPOs. The synthesis promotes technology to generate new values, enables to achieve the result that cannot be possible by using certain IPO as its components.

The Concept of Society 5.0 [44] updates the role of value in a fundamentally new format. Society 5.0 is a concept adopted by the government of Japan for superintellectual society designated to form “smart” society. This is a new social paradigm aimed at replacing the information society paradigm (Concept of Society 4.0). One of the foundations of Society 5.0 concept is that virtually all of the important processes in physical space are mediated by collecting data that are then digitized and sent to virtual space, where being analyzed by artificial intellect the decisions are made which, in turn, appear in the world of physical things. Based on the fact that this concept involves spreading of the Internet of things and advancement of work with huge amounts of data and artificial intellect, the role of value, as an economic category has increased significantly.

Digital economy (term introduced in 1995 by D. Tapscott in [48]) is one of the answers to demographic changes in the world. Based on the fact that population of the Earth is growing and, correspondingly, its needs are increasing, but natural resources are exhausted, humans in order to live and develop require for a new technological step to solve this problem. The foundation for the digital economy is presented by intellectualized technologies that ensure its main components: supporting infrastructure, e-business and e-commerce.

The theory of innovations (first described by J. Schumpeter [22], 1911) which is the basis for understanding the processes for generating and spreading innovative technologies, identifies such areas of knowledge as: heuristics (describes the processes of creative thinking), inventics (describes the processes of implementation of an idea) and innovatics (describes the processes of implementation of innovations). The main driving force of generation of innovative technologies within each of these areas of knowledge is the value added by human intellect.

From the view of evaluating spread of the innovative technology value, it is important to consider the diffusion of innovations. For the first time, the diffusion of innovative technologies was described by T. Hägerstrand [34] within the theory of spatial diffusion of innovations. According to systematization by E. Rogers [16], diffusion of innovations includes the following five stages: 1) knowledge, 2) conviction, 3) decision, 4) implementation, 5) confirmation. Given these steps, you can evaluate the value chains and manage such data when evaluating technologies.

Modern approaches to evaluation of innovative technologies involve considering a number of effects generated by technologies. In particular, the convergence effect (first described by J. Tinbergen [51] and co-authors within the convergence theory), the spillover effect (described by J. Monnet [43] in the concept of "spillover" within the neofunctional theory), the multiplicative effect (the theory of multiplicative effects of J. Keynes [10]), the effect of synergy (the synergistic theory described by R. Eggertson in [23]), etc. These effects arise during the transfer of value from the technology to the consumer.

Generalization of the factors actualizing the role of the category of value of innovative technologies and the resulting phenomena are given in Table 1.

The value intellectualizes the technologies it is inherent in. The higher level of intellectualization of technologies, the broader opportunities they open for business. Expanding business opportunities, in turn, leads to the expansion of needs and horizons for creating a new value. If this phenomenon is correlated with technological singularity, then the intervals between the rounds of value generation will reduce with time, but the amplitude of the values and business opportunities will increase. This is visually represented in Fig. 1.

Table 1

Modern economic theories, concepts and phenomena that actualize the role of value laid in innovative technologies

Economic theories, concepts	**Key features that update the category of value**	**Phenomena caused by growth of the role of value**
Theory of innovations	Branches of knowledge (heuristics, inventics, innovatics) determine the processes of generating the value, its development and conditionality by the course of scientific and technological progress.	Globalization Virtualization of the economy Massification of education E-education New forms of business Ecological and economic movement Social turbulence
Theory of spatial diffusion of innovations	Diffusion of innovations	
Informative theory of value	Labor supported by knowledge, intellectual work	
The 4th Industrial Revolution. The 6th technological order	Intellectualization of technologies	
Concept of creative economy (J. Hawkins)	Intellect, creativity, talent	
Concept of Society 5.0	Superintellectual society	
Digital economy	The growth of value is based on intellectualization of components of digital economy (supporting infrastructure, e-business and e-commerce)	
A group of theories that describe the effects from the degree of value laid into innovative technologies	Convergence effect, spillover effect, multiplicative effect, synergy effect, etc.	

Systematized by authors

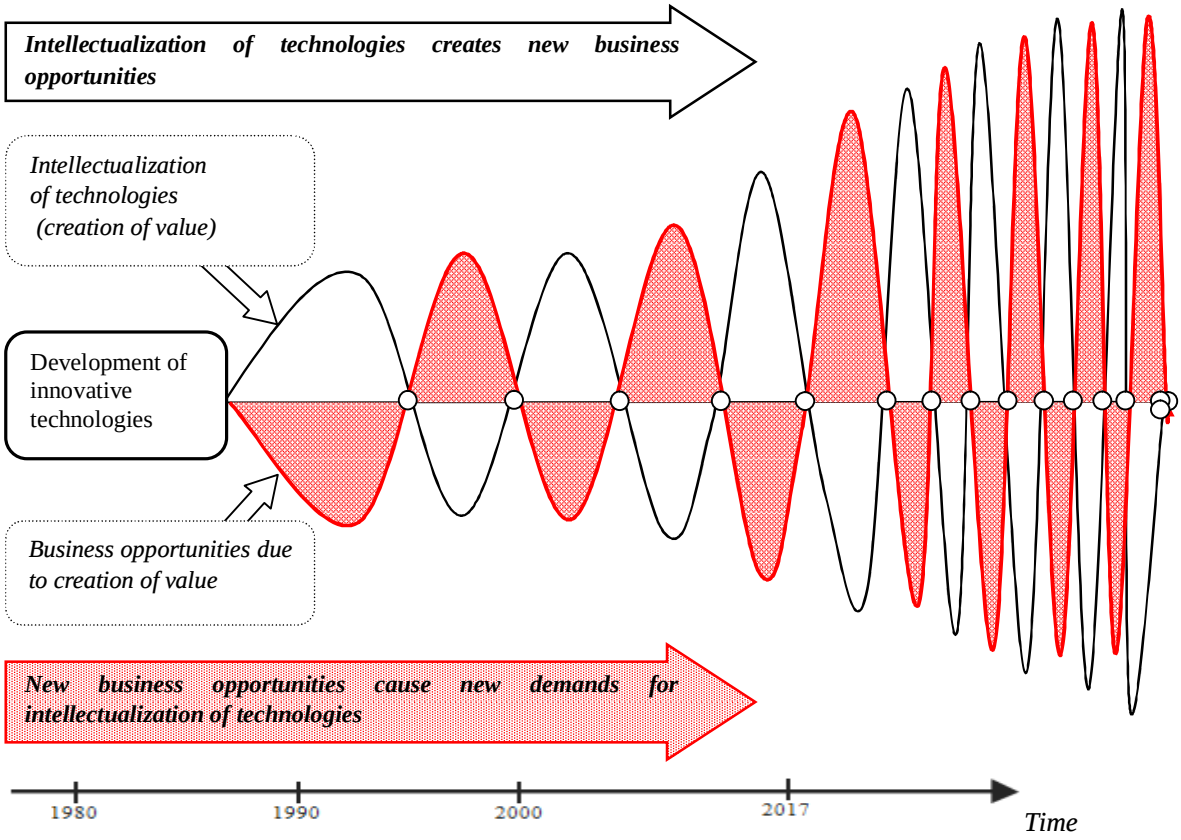


Fig. 1. Relationship between development of the value embodied in innovative technologies and the business opportunities created by it. Developed by authors.

In the framework of economic evaluation of innovative technologies, the proposed approach to the value, as an economic category, will be able to focus on the parameters dictated by contemporary market phenomena. In contrast to the existing approaches to evaluation of innovative technologies, where the key role is assigned to the analysis of cost indicators, this approach also considers the evaluation of parameters of the consumer value of intangible assets in the technologies from the view of determination of their future efficiency.

The concept of economic evaluation of innovative technologies

The principles of evaluation of innovative technologies are set out in the Civil Code of Ukraine, the Law of Ukraine "On evaluation of property, property rights and professional appraisal activity in Ukraine" Accounting Standards, International Accounting Standards, International Standards on Evaluation and National Standards No. 1 ("General Principles of Evaluation of Property and Property Rights") and No. 4 ("Evaluation of Intellectual Property Rights"). An independent appraiser certified by the State Property Fund of Ukraine is entitled to carry out the evaluation.

The nature of intellectual work is features by nonadditivity, synergy, which complicates the objectivity of evaluation of innovative technologies. Determination of the moment when an intangible asset in the technology (patent, copyright certificate, etc.) acquires consumer value often becomes a high-cost task. A separate problem is the fact that in Ukraine currently there is scarce of highly professional appraisers of innovative technologies.

Prerequisites for evaluating innovative technologies are a set of economic laws, theories and concepts (namely, listed in Table 1), which form the paradigm of contemporary innovation development and determine the role of value in the technology.

Before evaluating the innovation technology, it is necessary to clearly establish the need for evaluation, which may be, for example, a decision to be made on the appropriateness of investment in one or another technology, an IPO to be included in the balance sheet of an entity, agreements of any nature (licensing, purchase and sale, franchising, etc.) to be entered into, when the company's value and other operations with IPO is determined.

Evaluation of innovative technologies should take place based on the relevant principles – theoretical provisions for evaluation of innovative technologies established on the basis of the general principles of evaluation. The need for evaluation of innovative technologies determines the aim, tasks and strategy of evaluation.

Organizationally, evaluation of innovative technologies is recommended to be made by the following main stages: 1) preliminary evaluation of the technology readiness level (before commercialization); 2) evaluation of value and cost parameters of the technology; 3) evaluation of the processes caused by introduction of the technology to the market. The scheme for the proposed conceptual model of evaluation innovative technologies is shown in Fig. 2.

According to "Appraisal Methods for Intellectual Property Rights" [15], "in the case of determining the value of intellectual property rights as assets of a business entity of governmental or municipal sector of the economy, such an evaluation is preceded by the preparatory stage at which the inventory is carried out, with detection of proprietary intellectual property rights not registered in the accounting." Subsequently, according to the results of detection of IPOs and in accordance with Article 421 of the Civil Code of Ukraine [20], the subject of intellectual property right and, in accordance with Article 424, its proprietary intellectual property rights shall be determined. Such actions are the basis for making further decisions regarding this technology.

Thus, guided by the principles of the current normative legal field, at the stage of preliminary evaluation, we specified the aspects referred to in [15]. Note that as it comes to the economic evaluation of technologies, then no matter what further action on this technology was planned, commercialization is the key aim for such evaluation. Estimating the level of readiness for the technology at this stage is determined by its readiness for commercialization.

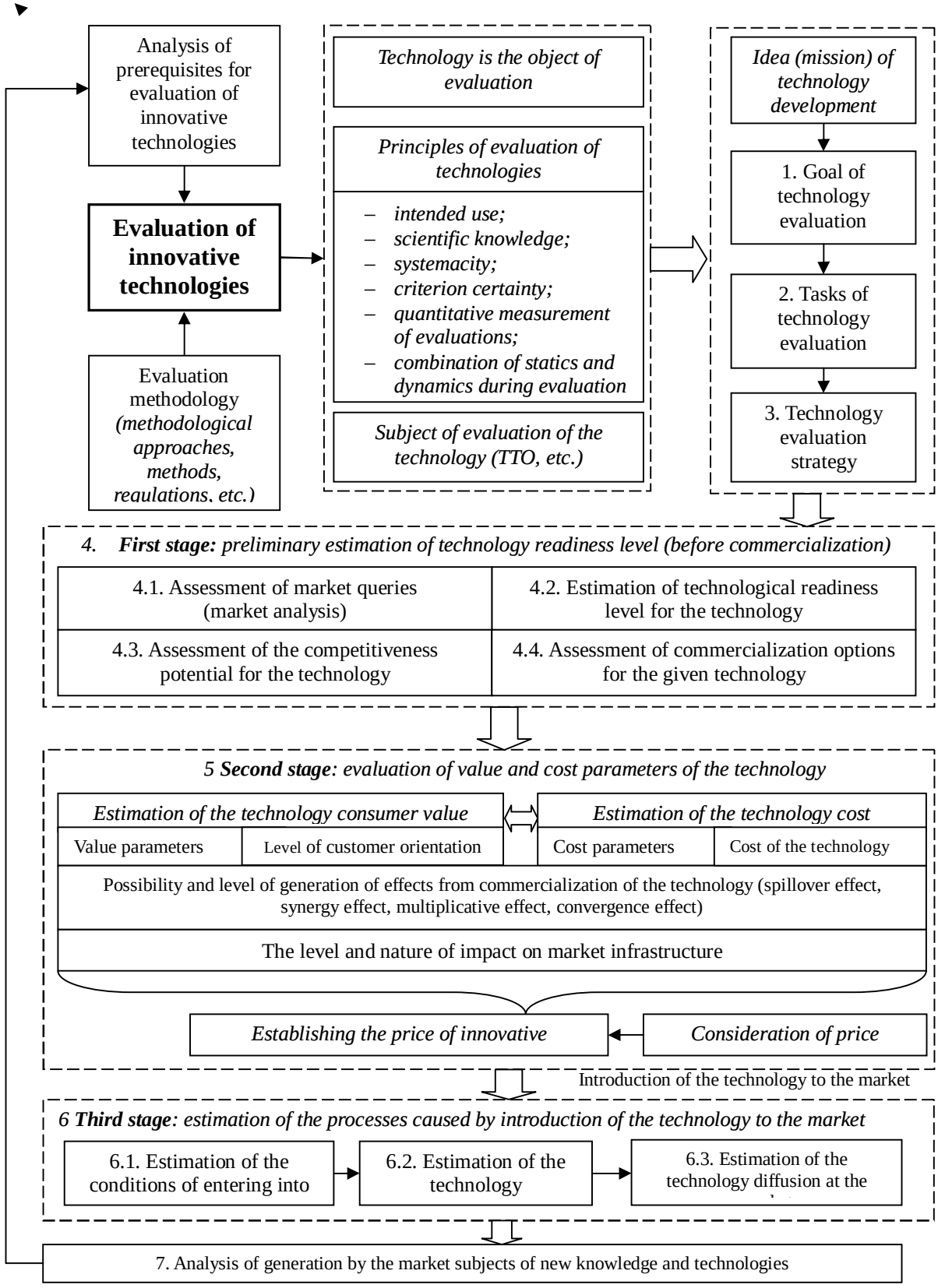
By mediating by means of technology the idea of commercialization, one can determine its value in terms of market demand (level of competitiveness). Thus, at this stage, it is necessary to carry out market analysis and assess technological readiness of the technology. At the same time, it is necessary to assess the competitiveness potential of the technology, and, based on the evaluation carried out, analyze options and alternatives for the effective commercialization of the technology in question.

When evaluating innovative technologies at the preliminary stage, it is advisable to use the methodological approach of NABC, developed by the specialists of the Stanford Research Institute (*N – need*, the need dictated by the market; *A – approach*, the approach proposed to meet this need; *B – benefit*, the revenues planned to be received in result of commercialization of this technology; *C – competition*, the competitors to this technology). By applying this approach to the evaluation of innovative technologies at this stage, it is possible to obtain a preliminary conclusion on the demand for the technology in the market and to preliminarily outline evidences of the value generated by this technology.

The more precisely defined components of this stage have been tested and covered in the works [11, 13]. For each of the components, a number of author's evaluation methods have been developed that enable to set an integral indicator of the level of the technology readiness.

At the second stage it is reasonable to assess the value and cost parameters of the technology by quantities. An important aspect of evaluation of the value parameters is forecasting and consideration of various types of effects from introduction of innovative technologies to the market and their diffusion. This allows to substantiate with the higher level of accuracy the cost parameters of the technology and to form the price. Having assessed the prospects for the particular effect, for example, that resulting in manifestation of the consumer value of this technology in related industries, the appraiser may add value to the price of the technology being evaluated.

Conceptual Model for Economic Evaluation of Innovative Technologies



Note. Key to symbols:
⇨ *main sequence of evaluation;*
→ *interrelationships between aspects of evaluation;*
⇔ *mutual influence of the aspects of evaluation. The dotted line shows the evaluation blocks.*

Fig. 2. Conceptual model for economic evaluation of innovation technologies. Developed by authors.

At this stage, it is necessary to pay attention to the impact of the technology on market infrastructure – business entities that servicing markets of various types and will determine conditions for effective functioning of this technology. In this context, the prospects of business opportunities that will be brought by the value laid in the technology are evaluated. It should be noted that most markets are imperfect, market supply and demand are not balanced. These and other reasons can affect both the cost and value indicators during evaluation of innovative technologies.

Note that economic evaluation of the value and cost parameters of the innovative technology is not just a total of these estimates. In practice, these parameters are closely interwoven and have reciprocal effect. Understanding and taking into account their convergences makes it possible to estimate more objectively the cost of innovative technology and, accordingly, choose more precisely the method of pricing and form the price at which this technology will be commercialized.

At this stage, when evaluating the IPOs, those methods are used that can be divided into two main groups [1, 3, 45]: 1) measurement methods that propose indicators that could give managers a more complete picture of intellectual assets of their companies; 2) methods of evaluation aimed at assessment of intellectual assets of the company in monetary terms.

For the quantitative measurement of IPOs in the "Methodology of evaluation of proprietary rights of intellectual property" [15], it is recommended to use the methods in terms of income, cost and comparative approaches, as well as their combination, according to the needs of the assessment situation.

The most popular methodological developments worldwide that can be used to evaluate innovative technologies (namely, IPOs in their composition), have been systematized in Table 2.

Table 2

Methodological basis for evaluation of innovative technologies

Methodological developments	Description
1	2
Market approach (includes the comparative sales method)	Compare the IPOs with analogues, by relevant features, comparably in time and by the markets, etc.
Cost approach (includes the following methods of: cost replacement, recoverable cost, determination of initial costs)	Determines the current cost of reproduction or substitution of the IPO
Income approach (includes the methods of: exemption of royalties, discounting cash flows, direct capitalization, express evaluation, surplus profit, "rule of 25 %')	The economic value of the IPO at this time point is determined by expectations of revenue from its use in the future. The cost of the IPO is equal to the discounted revenue flow expected to be received during its use.
Methods of direct estimation of intellectual capital	
Technology Broker [28]	The method is based on the perception of intellectual capital as a set of four key elements: market assets, intellectual property, human assets and infrastructure assets and includes 20 auditor's questions. It is a method of identification, evaluation, verification and management of the company's intellectual capital.
Method of evaluation of patents been citation weighted (*Citation-weighted patents*) [33]	The efficiency of intellectual capital is measured by the level of R&D impact on the set of specific coefficients (in particular, by the ratio between the number and value of patents and sales volume) that characterize the patents of the business entity.
The Value Explorer [25]	The method is based on the valuation of five types of intangible assets: 1) own assets and assets being at the business entity's disposal; 2) skills and implicit knowledge; 3) culture and values; 4) technologies and explicit knowledge; 5) process management.

Continuation of the table 2

1	2
Methods of market capitalization	
Tobin's Q Ratio [37]	It connects the market value of the company, as measured by the market rate of its shares, with the recoverable value of its assets. This ratio superficially reflects the aspects of the IPO.
Methods for determination of return on assets (ROA)	
Economic value added (*EVA*) [36, 45]	The profit earned by the company should exceed the fee for using capital (own, borrowed), through which this profit was received. EVA points to the company's intellectual capital efficiency.
Income from Intellectual Capital (*Knowledge Capital Earnings*) [32]	It is determined as the ratio of the value of normalized profit (minus returns on tangible and financial assets) to the discount rate of knowledge capital
Intellectual Capital Value Added Coefficient [38]	The coefficient is intended to measure efficiency of the intellectual capital and the capital which is involved from the view of the value created thereby. It is determined based on the ratio of components: capital employed, human capital and structural capital.
Scoring methods	
Skandia Navigator [30]	Intellectual capital is evaluated by analyzing 164 parameters which include the following components: finances, consumers, processes, updating and development, human resources.
Intangible Asset Monitor [47]	Based on the company's strategic goals, it defines indicators to assess four aspects that can be derived from the value generated by intangible resources, including: 1) growth; 2) updating; 3) use / efficiency; 4) risk / stability reduction.
Value Chain Scoreboard [41]	Matrix method that involves grouping of non-financial parameters into three categories according to development cycles: 1) opening / training; 2) implementation; 3) commercialization.
Balanced Scorecard, BSC [39]	According to BSC, effectiveness of the company's activities is measured using parameters by such main directions: 1) finance, 2) consumers, 3) internal business processes; 4) training and development.

Systematized by authors on the basis of [1, 45]

Considerable number of existing methodological approaches to evaluation of innovative technologies like IPOs is the result of the complexity of technologies that contain IPO data, on the one hand, and the limited applicability of existing methods on the other hand. The diversity of approaches highlights the difference in the author's perception by scientists of the IPOs nature and the goals of their assessment.

From the point of view of accounting, evaluation is a specific method by which accounting elements are transferred from the physical form in cash to be reflected in the accounts, and, accordingly, for taking management decisions. Choice of a methodological approach depends on the specifics of the object evaluated and the situation when the evaluation is carried out. The evaluation of IPOs in innovative technologies is carried out solely with a specific purpose, the results of which cannot be used for other purposes.

The third stage of the conceptual model involves evaluating the processes that mediate introduction of the technology to the market (commercialization) and its distribution on the market (this is, in particular: assessment of the conditions of entering into agreements with

counteragents, assessment of commercialization itself (or other economic transactions with the technology) and assessment of market diffusion for the technology).

Under diffusion of innovations, the effects of various nature may often occur in the market, which may result in new knowledge that been subsequently transferred into new technologies. The analysis of generation of new knowledge and technologies by the market players is important, since it provides a set of data that can be considered when developing and evaluating future technologies (when determining the consumer values of new technologies).

The research of the problems of evaluation of innovative technologies from the given points allows to focus on the moment of generation of the consumer value by technologies. In turn, this enables to increase the accuracy of cost evaluation of innovative technologies. The conceptual model proposed will enable technology appraisers to increase the objectivity of the evaluation results and substantiate the processes of implementation of innovative technologies, and the managers of the companies – to increase flexibility of management decisions.

Conclusions and prospects for further research. The tendencies of the world and national economy dictate the need for changes in approaches to economic evaluation of innovative technologies. Current foreign approaches and methods can be applied in domestic conditions fragmentarily, and the domestic ones require for significant revision.

The proposed conceptual approach to evaluation of innovative technologies, unlike the known ones, is based on the contemporary role of value, which allows to focus on the parameters caused by the current market phenomena and trends. This approach to evaluation of innovative technologies, besides the cost parameters, focuses on those of the consumer value of intangible assets within the technologies. This allows them to determine more accurately their future performance.

Application of the proposed conceptual model for evaluation of innovative technologies makes it possible to eliminate the one-sided evaluation results, in contrast to well-known approaches that focus mainly on cost indicators. This will contribute to improvement of pricing the technologies, impartial evaluation of the structure of tangible and intangible assets as part of the technology, reduction of errors under forecasting the market diffusion by technologies, etc. Altogether, this will contribute to better management decision-making on technology development. An additional advantage of this approach is an opportunity to take into account not only the results of technology transfer, but also to calculate the effects obtained (spillover effect, effects of synergy, convergence, technology multiplication, etc.) and, accordingly, to evaluate business opportunities that they create.

The problem of impartial evaluation of innovative technologies is not so easy either from the theoretical standpoint, or in practical sense. The subjectivism of such evaluation is often evident which requires for improvement of the existing methodological toolkit and is the subject of development in our further scientific works.

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THE EFFECT OF GLOBALIZATION FACTORS ON THE SELECTION OF MANAGEMENT TECHNOLOGIES

Abstract. The influence of globalization trends on the choice of management technologies with the consideration of both objective factors of global progress and subjective obstacles and determinants of modern development at domestic industrial enterprises is researched. Emphasis was placed on the activities of enterprises of the oil and gas complex. The modern management technologies are analyzed, which allow to solve modern problems and are based on modern achievements of management science. It is highlighted that adaptation to modern market relations in the energy sector provides the activation of relevant areas of activity and the use of appropriate modern management technologies, for example, Benchmarking, BSC, business process reengineerin, Supply Chain Management, Outsourcing, Consumer Segmentation, Mission and Vision Formation, Cost Optimization, CRM, Budgeting, Strategic Planning, Strategic Alliances, Mergers and Acquisitions, Knowledge Management, Key Competences, Human Resources Management Concept, TQM, Change Management, Satisfaction and Loyalty Management, Scenario planning, Innovation; Analytical activity.

Key words: globalization trends, management technologies, industrial enterprises, oil and gas complex

Problem statement

Modern management technologies are based on a set of forms, methods, methodologies and practical experience of solving issues directed to the development, adoptation and implemention of effective management decisions. In turn, the choice of management technology requires taking into account the current trends of development, in particular the challenges of globalization, based on such determinants as scientific and technological progress, competitiveness, legislation, strategic documents of the country's development as well as industry and individual enterprise's development.

The professionally prepared decision taking into account the relevant management technology increases the possibility of achieving the effectiveness of the activity. The technologies of management developed today allow to make decisions in various fields of activity. However, the choice of management technologies requires taking into account not only an adequate set of resource support and operations as well as the integration of various elements of the management process, but also a system of rules and procedures that regulate their use and interaction to achieve their goals. This approach allows to take into account the influence of internal and external environment, management style, communication processes, the complex of the administrative and economic instruments operating at the enterprise implementing of the goals and objectives for enterprise development.

In the light of changes that accompany the activities of the oil and gas industry today, an important issue is the study of the impact of globalization on the choice of management technologies, which will take into account the current challenges of development and select

exactly those instruments that are in line with the situation in the industry.

Analysis of recent research and publications

The questions of globalization are widely covered in the writings of foreign and domestic scientists, in particular Z. Bauman, Z. Brzezinski, D. Lukyanov, A. Halchinsky, V. Voronkova, O. Bilorus, M. Zgurovsky [1–7]. A wide range of problems of the development of the industry are considered in the writings of Ye. Kryzhanivskyi, V. Petrenko, O. Dzoba, L. Goral, I. Chukayeva [8–10]. The study of management technologies is devoted to the works of V. Verba, A. Ustenko, V. Lesik [11–13].

Familiarization with literary sources allowed us to conclude that much attention has been devoted to issues that highlight some aspects of the topic of this study. Taking into account such peculiarities as the transformation processes in the oil and gas industry, the scale of the changes due to the political and economic situation in the country, the strategic importance of the tasks in the field of energy security, energy efficiency, the competitiveness of the Ukrainian economy, it is important to consider the current direction of research in modern management technologies implementation. This process is based on consideration modern trends in development and those objective changes that are caused by the processes of globalization.

Research objective

The purpose of this publication is to study the impact of globalization on the choice of management technology for domestic companies, taking into account both objective factors of global progress and subjective obstacles and determinants of modern development nowadays.

Research material

Making and implementation of management decisions in the conditions of European integration processes and globalization trends requires awareness and taking into account the peculiarities of international management experience. In the conditions of world economic, political and cultural integration and unification, managers must take into account the effects of globalization, which are linked to the international division of labor, global-scale migration, human and productive resources, standardization of legislation, economic and technical processes, and convergence of cultures of different countries. As a result of globalization, the world becomes more connected and dependent on all its subjects. There is an increase of the number of common problems for groups of states as well as the number and types of integrated entities [14].

All of this requires the use of modern management technologies that will allow to solve the problems that are actual in time and are based on the contemporary development achievements. In particular, the following main trends related to globalization are highlighted and are needed to be taken into account in the process of implementation of management technologies in the domestic practice of enterprises of the oil and gas complex.

Science and technology: the development of the Internet and other components of the computer, information technology, as well as GPS; the development of production technologies that allow to use the alternative energy sources, the production of substitute products of natural resources, and save and effectively use of the planet resources, reduce the negative technogenic impact, – these are challenges of the domestic enterprises due to new challenges of development through the activation of innovation and investment activities. The introduction of international quality management systems, adherence to international standards, and production of competitive products could be realized not only on local, regional and national markets, but also on international ones. Modern information technologies enable the implementation of global international agreements, the transfer of technologies, which expands the possibilities of passing through national borders, accelerates the pace of these agreements implementation and the integration of domestic enterprises into the international division of labor.

As a result of the implementation of the above-mentioned provisions, there is an increase in the integration and interconnection of the activities of sectoral enterprises. Is is concerning to the implementation of the provisions of international legislation in the energy sector of the economy as well as to the covering of all spheres of economic life, including the exchange of goods and services

across national borders through trade and joint activities, ending with complex organizational changes that accompany the processes of reforming the domestic fuel and energy complex.

Management: the management of modern production and the commercial sphere requires the consideration of both national and international regulations, familiarization and participation in the work of international and transnational institutes, taking into account the experience of working in international companies. The reform of the domestic fuel and energy complex requires appropriate changes in the corporate governance, in particular through the implementation of international principles of corporate governance.

Demographic trends: today we have tendencies of population declining in developed countries, the increasing of its number in developing countries, activation of migration processes. Such tendencies require following:

– a balanced policy of personnel management at the enterprise;

– reducing the dynamics of migration of highly skilled specialists;

– introduction of modern technologies of personnel hiring, motivation;

– increase of productivity at existing enterprises;

– introduction of modern training techniques and advanced training of both the management and executive staff of branch enterprises.

These trends are usually interdependent and can not be considered separately. The development of science and technology leads to the intensification of production processes, international co-operation, technology transfer, international technical cooperation and the creation of integration organizational management structures. The implementation of these changes requires the following:

– highly qualified personnel,

– an appropriate policy of interest and encouragement for implementation of the necessary changes at the domestic enterprises,

– the reducing of specialists outflow to the developed countries.

In addition, advances in science and technology can have a significant impact on the development of society, reducing unemployment, increasing the welfare of the population, increasing the competitiveness of national production and the economy as a whole. Along with this, the spread of these trends within the national economy may lead to a number of problems related to the need of national market protection on the basis of protectionism, compliance with the requirements and rules of international law and standards, the intensification of competition from import analogues, with which is difficult to compete for national producer.

It should be noted that the management activity in modern conditions is intended to focus the efforts of managers at each level of management on the issues of maximizing use and strengthening the strengths and capabilities of domestic industrial enterprises to eliminate and overcome the weaknesses of their activities and minimize the threats and risks associated with manifestation trends of global development. The inherent knowledge of management science can adapt modern management technologies to the current trends of globalization and achieve goals with the necessary efficiency.

Currently, the most well-known and commonly used in foreign practice are the following management technologies: BSC, benchmarking, analytical activity, business process reengineering, change management, key competencies, CRM, customer segmentation, knowledge management, HR management, mergers and acquisitions, mission formation and vision, innovation, outsourcing, price optimization, satisfaction and loyalty management, scenario planning, brand management, strategic alliances, strategic planning, supply chain management, TQM and budgeting [8].

However, according to studies conducted by domestic scientists, not all of these management technologies have been widely used in domestic practice. In particular, the most commonly used are budgeting, strategic planning, consumer segmentation, key competencies, knowledge management, and mission formation. Consequently, there is an understanding and interest of the leadership of domestic enterprises in the application of managerial technologies for solving the problems of modern development, despite the fact that most

of the technologies mentioned are not well-known and under-studied.

In Fig. 1 the key tasks of the oil and gas industry development are presented, for which it is proposed to consider modern technologies of management.

One of the global problems of our time is the lack of energy resources. Power-consuming countries are powerful states that dictate the conditions for their potential consumers. In such circumstances, energy policy should be formed on the basis of the principle of energy security. The dependence of energy security on the specific factors of its provision can be represented by the formula formed on the basis of the source [15]:

$$E_s \leftrightarrow E_{ef} + E_{ow} + D_m + R_s + I_{eu}, \quad (1)$$

where: E_s – energy security; E_{ef} – energy saving and energy efficiency; E_{own} – own energy resources (coal, natural gas, oil, biomass + other renewable energy sources); D_{im} – import diversification; R_s – strategic reserves; I_{eu} – Integration into the EU energy space (interconnected and synchronized energy networks).

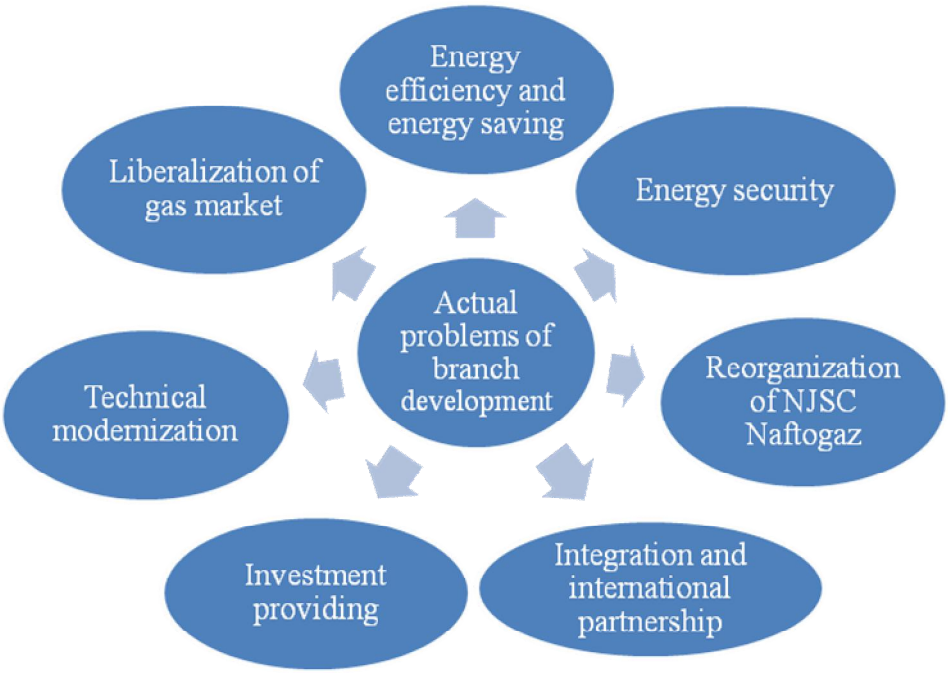

Fig. 1. Issue of the first-rate solution for the development of the oil and gas industry (formulated by the authors).

In Ukraine today all the factors of the given formula are relevant. Considerable attention is paid to the issue of reducing gas consumption. A big role is assigned to the issue of diversification of energy resources. Today, the gas shortage in Ukraine is being replenished at the expense of physical reverse flows that relate to the import of natural gas from the West, that is, the reverse direction of gas flow in relation to the existing pipelines projected at the initial stage. Reverse flows of gas to Ukraine are from Poland, Slovakia, Hungary, Norway. Undoubtedly, the search for diversified sources of energy resources supply is an important step towards increasing Ukraine's economic and political security, considered that Ukraine has been supplying more than half of imported gas to Russia since recently. Activities in this direction should be continued, since, according to experts, energy supply solutions should provide Ukraine with imports of one source of not more than one third, ie 15–20 billion m^3, and taking into account the payment for transit of Russian gas, it is 10–15 billion m^3 [16].

The potential of diversification expands the development of unconventional sources of gas supply, in particular liquefied gas, as well as the extraction of shale gas in Ukraine.

It should be noted that the energy policy of Ukraine is harmonized with the requirements of the EU energy space. According to the Third Energy

Package, diversification of energy sources will lead to the emergence of a competitive gas market in Ukraine, which will operate according to the same principle as in the EU. That is, every consumer will have the opportunity to choose a supplier, and each supplier will be able to choose a circle of consumers.

Implementation of the principles of energy security policy at the enterprise level requires taking into account the world experience in solving this problem. Economic development of enterprises, their strategic orientation to energy independence, energy efficiency, choice of models of energy security management that are in line with the life cycle, the use of accounting and control of the use of scarce resources - this is an incomplete list of management technologies that are appropriate for enterprises in the current environment.

The current issue is the choice of management technologies based on a combination of consistent, interrelated organizational, informational, computational and computational and other operations and procedures in the process of managing functions. Implementation of modern technologies for managing economic security will allow the following tasks to be carried out:

– monitoring, forecasting, timely detection and elimination of threats to the security of enterprises;

– promptly identify the causes and conditions that contribute to causing financial and material damage, violation of normal functioning and development;

– will contribute to the formation of a mechanism and conditions for prompt response to a threat to security and the appearance of negative trends in the functioning of business entities;

– will provide substantiation and formation of the organizational system of integrated security of business entities;

– facilitate the effective elimination of personnel threats and encroachment upon the resources of enterprises in the application of legal, organizational and engineering-technical measures and means to achieve the required level of security;

– will create effective mechanisms for interaction of state structures with economic entities in matters of security;

– will contribute to the creation of a system of training, retraining and advanced training of personnel of business entities, as well as the study and implementation of positive experience in the field of corporate security acquired in the Countries of the Near and Far abroad.

It should be noted that one of the directions of implementation of energy security policy is solving the problem of energy efficiency that can not be achieved only by measures of macroeconomic regulation by setting prices for energy consumption, diversifying sources of supply, and public financing of energy efficiency programs. Despite the fact that individual companies can not control energy prices, influence government policies in the field of energy efficiency or the global economy, they can choose ways to manage energy efficiency. Enhancement of energy resource management can ensure profitability of an enterprise by maximizing the use of sources of traditional energy and renewable energy assets, thereby reducing both the cost of energy and its consumption.

The reasons for low efficiency in the industrial sector, which account for 45 % of the total primary energy consumption, include the extremely high deterioration of production assets (at individual enterprises, up to 80 %), coupled with insufficient implementation of modern production technologies, as well as the lack of accounting devices and related automated systems in the industrial sector.

Thus, Ukraine has an urgent need for the transition to energy-efficient and environmentally friendly technologies, which include, among others, unconventional and renewable energy sources. It is possible to change the situation by conducting an appropriate energy policy, improving the regulatory framework and attracting investment in the development of unconventional and renewable energy sources on the basis of foreign experience. Of course, this process is not fast, but in order to ensure the future economic growth in Ukraine, its worthy place in the European community must now intensify the solution to this pressing problem. For example, the Energy Strategy of the European Union is characterized by a focus on a 20 % reduction in primary energy consumption by 2020. The proposed measures aim

at increasing energy efficiency at all stages of the "energy chain': production, transformation, distribution and end-use [17].

Particular attention should be paid to the fact that Ukraine has a significant potential for energy saving, in particular at the level of 47.6 % of current energy consumption. Implementation of modern technologies will reduce energy consumption by almost half [18].

The harmonization of the technical conditions of the branch enterprises involves the modernization of technology and production technologies, as well as the introduction of innovative technical re-equipment projects. The desire and need to change the state of the industry requires the latest technological approaches to the transportation of gas. In particular, a real alternative to underwater pipelines is the technology of marine gas transport by compressed vehicles (CNG technology). Today, the very technology of CNG, as well as special vessels for the transport of gas in a compressed state, are under development. However, in the current situation, which is characterized by a significant change in the world situation, the depletion of the resources of deposits in traditional areas of natural gas production and the ever-increasing demand for energy in the main import markets, high energy prices, the use of new technologies for gas transport, in particular CNG technologies , became economically profitable [9]. Given the need to address the problem of delivering natural gas from the shelf of the Black and Azov Seas to the mainland of Ukraine, CNG technology is considered as promising for the transportation of gas from offshore fields, which requires further research on this area with the attraction of foreign investments for the practical implementation of CNG technology in Ukraine [19].

In today's conditions of the world economy globalization and Ukraine's accession to the European community, questions arise about the introduction of modern quality management systems at the enterprises of the oil and gas complex and, as a consequence, provided their competitiveness on the European and world markets. In connection with this, in parallel with the modernization of the production capacity of the gas transmission system, one of the priority directions of the branch enterprises's activities improvement is the introduction of modern approaches to the organization and operation of the enterprise management system, which are set out in the international standards ISO 9001, ISO 14001 and OHSAS 18001. Efficiency of sectoral enterprises and their investment attractiveness, as well as the quality of partnerships with contractors and suppliers directly are depended on the compliance of management systems requirements with international standards. The existence of a quality management system that meets the special requirements for the oil, petrochemical and gas industry, allows suppliers of products and services to gain preference in bidding procedures, to ensure reliable and continuous work of the industry. In this regard, the development of national management standards in the oil and gas industry involves the introduction of quality management systems at its enterprises in accordance with the standard DSTU ISO / TS 29001: 2010 [20].

Thus, the technical modernization of branch enterprises is associated with innovative development. This priority direction of development of the industry is determined by the objective necessity of a faster development of the domestic economy and the present state of domestic enterprises, which requires radical changes taking into account dependence "need – potential (opportunities) – solutions". The main directions of innovation development in the industry today are:

– at the macro level – the realization of long-term scientific and technological policy focused on the innovation achievements and its financial support at the expense of external and internal sources;

– at the micro level – the implementation of strategic development programs, the involvement of investors, cooperation with partners, which would allow attracting of foreign direct investment in the innovative development.

However, for the maximum realization of this potential, investments are required. The investment supply of changes in the industry is the decisive driver of transformation. In addition to weak investment attractiveness, there are limitations on investment support for change. In particular, in contrast to the domestic energy

efficiency mechanism, which is more oriented towards regulatory and institutional instruments, in world practice, more attention is paid to the financial mechanism of energy efficiency, in particular, due to the follow instruments:

– development of strategies and target programs that define the methods and timeframes for achieving certain parameters of the efficiency of the fuel and energy resources use;

– tax regulation of supply and consumption of the fuel and energy resources;

– budget support and regulation of the process of increasing the efficiency of the use of energy resources in the economy;

– investment support for projects aimed at increasing the efficiency of the use of energy resources in the economy.

Experts point out that investments in the energy efficiency of the Ukrainian industry to the average European level are needed. It is summarized that today for 1000 dollars US of products in Ukraine it is used 0.55 tons of conventional fuel, while in the Czech Republic – 0.22 tons, in Romania – 0.19 tons, in Germany – 0.15 tons. It is summarized that in order to reduce energy expenditures by almost two times, Ukraine needs about $ 25 billion. US investment in energy efficiency and energy saving projects, and some expert's estimates reach even higher figures, in particular, $ 100 billion USA [21].

Investment support should primarily focus on the innovative development of the industry, including updating the material and technical base, the introduction of modern technologies for the extraction, transportation, storage of gas. To a large extent, the actization of investment activity depends on the formation of investment attractiveness of industry enterprises. It is advisable due to:

– focus on effective areas of improvement of investment attractiveness for strategically important and innovation-oriented activities;

– increase of competitiveness of domestic production;

– Improvement of investment management by controlling investment projects in pre-investment, during investment and after investment periods;

– analysis on justification of financial reliability of investment activity;

– avoid large-scale projects due to their low mobility to innovation;

– reduction of the period of implementation and realization of the investment project.

It should be noted that the trends of globalization also affected the changes in the natural gas market in Ukraine. So, in 2014, a new law on the natural gas market was started. In 2010, the Law "On the principles of functioning of the natural gas market" was adopted, in which certain elements of the gas market liberalization were laid. But in full measure, the legal signs of market liberalization are enshrined in the new law of Ukraine "On the Natural Gas Market", which introduced the basic principles of liberal functioning of the gas market. Their implementation requires the adoption of other legislative acts in accordance with its norms. In particular, the National Electricity and Electricity Regulatory Commission approved the Gas Transport Code and the Gas Distribution Code Code, which allowed partial application of the norms in force in the EU.

However, many issues remain unresolved and require further study and further implementation. Adoption of the said law creates preconditions for the development of market relations in the gas market, in particular, it introduces market mechanisms for the supply of natural gas, differentiates deliveries, attracts foreign traders to the market. However, state regulation in the gas market remains significant, in particular the emergence of new mechanisms for regulating supplies, which are seen as barriers to liberalization and free-market trade. Specialists distinguish the following positive features of the changes that have taken place on the market [22]:

– the main features of the new model of the Ukrainian gas market are formed;

– a significant part of the normative base are developed, which is being finalized during the implementation process;

– real competition in the segment of gas supply to industrial consumers began;

– a steady tendency towards a decrease in the share of the monopolist has begun – the number of foreign gas traders supplying (willing to supply) gas to Ukrainian companies has increased;

– the first subsidiaries of foreign gas traders are appeared – residents of Ukraine.

In addition, in September 2016, the Verkhovna Rada adopted two important normative acts: “On the National Commission that carries out state regulation in the fields of energy and utilities”, and amended the Law of Ukraine “On the Natural Gas Market” regarding the reduction of the maximum amount of insurance stock up to 10 % of monthly planned deliveries.

However, this is not enough for tangible changes in the industry. The following issues are required to be resolved: making all necessary changes to a number of laws of Ukraine; development of the necessary sub-legislative (normative) acts necessary for the implementation of the Law “On the Natural Gas Market’; settlement of the issue of financial guarantees for suppliers (traders) of natural gas to Ukraine.

The success of the implementation of the new model of the gas market depends on the changes taking place in the company of Naftogaz of Ukraine [23]. Today, Naftogaz has made and is doing a lot in the field of the oil and gas complex reforming. However, experts note that the issue of the introduction of a competitive gas market in the country is a public task, and its solution requires a controlling influence on the part of the state body on the one hand, and, on the other, the functioning of an independent controlling body. The adoption of the Regulator Act (NKREKP) provides for the functioning of a body that will protect the market from unauthorized by the law the interference with, both legislative and executive, as well as financial and industrial groups.

With the adoption of the cabinet of Ministers of Ukraine resolution No. 496 dated July 1, 2016, “On approval of the restructuring plan of Naftogaz Ukrainy”, a number of organizational changes are expected to implement the idea of distributing of the extraction, transportation, storage of gas in certain areas of activity in accordance with the Law “On the Natural Gas Market”. The outlined changes suggest a gradual, evolutionary development of the industry instead of revolutionary.

The promising development of the domestic fuel and energy complex is linked to the expansion of international cooperation and co-operation. And this requires bringing existing capacities to international standards. Today, the level and peculiarities of Ukraine's development impose significant restrictions on Ukraine's integration potential. In particular, the technical condition of a significant part of the equipment does not meet the requirements for their operation.

It should be noted that the directions and prospects of the international partnership are defined in the basic document of the development of the fuel and energy complex – in the Energy Strategy. The organizations formed at the macro and mega levels are the subjects of international economic relations and are aimed at promoting compliance with certain norms and principles of international activity, the fulfillment of certain functions that fall within their competence in the regulation of various spheres of activity in the energy sector.

It should be noted that the implementation of changes in the industry implies the willingness of the sectoral enterprises management and executives to ensure their implementation, which requires appropriate human resources [25]. In the context of globalization, the concept of human resources management, in particular such a factor of global development as social capital, is growing.

Here, the moral and psychological resource of economic development and growth is taken into consideration, which is characterized by: the property of self-expanding accumulation and self-reproduction; strengthening of all enterprises potential when using this component of human capital; his exhaustion in the case of non-use. In the conditions of intensification of globalization processes, social capital is responsible for the creation of communication networks that will facilitate the establishment of contacts, the formation of formal and informal groups outside the existing structure of the enterprise [26].

Conclusions

Thus, globalization as a process of integration of world economies imposes its impact on the development of industry and industry enterprises. The main consequence and defining condition of the development of enterprises in the conditions of globalization is the formation of competitive relations in the energy sector of the

economy, the use of the experience of developed countries in addressing key issues in the industry. Adaptation to modern market relations in the energy sector involves the activation of such areas of activity and the use of appropriate modern management technologies for this, in particular:

1) guaranteeing energy self-sufficiency by minimizing imports, developing its own resource base; development of renewable energy sources (RES); energy balance optimization; reduction of energy losses during transmission and distribution; improvement of accounting and payment discipline; creation of a strategic reserve; ensuring flexibility and interchangeability of fuels; security of energy infrastructure. The implementation of these activities is related to the application of such management technologies as benchmarking, BSC, business process reengineering; supply chain management, outsourcing;

2) the development of competitive and transparent markets for electricity, heat, gas, oil and petroleum products, and coal, taking into account the factor of external aggression. Management technologies are based on consumer segmentation, mission and vision formation, price optimization, CRM;

3) ensuring investment attractiveness through the use of the benefits of a partnership with the EU; ensuring the rule of law; improvement of the legislation regulating the activity of the energy sector. The implementation of these areas is ensured by technologies of budgeting, strategic planning, strategic alliances, mergers and acquisitions;

4) improvement of management, namely the transition from sector to functional management model, personnel training and scientific activity; public involvement. Management improvement requires the application of management technologies such as: knowledge management, key competencies, concept of personnel management, TQM, change management, satisfaction and loyalty management, scenario planning;

5) formation of an energy-efficient society at the expense of energy saving and energy efficiency, as well as formation of energy-efficient consciousness among citizens. Management technologies in this direction should include brand management; innovation; analytical activity.

Although the distribution of management technologies in accordance with the priorities of sectoral development in the context of globalization allows us to propose certain rules and procedures for coordinating the work of personnel under certain conditions to achieve development goals, but the potential of these technologies is much wider and can be applied in situations that correspond to their content.

Further research deserves a study of the world's history of the use of management technologies in solving modern problems of development and research of the industry enterprises readiness to implement the management technologies in their activities.

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THE ESSENCE AND METHODICAL APPROACHES TO THE EVALUATION OF THE TOURIST POTENTIAL OF THE TERRITORY

Abstract. The contemporary content is disclosed and the possibility of using the term "tourist potential of the territory" is explained. My position on the content of the concept "tourist potential of the territory" is formulated. The complex approach to estimation of tourist potential of a locality with consideration of its components and indicators is offered.

Key words: potential, tourist potential of the territory, components and indicators of assessment of the tourist potential of the area.

Introduction

Tourism activity plays an important role in the development of the Ukrainian economy, creating additional benefits and opportunities for the local population, especially if the activity is carried out on a permanent basis. Indeed, sustainable development envisages economic growth on the basis of the interests of the population and a thriving attitude towards the environment.

The tourist industry is a very diverse branch of the economy that it covers up to 50 sectors of the economy, including transport, construction, trade, catering, agriculture, housing and communal services, culture, art, sports etc. thus creating the multiplier effect.

Tourism is one of the spheres of the economy that is clearly tied to the territory where it is being conducted. The natural and other resources of this locality are the basis for it. To effectively manage the development of tourism and determine the necessary investment it is necessary to find out its capabilities within a certain territory.

Analysis of latest researches and publications

Numerous works of scientists and practitioners are devoted to problems that arise in the study of tourism potential and its components. For instance, M. P. Butko [1] defined the place of the tourist potential in the economic space; V.V. Shmahina [2] developed a comprehensive assessment of the factors of the natural resource potential of the recreational and tourist complex; V. Poliuha [3] improved the system of statistical indicators of the tourist and recreational industry; V.I. Matsola [4] uses natural and cost indicators to assess the potential of the recreation and tourism complex in the region; O. Hulych [5] gives a description of the recreational potential of the Ukrainian Carpathian Mountains; A. Abdulla, M. Sumen [6] developed a methodology for assessing tourism potential based on demand and supply; V. M. Kozyriev [7] considers the tourist-recreational potential through the prism of the possibility of obtaining income by economic subjects whereas A. S. Kuskov [8] considers it through the prism of non-violation of ecological balance. However, scientists did not manage to create the only methodology for evaluating the tourist potential. Thus, the problem needs further study.

Goals

The aim of the article is to reveal the present essence and formulate own opinion on the content of the concept of "tourism potential of the

territory"; identify the components and justify the approach to assessing the tourism potential of the territory.

Presentation of main material

The interest of scientists in this issue increases each year due to the dynamism of tourism development and its importance for the economy of the country and regions. Therefore it is necessary to clarify the conceptual apparatus which concerns tourism activity and tourism potential in particular.

Thus, one can find in scientific works the terms "tourist-recreational potential", "recreational and tourist potential", "tourist potential", "tourist resources" under which identical concepts are often understood.

It is worth to analyze the meaning of the term "potential" before finding out the essence of the concept of "tourist potential".

Potential (from lat. potentia – force) is a collection of all available means, capacities, productive forces, etc. that can be used in any industry, sector, sphere [9].

Potential is the available capabilities, resources, stocks and means that can be used to achieve or carry out something [10, p. 211].

Different terms are understood under the tourist potential in scientific literature, for example: "tourist resources", "tourist fund", "tourist heritage", "tourist attraction", sometimes this concept is identified with "tourist-recreational potential" or "recreational and tourist potential".

In order to find out the difference between these definitions, it is worth mentioning that according to Ukrainian legislation "tourism is a temporary departure of a person from the place of residence for health, cognitive, professional, business or other reasons without carrying out paid activities in the place where the person arrives" [11].

"Recreation is restoration of mental, spiritual and physical abilities of the person in the places of the protected areas and objects outside the permanent place of residence determined by the legislation. Recreation is carried out through general health, cultural and educational rest, tourism, amateur and sport fishing activities... etc." [12].

Thus, recreation includes tourism activities. So, there is no need to expand the concept of "tourist potential", which is wider than recreational, because tourism is divided into such "types as sports; religious; ecological (green); rural; business as well as cultural-cognitive and health-improving" [11], etc.

Let us explain the definitions of the concept of "tourism potential" given by different scholars and practitioners.

S. V. Dutchak gives the following definition: "Tourist potential is a cultural and historical heritage being an anthropogenic component of tourism, as well as certain landscape complexes where tourism activity takes place, with some natural or man-made tourist objects or events that tourists visit, in particular: museums, cultural monuments, architecture, traditions of the population, folk crafts, etc." [13].

P. F. Koval explains that the tourist potential of the territory is a capacious, multidimensional concept that consists of a set of natural, ethno-cultural and socio-historical resources, as well as the existing economic and communication infrastructure of the territory that serve or may serve as prerequisites for the development of certain types of tourism [14].

S. I. Dorohuntsov suggests the following definition: "Tourist potential is the ability of economic entities and authorities to form a tourist product of the territory by using all resources for the development of the territory in order to meet the needs of the population and target markets" [15].

J. Crippendorf considers tourist potential through the prism of the possibility of creating a "finite tourist product" and the ability to develop economic tourism [16].

The existing definitions of "tourist potential" can be called into question if one considers the wording using integrated approach, under which all the components of the term should be taken into account. Such a multi-sided concept can be characterized in the following way.

Potential is only opportunities that can be used to create the necessary conditions, that is, infrastructure, information base, security environment, etc.

The tourist potential of the territory includes such components as technical tourism potential and economic tourism potential. The technical tourist potential is the ability of the territory to attract the maximum number of tourists that can find tourist

accommodation or stay at residents' places of a certain region with available tourist resources, taking into account the possible recreational and psychological pressure on the area. Economic tourism potential is an economically efficient number of tourists who visited a certain region and made it possible to achieve maximum socio-economic effect.

The real tourist potential of the territory is a natural and anthropogenic tourist resources of the territory, as well as a modern developed material and technical base of tourism (MTB) which makes it possible to attract the maximum number of tourists that can find tourist accommodation or stay at residents' places of a certain region with available tourist resources taking into account permissible recreational and psychological pressure on this area in order to achieve maximum socio-economic effect.

One can use indicators presented in the statistical reporting of tourist enterprises or other institutions in order to estimate the technical tourist potential of the territory. Using statistical indicators the number of facilities and their locations can be calculated to find out how many tourists can visit a specific region. Thus, the actual state of tourism development in a particular area can be defined.

In order to determine the economic tourism potential it is necessary that the set of factors influencing the achievement of the maximum economic efficiency of tourism activity and the measures to be taken to achieve it (in order to achieve maximum economic effect) should be considered. There may be potential for tourism development and the desire to receive the maximum number of tourists in a given region, but the costs for this may be inappropriate in order to achieve the maximum economic effect. The area with available tourist resources can be attractive to potential tourists to some extent. But such a territory will not achieve the high level of tourist attraction. After all, in order to create a tourist center it is important that all components of this process, such as MTB tourism, tourism infrastructure or marketing policy should be developed.

It is necessary to specify the components of this process in order to select the method of estimating the tourist potential of the territory. We suggest a list of elements given in the table that are a part of this or that component which form the environment and the system for ensuring the formation of the tourist potential of the territory. It is obvious that each of the components in the table reflects the factors that influence the formation of the tourist potential of the territory, the conditions for the needs of potential tourists, etc. The analysis and evaluation of each component will allow you to go over to the list of lower-level indicators that are predominantly represented by a system of statistical indicators (in case of absence of statistics, some lower-level indicators can be estimated in points by experts).

However, there are many factors having a significant impact on the development of tourism in the area are the basis for the activities of tourism enterprises while the quantitative indicators for their evaluation in statistical data are not reflected.

This situation has arisen due to the uncertainty of the tourism industry as a separate branch of economy in the National Classifier of Ukraine "Classification of Types of Economic Activity DK 009: 2010" [17]. There are only certain types of economic activity related to tourism mentioned in the named Classifier. Tourism in this classification is a part of the services sector. This point should be corrected by defining tourism activity as a separate branch of the Ukrainian economy, which would enable it to better manage this process, and hence the opportunity to increase the use of the tourist potential of the territory.

Table 1

The composition of components of the tourist potential of the territory

Components		Elements
Provision system	Basic constituents	Natural tourist resources
		Tourist resources of anthropogenic origin: historical and architectural monuments, cultural, religious values etc.
		MTB: tourist infrastructure, investment support of industry
	Additional constituents	Labor resources
		Marketing support: pricing policy, information support

Therefore, some indicators from the specialized literature can be used. Such indicators are: the area occupied by recreational resources and the number of anthropogenic or other resources.

The study of tourism activity opportunities is carried out with the help of various approaches depending on the purpose of the research: regional, economic, ecological, historical, systemic etc. In order to assess the tourism potential of the region it is most appropriate to use a systematic approach that combines all other approaches into a single integrated method and consider the problem as a complex system. Thus, it is possible to take into account the peculiarities of the use of the existing basic components of the tourism potential: the natural and anthropogenic resources of the territory, the level of development of tourism MTB in the region as well as additional components: labor resources and marketing policy.

It is possible on the basis of the integrated approach to explore the territory with available tourism potential for the purpose of conducting tourist activity there, expansion or reduction of tourism MTB taking into account the recreational and psychological pressure on tourist facilities, to ground tourism development programs etc. The ability to provide management bodies with information for the coherence of different decisions in terms of directions (production, financial or marketing) as well as at the strategic, tactical or operational levels and continuity of managerial decisions show the advantage of a systematic approach in the analysis of the tourist potential of the territory.

We will have the opportunity to fulfill the following research objectives with the help of the established system of indicators of evaluation of the tourist potential of the territory: quantitatively and qualitatively assess the level of development of the tourism industry in different areas; to cover the causal links in the process of determining the level of development of the tourism potential of the territory; to identify the factors that influence the development of tourism activities, including those that have a destabilizing effect on the tourism industry, the possibility of predicting a change in tourism activity due to the influence of destabilizing factors and the adoption of optimal managerial decisions on their basis. The system of indicators will make it possible to compare the potential of the development of various tourist areas and to make the best decision regarding the possibility of obtaining the socio-economic effect from their development.

We select indicators that characterize the components of the tourism potential of the territory basing on the existing practice of statistical reporting.

Indicators for evaluating elements of the "natural tourism resources" component may be:

– quantity of natural resources by categories on the territory;

– development of natural tourism resources;

– recreational capacity within a certain territory.

The following indicators are possible for the element "anthropogenic tourism resources':

– concentration of cultural and historical monuments on the territory;

– quantity of cultural-historical monuments by the level of significance (world, national, local);

– necessary and sufficient time to review the values in order to compare different territories with the prospect of historical and cultural potential for tourism;

– state of cultural-historical monuments preservation.

The following indicators describe an element of the "MTB Tourism" component:

– amount of tourists accommodation for different categories of tourists;

– the number of beds for accommodation of tourists;

– coefficient of occupied tourist accommodation facilities;

– profit per one bed in tourists accommodation;

– number of employees in tourist accommodation per one thousand provided bed-days;

– average dwelling space of tourist accommodation in one place.

These are the elements of the marketing policy component:

– prices for services at tourist enterprises;

– advertising expenses.

We suggest the following indicators for an element of the "labor resources" component:

– number of employees of the tourist industry in the region;

– dynamics of the number of labor resources;

– the number of educational institutions that train the specialists of the tourism profile.

All these indicators are independent and only a cumulative their analysis allows to estimate the tourist potential of the territory.

Therefore, it is worth applying a comprehensive approach to evaluate the tourist potential of the territory.

Conclusions and perspectives of further research

The research carried out in this article made it possible to state:

1. The real tourist potential of the territory is a natural and anthropogenic tourist resources of the area as well as a modern developed material and technical base of tourism with the help of which you can attract the number of tourists that tourist accommodation or residents of a certain region with available tourist resources can place, taking into account the permissible recreational and psychological pressure on this area in order to achieve maximum socio-economic effect.

2. Natural and anthropogenic tourist resources, material and technical base of tourism, labor resources and marketing support are the elements of the components which create the environment for the formation of tourist potential of the territory.

3. It is most appropriate to use a systematic approach that allows combining all other approaches into a single, integrated method, and consider the problem as a complex system to estimate the tourism potential of the region.

It is advisable to propose a methodology for estimating the tourist potential of the territory in further research.

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NETWORK COMMUNICATION AND POLITICAL AND ECONOMIC ADVANTAGE

Abstract. The aim of the paper is to identify factors responsible for gaining political and economic advantage in network society. The hypothesis is that network communication accounts for political and economic advantage. The Internet network and networking technologies provide new capabilities to new, network form of any system: political, economic (*network economy*), and social. To formulate findings and verify the hypothesis, the author draws on her own experience, the observation of political and social events, as well as analysis of media content, statistics and findings of the scientific research conducted by experts.

Key words: network communication, network society, political advantage, economic advantage

Introduction

Transformations of the society can be characterized with three terms: information, Internet and network. Information and knowledge have been the main assets determining any social advances from the very beginning of the human civilization and the Internet has made them even more critical. The Internet is conceptualized as a mass medium, yet this seems to be not sufficient for all situations. The Internet is a multifaceted mass medium as it contains many different configurations of communication. Its varied forms show the connection between interpersonal and mass communication [1]. Internet is characterized by features that have significant consequences as they create opportunities as well as threats for the society:

§ its global nature

There was an estimate of 3.885.567.619 Internet users worldwide by June 2017. This means about 51.7 percent of the global population accessed the internet that year. The majority of global internet users are located in East and South Asia – 49.7 percent of total, whereas in Europe – 17.0 percent and North America – 8.2 percent. English is the most common language on the internet by share of users, followed by Chinese and Spanish. South Korea has the world's fastest average internet connection speed – 27 Mbps as of 2016. The global average internet speed stood at 6.1 Mbps that year [2].

§ interactivity

The Internet is qualitatively different from any other medium since the ease with which users communicate with each other has created a false sense of communicative freedom. “Spamming” and “flaming” are more and more notorious practices.

§ its potential to shift the balance of power in the offline world

Any enterprise that has been the target of a cyber-attack comes to realize that the power of the Internet can cause instantaneous and irreparable damage and are usually stunned by the ferocity, ubiquity, and tenacity of cyblerlibel attacks.

§ accessibility

Accessibility distinguishes the Internet from traditional print or broadcast media. The low cost of connecting to the Internet and establishing one’s own website means that everyone can be a content provider.

§ anonymity

Users communicate anonymously or under assumed names, which secure their privacy on one hand, but on another makes them far less inhibited about the contents of their messages.

§ its facilitation of republication.

The content can be republished unlimited times to unlimited audience. The question arises: who is responsible for re-publication the author or subsequent re-publisher?

§ the prominence of intermediaries

Intermediaries are involved in every Internet publication and their liabilities are regulated by law.

§ its reliance on hyperlinks/hypertext

It is a predominant mechanism through which users navigate the web and find information online. Hyperlinking is a legal activity that supports usability and the propagation of the web's interconnections.

§ its long-term impact

The Internet serves as a repository for information which is usually treated as eternities or contemporary facts when retrieved at some time. The threat of libel emerging in the future is an important issue in damage awards in libel actions.

§ its multimedia character

The Internet allows information and images that defame people or manipulate them to appear uncontrollably in various forms. The content can be transferred from one medium to another complete or fragmented, intensified or diluted. The common practices are: a picture of a well-known individual that has their head superimposed on Hitler, Stalin, or Osama Bin Laden's body; the individual's picture may not be superimposed on the body of one of these individuals completely, but it may have some references to them and their cruel actions; the photo of Mickey Mouse as a terrorist or commercial of a Lego-like block terrorist [3].

1. Communication network as a backbone of the network society

The characteristic of the Internet which seems to be intrinsic and disruptive one is its networked nature. The Internet is defined as a huge communications facility which consists of a world-wide network of computer networks deployed to communicate information [4]. The Internet grew out of the Advanced Research Projects Agency's Wide Area Network (then called ARPANET) established by the US Department Of Defense in 1960s for collaboration in military research among business and government [5].

The concept of the Internet network and generally networking technologies provide new capabilities to a traditional form of social organization. Manuel Castells also claims that in the past, networks were the domain of the private life, and the scope of production, power, and war was organized and managed centrally and vertically in a form of states, churches, armies, and corporations. Digital networking technologies are flexible and thus, able to coordinate performance of decentralized, autonomous elements of any system: political, economic (*network economy*), and social. Digital communication networks are the backbone of the network society [6].

The literature provides with many definitions of the network society. They are as follows:

1) a term used to characterize the changes in a **society** brought about by the Internet communication technologies and in which individuals and groups organized around digital information networks. Peer Learning and Social Interactions in an Asynchronous Learning Environment;

2) a network society is a conception of society based on advanced networking capability to support anytime, anywhere, life-long engagement where all members of society have access to high-quality content. Virtual Repository Development in Canada;

3) a society where the key social structures and activities are organized around ICTs and the ability to exploit electronic information networks becomes critical for individuals as well as organizations. The Role of Public Participation GIS in Local Service Delivery;

4) the rise of the information society will see the emergence of a network society in which information and technology will enable the formation of networks and strategic planning. Contemporary Concerns of Digital Divide in an Information Society;

5) "a society in which a combination of social and media networks shapes its prime mode of organization and most important structures at all levels (individual, organizational and societal)" (Van Dijk, 2005). Management of Distributed Project Teams in Networks;

6) the rise of information society will see the emergence of a network society in which information and technology will enable the formation of networks and strategic planning. Technology Discourses in Globalization Debates;

7) the current configuration of society in which human activities, experiences and power are affected by the network nature of the Internet. The Digital Divide, Framing and Mapping the Phenomenon;

8) the social reality of the 21st century denoted by the widespread use of information and communication technologies in both society and institutions, emphasizing the importance of being able to access new information quickly and effectively through a network structure (Van Dijk, 2012). Development Trends in Economics of Distance Education from the Perspective of New Technologies.

Most quoted definitions emphasized the importance of ITCs technologies which facilitate network communication responsible for an effective organization strategy execution, which involves human activities, interactions, experiences and power.

2. Political advantage

The power in the network is dispersed and held not only by the state but also by non-state entities: international organizations, business organizations, non-government organizations and criminal organizations. The standards of socialized communication dictate who wins and who loses. This communication is mass as it reaches the whole planet. It is self-directed and horizontal because it is often initiated by individuals or groups and penetrates blogs, vlogs, streaming, and other forms of communication. The communication is also global and local at the same time as controlled by media business conglomerates that include television, radio, the print press, audiovisual production, book publishing, music recording and distribution [7].

As the result the politicians and government organizations resort to active participation in social mass media networks to gain political advantage.

Andrea Scavo and Chris Snow ran the BBC Media Action, in which they use media and communication to foster participation in political life by providing information, initiating discussion and direct interaction of citizens with decision-makers.

Quantitative data from seven countries (Bangladesh, Kenya, Nepal, Nigeria, Myanmar, Tanzania and Sierra Leone) allowed them to find the links between watching and listening to governance programs and political participation, as well as the key drivers of participation: political knowledge, discussion and efficacy.

The total sample size was 23.621, with data collected at various points over the course of the five-year program. The analysis shows that:

- 42 % of people regularly reached by BBC Media Action governance programming have participated in an organized effort to solve a problem several times, whereas only 26 % of those not reached by these programs have done so,
- 54 % of people regularly reached by BBC Media Action governance programming have attended a local council meeting at least once, compared with 35 % of those not reached by these programs,
- 40 % of people regularly reached by BBC Media Action governance programming have contacted a local official one or more times, whereas only 28 % of those not reached by these programs have done so.

The findings formulated in the report on BBC Media Action prove that the exposure to governance programs has positive effects on the political participation political knowledge and discussion [8].

The social media has played a crucial role in transformation of political campaigns. Heather Satterfield identified the following spheres of mass communication that deeply affect political and social activities:

- News Around the Clock

Online news is a 24/7 phenomenon. While you can access news on any websites at any hour, you get all of the latest trending news stories and opinions shared by your friends whenever you log on.

- The Impact of Polls

Social media has dramatically increased the number of poll results and their impact on political campaigns. Not only do social media sites report the results of polls, you can actually participate in Facebook polls. A poll can be predictive as voters analyzing the poll results, can change them in favor of or to disadvantage of a given candidate.

- Direct Interaction with Politicians

Social media creates the opportunity for voters to interact with candidates or politicians and attend virtual events.

- Demographics and Targeting.

Targeting is a common marketing practice to make sure that advertisements and messages reach the right audience. It is also seen as positive in political actions. The political campaign team explores a wealth of information or analytics about the people who are following them on social media, and customize their messages based on selected demographics: women, college students, retired people, Latinos or any other group of voters [9].

§ Rumors, Fake News and Conspiracies

Social media makes the content especially confusing. The constant stream of memes, links and rumors about political leaders and candidates is a mixture of truth, lies, satire and speculation. It is enough to quote the president Donald Trump to prove how crucial and devastating this media is,: *Somebody with aptitude and conviction should buy the FAKE NEWS and failing @nytimes and either run it correctly or let it fold with dignity!*[10].

§ The Power of Confirmation Bias

It's natural for people to make contacts with people of like mind. This is true both online and offline. Yet, on social sites, this can create the illusion that "everybody" thinks the same way. If 90 percent of your friends on Facebook agree on specific political issues, the information you get will be filtered through this bias. People will post links to stories that confirm your existing bias. Social media may reinforce our opinions and make it more difficult to be critical and objective.

§ Social Media and the Future of Politics

ICT advancements will definitely change politics. For example, in Poland there are now proposals for internet voting, which could increase participation in elections, but at the same time even more influence people's decisions as they could literally vote moments after reading the latest comments on Facebook or Twitter.

Billboard and social media campaigns are organized to maximize the potential of democratic tool, which is a nation-wide debate on the reform of the Polish judicial system. The aim is to preset the concepts and government proposals and to get the feedback from the society in the unbiased, real, true and positive atmosphere.

Polling techniques on social media will become more common and, probably, more accurate. As social media becomes ever more popular, its impact on politics will only increase over time [11].

According to the *Survey Report November 2015 Deep Shift 21 Ways Software Will Transform Global Society* by Global Agenda Council on the Future of Software & Society it is expected that in only a few years, three-quarters of the world's population will have regular access to Internet and will be able to interact with information from any part of the world. Content creation and its distribution will be even easier. Some of many positive impacts on building political advantage will involve:

§ Access to education, healthcare and government services,

§ Presence,

§ More information,

§ More civic participation,

§ Democratization/political shifts,

§ Increased transparency and participation versus an increase in manipulation and echo chambers and political fragmentation societies will probably face [12].

3. Economic advantage

Investments in IT equipment and software are the most important sources of economic advantage. This statement is supported by the research conducted by Dale W. Jorgenson and Khuong Vu and its findings presented in the paper *Information Technology and the World Economy [13]*.

They considered the impact of IT investment and the relative importance of input growth and productivity on economic growth. They analyzed all seven regions of the world economy, 112 of the 116 economies, and 14 of them experienced a surge in investment in IT equipment and software after 1995

The leading role of IT investment in the acceleration of growth in the G7 economies is especially pronounced in the U.S., where IT dominated the contribution of capital input. The contribution of labor input predominates in the Non-G7 industrialized economies, Latin America, Eastern Europe, Sub-Saharan Africa, and North Africa and the Middle East. Productivity growth was important in Developing Asia before 1995, but assumed a subordinate role after 1995. Productivity has been declining in Latin America, Eastern Europe, Sub-Saharan Africa, and North Africa and the Middle East. Generally, the productivity appeared to be the least important of the three sources of growth.

Mohanbir Sawhney and Deval Parikh present the similar point of view that in the network environment the management of interactions brings more profit than the actual production processes [14].

These interactions in network are controlled by *interface intelligence* operating on the peripherals of the network where the users connect. These interactions can be continuous and in real time.

Customers can always stay on top of the updates through various mobile apps, emails, regular updates from the company or the online progress tracking system. Big data analytics examining large and varied data sets uncover hidden patterns, unknown correlations; market trends, customer preferences and other useful information that can help organizations make more-informed business decisions and satisfy individual clients. In Levi Strauss, 80 % of the custom ordered jeans fall under the categories of the available sizes, yet the clients choose to custom order through the 'Personal Pair' method of the company to feel satisfied. The Custom Foot's Keegan confirms the same client behavior. Numerous companies such as Individual.com, News page and Yahoo are utilizing the Internet to create customized news items for the visitors whereas other businesses are using the online platforms to allow the clients to design the products on their own. Music companies such as Volatile Media and Musicmaker have become successful in delivering customized CDs. Mass customization is going to replace mass production as it reduces production overruns and wasteful expenditures [15]. Technology is progressing to miniaturize devices, increase computing power and decrease the price will lead to people using more devices with new functions performed and with specialization of tasks. The on hand examples are:

§ Released in 2015, Apple Watch connected to the internet, contains many of the same functional capabilities as a smartphone,

§ Clothing and other equipment will have embedded chips that connect the article and person wearing it to the internet,

§ Glasses, already on the market (not only produced by Google) allow you to manipulate a 3D object and mould it like clay, provide all the extended live information in the same way the brain functions, project picture or video on any piece of paper

The projected positive impacts are:

§ Better decision-making for navigation and work/personal activities

§ Improved capacity to perform tasks or produce goods and services with visual aids for manufacturing, e.g. personalized clothes (tailoring, design), healthcare/ surgery and service delivery (e-commerce)

§ Ability for those with disabilities to manage their interactions and movement, and to experience the world – through speaking, typing and moving, and via immersive experiences,

§ More economic participation of disadvantaged populations located in remote or underdeveloped regions – Access to education, healthcare and government services

§ Access to skills, greater employment, shift in types of jobs

The list of the unknown or cuts both ways effects include:

§ Increased immediate information

§ 24/7 – always on

§ Lack of division between business and personal

§ Be anywhere/everywhere

§ Environmental impact from manufacturing [16].

Conclusion

The analysis of the main features of social transformation: information, Internet and network helped to identify the nature of the contemporary society. The Internet and new technologies created the network structure as a mode for the social organization and functioning, information processing and communication. Most definitions of the network society quoted in the paper emphasize the importance of ITCs technologies responsible for an organization strategy execution, which involve human activities like network communication, experiences and power.

Thus, the formulated hypothesis reads that network communication accounts for political and economic advantage. The author's own experience, the observation of political and social events in Poland as well as analysis of media content exemplifying the impact of mass communication, as well as statistics and analysis of international institutions reports and results of the scientific research conducted by experts helped formulate findings and positively verify the hypothesis.

The communication is mass, socialized, self-directed, and global and local. The politicians and government organizations resort to active participation in social mass media networks to gain political advantage. The exposure of society to governance programs has positive effects on the political participation, political knowledge and discussion. Internet voting, which could increase participation in elections or billboard and social media campaigns organized to maximize the potential of democratic tool of social communication are to give expected political advantage. Interaction with client through business application and big data analysis leads to mass customization of products and help gain economic advantage. F**or** majority of the businesses, mass customization is the best available option and is most likely to replace mass production as the structure and expectations of the clients change.

Ubiquitous computing will result in expanding markets, new industries, increasing political, social and economic participation of all people, also the disadvantaged ones. The experts indicate increase in manipulation and political fragmentation of societies and lack of division between business and personal as probable negative impacts.

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MODERN MANAGEMENT SOLUTIONS FOR LOGISTICS, FINANCE AND HUMAN RESOURCES IN DEFENSE AND SECURITY SERVICES

Abstract: The aim of the paper is to present the research analysis and author's practical experiences in implementing modern IT solutions. These solutions concern, in particular building and implementing the Integrated Multilevel IT Systems for Logistics, Finance and HR operating in the defense and security services. The detailed research was also on possibility of implementing systems for product coding, electronic shopping and distance learning.

Implementing modern IT solutions should improve performance in logistics, finance and HR in defense and security services. The implementation of these solutions in both areas at the same time will be the most effective approach to manage the assets in the most effective way. Implemented IT solutions support rational planning, collecting, storing and using assets. Logistics management should be integrated with finances and Human resources, which facilitates delivery of necessary assets in tight quantity, quality, place and time for competitive price. This will influence achieving set aims (fulfilling tasks) in time of peace, crisis and war.

Presented solutions set general directions for informatization and involve implementation of the latest technologies (software, applications, hardware, and computer networks) and IT security. As the result the Integrated Multilevel IT Systems for Logistics, Finance and HR should be built. This system with applied planning, analytical and evaluation applications operates in real time and facilitate information exchange with systems of national economy, NATO and EU.

The base of Integrated Multilevel IT Systems for Logistics, Finance and HR is the reliable coding and identification system for all assets used and in stock. With the coding system it is possible to organize electronic shopping which help prevent corruption. The distance learning (e-learning) is another effective solution for logistics, finance and HR.

Presented possibilities of implementing new IT solutions for logistics, finance and HR are not the only possibilities new IT solutions offer. The presented ones should serve as an inspiration for decision-makers to further actions, theoretical research and practical steps.

The conducted research proved that new IT solutions influence better performance of logistics, finance and HR for defense and security services. It should also be indicated that implementation of new solutions for defense and security services is long organizational and intellectual process. It needs financial means, well prepared experts at single organizational levels where these solutions are being implemented.

Key words: Informatization, Integrated Multilevel IT Systems, coding, electronic shopping, distance learning

Modern civilization, technical and technological development are the major challenges for the systems built and implemented in the defense and security services. The aim of the paper is to present the research analysis and author's practical experiences in implementing modern IT solutions. These solutions concern, in particular building and implementing the Integrated Multilevel IT Systems for Logistics, Finance and HR operating in the defense and security services. The detailed research was on possibility of implementing systems for product coding, electronic shopping and distance learning.

The hypothesis was that the present IT systems do not meet the needs. Implementing modern IT solutions should improve performance in logistics, finance and HR in defense and security services. The implementation of these solutions in both areas at the same time will be the most

effective approach to manage the assets in the most effective way. To verify the formulated assumptions the commercial modern IT solutions were analyzed and estimated in terms of their usefulness for the defense and security services. This analysis led to the synthetic findings about the effects of implementing these solutions. In the social science the defense and security are closely connected and implementation of the modern IT solutions for logistics, finance and HR could integrate them even more and improve their effectiveness and efficiency in time of peace, crisis and war.

1. Introduction, nature and range, and characteristic of modern solutions to aid logistics, finance and HR management.

Market economy, competition and new knowledge promote implementation of modern technologies in logistics, finance and HR. These technologies allow for collecting, transforming, storing and processing of information almost without limitation. This concerns civil economy as well as specific field, defense and security services to the same degree. Application of these solutions will result in rational planning, collecting, storing and using of the logistic assets. Logistics management should be integrated with Finance and HR to improve coordinated delivery of required capacity in the right quantity, quality, place, time and price, thus influencing defined targets (task fulfillment) in times of peace, crisis and war.

Application of the latest IT solutions which may effectively support logistics, finance and HR management will permit to:

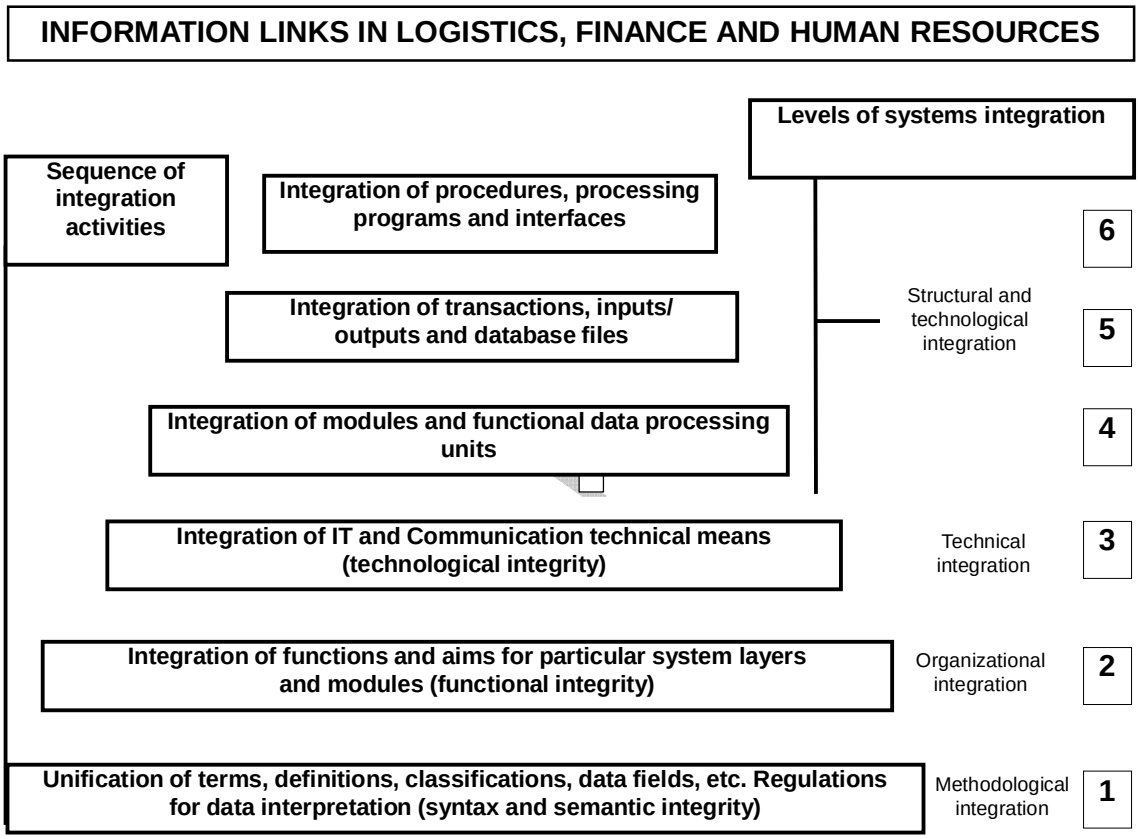
- plan expenses rationally,
- deliver reliable information about the army resources including quantity, value, quality features of assets in real time,
- update, complete and verify information for evaluating, planning and decision making processes,
- monitor assets flow among separate departments allowing for time, place, quantity, quality and value,
- automate exchange of (official and secret) information and reporting in logistics,
- effectively record and control expenses on logistics and financial processes,
- manage e-shopping while preventing corruption,
- train effectively with the latest methods like distant learning (e-learning),
- achieve compatibility with the systems of national economy, NATO and EU.

The implementation of modern solutions in logistics, finance and HR will result in effective and rational assets management: collecting, organizing the data base, collecting, processing, storing and transferring information to the authorities for effective managing and rational decision making. The key point is to implement modern solutions only when all logistic, finance and HR structures, operations, management and command processes have been organized. Since modern IT solutions are of complex nature integration takes place in stages and on different levels embracing separate functional fields.

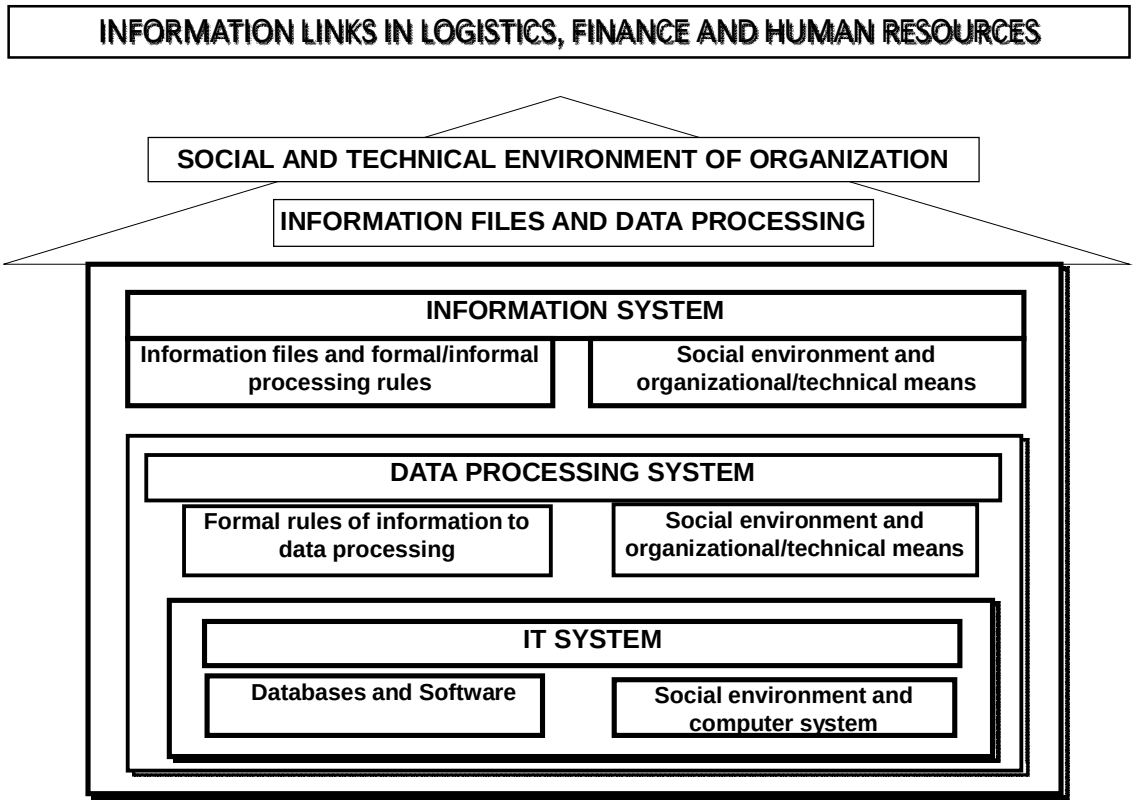
This can be depicted by 6 consecutive stages (Graph 1). The importance of the single stage changes depends on the level of design and utilization of modern IT solutions. In the field of logistics this means necessity to unify all terms, entries, product codes, limits and standards of all types, and accounts before beginning.

Unification in these fields should be the basis for “organizing” logistics and establishing connections with Finance and HR on given organizational levels in institutions, units, headquarters etc. to boost implementation of these solutions at the same time. Only stable and vivid logistics, finance and HR structures, defined processes and complete knowledge (data) base open the door to employing (executing) modern IT solutions. In particular, the requirements of logistics security in all fields and organizational levels should be precisely defined.

Describing logistics processes (in materials, technical, medical, transport, and infrastructure departments), finance and HR and creating an explicit picture (process mapping) are required for the remarkable progress in acquiring and executing modern IT solutions, firstly for a test-run and then for practical exploitation shortly after. To support logistics, finances and HR with modern technologies three basic terms have been adopted: *information system, data processing system, IT system* (Graph 2).



Graph 1. Stages of integration and levels of integration in management IT systems. Source: Zbigniew J. Klonowski, (Politechnika Wrocławska).



Graph 2. The general model of relations in the information system between data processing system and IT system. Source: Zbigniew J. Klonowski, Ph. D. (Politechnika Wrocławska)

Systematization of knowledge about single relations in the information systems and organization as well as integration of logistics, finance and HR, help construct and introduction of the Integrated Multilevel IT System for Logistics, Finance and HR

The presented general outline of the suggested modern solutions for logistics, finances and HR of defense and security services proves there is an urgent need to define and apply such systems. The systems currently used are not effective in managing assets fully and rationally.

2. Integrated Multilevel IT System for Logistics, Finance and HR

After strategy is defined and financial means secured the introduction of IT systems in logistics may commence. This action is to embrace all organizational levels and secure all logistics fields: materials, technical, medical, transport and infrastructure. These solutions should be applied to Finances and HR as well. The main directions of informatization development include adaptation of the latest technologies (software, applications, equipment, and computer networks) and ICT systems security. The completed national product coding is an essential step in building data bases, and consequently, using the IT system for managing all assets in the defense and security services. As the end result, the Integrated Multilevel IT System for Logistics, Finance and HR should be created. This system operating in real time through adopted mechanisms for planning, analysis, auditing makes it possible to exchange information between systems of national economy, NATO and EU in times of peace, crisis and war. The Integrated Multilevel IT System for Logistics, Finance and HR needs organized and explicitly identified tasks in each field. This condition and the modern technology tools permit:

- extensive integration with the structures of national economy, NATO and EU;
- perfect task performance in separate fields on all organizational levels;
- ideal process management;
- rational resources and demand adjustment [1].

Moreover, stable and vivid logistics organizational structures provide the strong base necessary to build the system. Other essential elements are the range and time while implementing given levels of standardization (compatibility, interchangeability, universality) and simultaneously fulfilling tasks according to the criteria of quality, time, quantity, place and value. Clearly defined ranges of activities result in rational using of HR organizational structures (including knowledge, training and skills), information resources and technical infrastructure. Efficient operation of future IT system should be guaranteed by its structure composed of specific applications and technical infrastructure. The application structure may be analyzed in logical and physical terms, and the technical structure is used for collecting, processing, storing and distributing (transferring) of information. Clearly all the elements of an IT system are closely connected. Efficient and fast informatization in the defense and security services should be conducted in two stages:

- the first stage (the current task) is to identify the activities, resources and processes and then build IT systems and subsystems for logistics, finances and HR management on all organizational levels and sectors using the central data base;
- the second stage (the consecutive task) is to build an Integrated Multilevel IT System for Logistics, Finance and HR and create networks in all organizations and institutions responsible for logistics, financial and HR security [2].

3. Computer Aided National Product Code (NPC)

The most crucial IT systems for logistics are systems for national product coding. So far there have been many systems used; however, none of them have included all products and equipment in stock. Computer aided universal quantity-quality-value accounting and material requirements, money resource planning require a reliable system to identify and categorize all resources used and in stock. Realization of these systems allows all planning, accounting and reporting systems in defense and security services to operate properly. National Product Code (NPC), at this stage of identification, is the only complete source of information about coded products. NPC Base as the information set organizes, identifies and

categorizes products and serves as the platform to integrate all resource management systems.

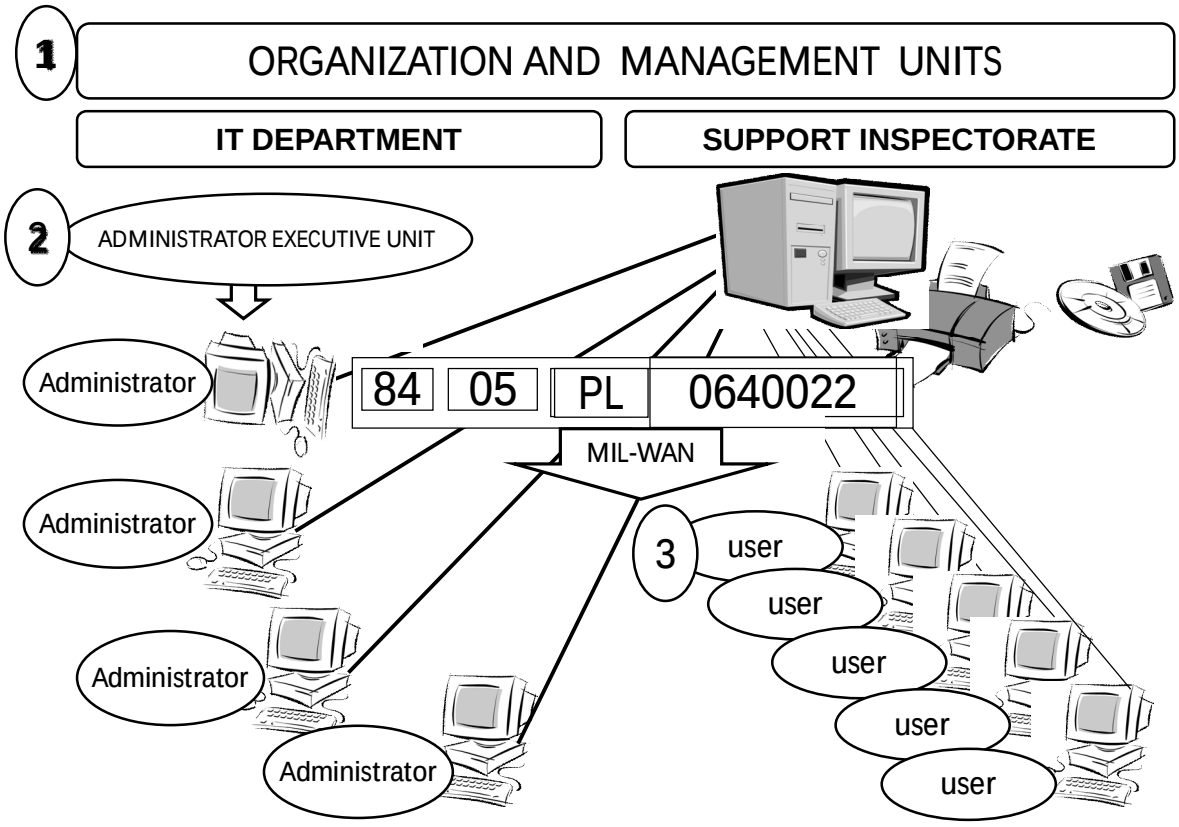
Procedure of granting National Product Code consists of three stages:

Stage I – while the administrator applies for NPC it is necessary to locate the product on the proper structural level (in the vertical system) of hierarchical ranking.

Stage II – to identify the product and submit the application for NPC for the given product which is granted by the executive unit of the applicant's system.

Stage III – to grant NPC by the administration and management department – currently, the Armed Forces Support Inspectorate.

The actions at these stages are performed by Computer Aided National Product Code System on the SAP R/3 platform. Operation of Computer Aided National Product Code is presented in Graph 3.



Graph 3. Operation of Computer Aided National Product Code.

4. E-commerce, e-shopping – how to prevent corruption.

The traditional forms of commercial transactions gave way to online trading which developed with the beginning of the Internet. This created limitless possibilities for quick and simple transactions between various economic entities. Nowadays e-commerce means the possibility to buy at any place and time sitting at a desk or at home. Also the e-marketplace[15] and e-auctions[16], which are popular among the information society [3], involve purchasing, selling and delivery of products, services and information. Today technical and organizational infrastructure, also the Internet

[15] Electronic marketplace – virtual or online environment that allows companies-participants to conduct business electronically: buying selling, planning supply chains, designing and developing products together. The source: the Internet, knowledge website, electronic marketplace. http://portalwiedzy. onet.pl/ 134004,,,,gielda_elektroniczna,haslo.html.

[16] Electronic auction – originates from traditional tendering (under open procedures, restricted procedures or negotiating after formal advertising for bids). Auction begins after offers (in paper form) have been submitted and assessed. It is a multiparametric biding where numerical criteria other than price are taken into consideration. The source: the Internet.

lets companies put out to tender and so spend public money effectively. In practice modern technology adapted to tendering procedures enables participants to conduct business transactions using digital data processing and transmission via the Internet (e-mail, www search engines, links, portals, vortals and other communication means). Tendering in institutions, offices and companies is organized through e-auctions at which participants buy or sell a variety of products and services. E-auction is a four-stage process. In the first stage the invitation to the auctions are sent to all contractors whose applications have not been rejected. In the second stage the auction is open on the date stated in the invitation. In the third stage the auction is closed and results announced to the participants, and in the fourth stage the contract is signed. Contractors following the procedures receive data to log in to the system to submit further, more competitive offers by direct connection to the website at a defined time. The winner is the contractor who receives the highest number of points in the automatic evaluation of the offer.

An independent procedure for tendering is e-bidding, where on the electronic tendering platform (Internet) contractors submit next, more competitive offers of delivery of products or services. This is a "round down" bidding – the winner is the cheapest offer, yet fulfilling the conditions of order specification. Tendering by e-bidding is more complex than by e-auction. The first stage involves the announcement of conditions, procedures and specification of the tender on the website. In the following stages, contractors submit applications for permission to participate in electronic bidding and the customer evaluates them. Only the contractors who meet requirements are invited to the bidding. After opening, the contractors bid down the price of the order. After closing, the winner is identified and the contract is signed.

Another electronic procedure connected with tendering is dynamic purchase system, i.e. an electronic process of open tenders with a time limit. Dynamic purchase system is efficient in case of repetitive purchases or multiple purchasing of the same products or services (stationery, computers, and fuel). The regulations do not define the maximum value of purchase. In case of open tender, any criteria in conformity with the law can be adopted to select the best offer.

Electronic catalogs are also important in e-commerce. E-catalog presents information about products and services delivered by suppliers and e-market participants gathered on a given tender platform. E-catalogs may provide with the offers of products and services (product code, description, specification, measurement units, price lists, and order procedures). All elements of the offer are carefully described and the specifications may be enriched with marketing materials: graphics, sound and multimedia presentations, safety certificate and other indispensable data. The benefits of e-commerce would be difficult and even impossible to gain using traditional purchasing methods. The benefits are the following:

- reducing purchase price (commercial transactions);
- reducing labor intensity of purchasing processes;
- shortening the time of order completion;
- more choices (many suppliers and wider range of products);
- automatization of order placement and completion;
- permanent monitoring of purchasing processes;
- simplifying logistics and payment processes;
- reducing office management and equipment costs;
- reducing the number of personnel;
- shortening the distribution channels (simplifying circulation of documents);
- simplifying the customer service by collecting information about customer preferences easily;
- introducing new methods of promotion and advertisement;
- reducing stock;
- placing and modifying offers quickly;
- current information about the product availability;
- quick and widespread distributing of the information about products, prices on the Internet sites and relatively low prices of building and reengineering of services;

- storing and archiving the transactional data for a given period of time;
- clear transactional procedures eliminating corruption;
- saving time and decreasing the need to travel (physically) to collect information and compare products and services.

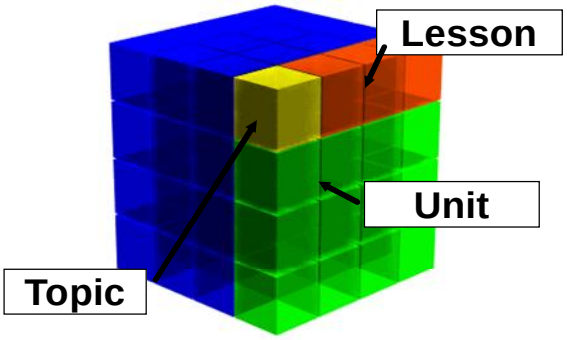
The EU directive of 2010 about e-tender and e-shopping defines the requirements that auctions, tenders and purchases should be organized via the Internet since 2010. In Poland the institutions, offices and companies may do e-shopping via Polish Tender Platform (PPP) located in Polish Securities Manufacturing Company. Implementation of this solution results in reduction of cost and labor intensity of purchasing processes, the possibility to conduct modern financial analysis, the guarantee of clear transactional procedures, and elimination of corruption. Through this process, it is possible to save 10–20 %. A coding system at electronic auctions ensures safety and reliability of transactions documented with the electronic signature. The sooner these solutions are employed the more robust economic and organizational benefits may be obtained.

5. Distance learning (e-learning) for Logistics, Finance and HR purposes.

Effective training of staff responsible for safety may be completed through various methods. One of them is e- learning (distance learning). The Internet creates favorable conditions for modern methods to be introduced to already existing educational model and vocational training. Distance learning is a process where the learner and the tutor are at a certain distance from each other [4]. There are a lot of definitions of distance learning. Mirosław Kubiak provides one: distance learning is the method adopted for teaching process when teachers and course participants (students) are at certain distance from one another and they are not at the same place. Information is passed on by traditional communication means as well as modern information technologies [5]. The most important benefits of adopting e-learning methods are:

- ability to provide well – prepared materials at the right time and place for a student;
- easily accessible course for participants – on the levels of creating, distributing, assigning and controlling;
- free access to collect teaching materials and free information exchange at any place by any number of students;
- central coordination and management of courses;
- standardization of knowledge and information resources;
- relevant teaching materials (may be easily updated personally or by another expert);
- teaching management system informing students about introduced changes;
- enhanced efficiency of training processes by introducing appealing alternative teaching methods;
- possibility to report and analyze the individual student learning period;
- extending, completing, and correcting knowledge acquired through traditional means;
- increasing new skills easily by applying *blended learning* method;
- high level of effectiveness by adopting testing tools and certificates;
- free contact with an expert;
- discreet and stress-free training process for a student;
- better use of resources thanks to detailed analysis of individual and group competence and skills;
- training process matching individual needs of participants;
- cost reduction of preparing teaching materials by using tools for creating individual courses;
- financial benefits thanks to reducing business trip expenses, eliminating travelling and accommodation costs;
- better use of technical and academic capacity of universities and scientific institutes.

Using this method is extremely positive for the people who want to extend their knowledge and are determined enough to climb the career ladder. This may serve as a component of traditional methods of teaching for those who use new knowledge and want to develop their qualifications.



Graph 4. Structure of the course in library of objects.

Training and e-learning courses are constructed of modules called teaching objects. In the structure of the course (Graph 4) they are subject to units of higher rank – lessons and lessons to units. Each element is a complete, independent course stage with its own defined targets, training activities and testing elements. Such flexibility allows new materials to be composed, modified and created freely.

E-learning in defense and security services does not differ much from methods in civil service. This is a solution which makes it possible to run courses (teach) through quick and efficient transfer of knowledge from supplier (coach, teacher) to customer (soldier, officer, worker) and to apply it simultaneously at any time and place. Adopting technological solutions to create and distribute knowledge (data and information) contributes to gaining more knowledge by course participants in many different fields.

Thanks to these solutions it is possible to define what a given soldier, officer, or worker with certain responsibilities should know and which courses should they participate in. The spectrum of e-learning activities in above-mentioned organizations can be analyzed in terms of three different dimensions: people, knowledge and communication [6]. The most popular e-learning platforms on the market are those with required functions. It is easier and cheaper to apply the already existing functions than design them individually.

In practice the Moodle platform (Modular Object Oriented Distance Learning Environment) meets the above discussed requirements. Since it is used in the teaching process in many civil universities, the Moodle may be adopted in the defense and security services as well. This platform is a modular, dynamic, object-oriented teaching environment designed to create and run courses via the Internet.

The listed examples do not constitute all the possibilities, ways, fields or places where e-learning may be beneficial. The question of where to locate people responsible for preparation, collection and distribution of teaching materials arises. One of the suggestions is to introduce this method of teaching quickly using the academic and technical capacity. Research studies and published papers would make sufficient teaching materials in this case. Another suggestion is to commission experts in logistics to design teaching topics [7] In reality distance learning is an educational not a technical issue [8]. The proposed distant learning solutions meet expectations and it may be stated that they are not only a fad but urgent need and even a necessity. The point is to be well prepared both technically and mentally.

Summary

Field analysis of should inspire decision-making bodies to further research and to take practical actions leading to applying these solutions for logistics, finance and HR. The issues discussed are sufficient source of knowledge about the actual and current stage of informatization and in what way the implementation of modern IT solutions should be planned and conducted. Using modern solutions makes it possible to plan and raise financial resources more effectively for enterprises to create more efficient access to information. Information should be collected, stored and distributed in real time on the proper decision-making level and with proper security precautions. Streamlining of organizational and functional structures and implementing an IT system should be correlated. Defined structure- defined system. Strategic targeting, which the Integrated Multilevel IT System for Logistics, Finance and HR depends on, should involve:

- completion of product coding (coding, and identifying products on the level of warehouse management);
- employing the automatic exchange of open and secret information using stationary and field networks taking proper network security precautions;

- integration of quantity-quality-value accounting;
- building IT structures for logistics, finance and HR on the separate organizational levels;
- obtaining the cooperation and ensuring compatibility of logistics systems with national economy systems, NATO and EU;
- securing financial means by task budgeting.

The aim of the research was completed. After the analysis had been carried out the author presented modern IT solutions that can be efficiently and fast implemented to manage the assets rationally. The proposed IT solutions for the commercial market help to gain competitive advantage. The formulated hypothesis was proved since modern IT solutions enhance performance in logistics, finance and HR of the defense and security services. The implementation of these solutions in both areas at the same time will be the most effective approach to manage the assets in the efficient way. Moreover, it should be indicated that implementation of modern solutions for supporting logistics, finance and HR in the defense and security services is a long organizational and intellectual process. This requires considerable financial support and well prepared workers (experts) on given organizational levels where the changes are in process. In order to achieve success, aware and determined managers are indispensable. With a long-term vision and practical actions, it is possible to adopt modern solutions of the 21 century.

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