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INTRODUCTION

We are happy to invite you to get acquainted with the first issue of the new scientific and practical publication "Intellectualization of Logistics and Supply Chain Management".

We strongly believe that the launch of this magazine indicates the objective need to rethink a wide range of issues related to the development of theory and practice in logistics and supply chain management, awareness of the need to unite the scientific community and logistics practitioners, dissemination of modern knowledge and best practices for innovative development of the logistics services market.

The first issue of the magazine is published at a difficult time. The global coronavirus pandemic and the deep economic crisis have significantly worsened business activity in the world. Currently, global supply chains are collapsing, international trade is declining, and competition between global and regional logistics operators is intensifying. The most common thesis is that the world will never be the same again. Industry experts predict the emergence of new, more flexible and adaptive supply chain management strategies and approaches to logistics business process management. The trend towards collaborations, cooperation and unification of services is emerging, comprehensive proposals for clients are being developed. There is increasing talk about the need to build bimodal supply chains, which involves the development of different decision-making scenarios: the traditional approach - cost-effective efficiency, low risk, high predictability; a new approach "second mode" - rapid recognition of opportunities, adaptability, willingness to solve unexpected problems and look for new opportunities.

Radical transformations of the global and national markets for logistics services require appropriate scientific support. Logistics science has a special role to play in this process. Initiating the emergence of a new journal, we decided to focus on its coverage of problematic aspects of the formation and development of logistics systems at the micro, mezo and macro levels, supply chain management, digitization of logistics, methods and tools for optimizing processes in logistics and supply chains, sociopsychology relations and network interaction of enterprises using cloud technologies, artificial intelligence, e-learning, neural business process management systems, etc.

Therefore, we invite scientists, researchers and business representatives, as well as our colleagues from abroad, to cooperate and present the results of scientific research, to discus and debate on them, to work together to develop the scientific theory of logistics and promote mutual intellectual enrichment.

We hope that the new scientific publication will become a theoretical guide for young researchers and representatives of other fields.

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THE PROCESS OF EDUCATING LOGISTICS STAFF IN CONDITIONS OF WIDESPREAD AUTOMATION

Tadeusz Popkowski, Dmytro Bugayko. « The process of educating logistics staff in conditions of widespread automation ». *The basic challenge facing every modern enterprise (business entity) is, among others, ensuring properly prepared logistics staff at all levels, which is a necessary condition for maintaining market competitiveness, which is the basis of economic existence. Another direction in looking for competitive advantages are operating costs. Relatively low costs make it possible to offer a product or service on the market at a lower price than competitors, or at a similar price level to achieve higher profits. This is the basic argument motivating the search for opportunities to reduce the level of various costs, in all fields of operation, with the full participation of the quality criterion. The growing role of human resources as a source of competitive advantage cannot be overestimated, despite, or perhaps primarily, in the conditions of broadly understood technology and automation of production processes and services.*

Keywords*:* human resources, management, individual, human resources management, enterprise competitiveness, educational processes, human capital.

Тадеуш Попковський, Дмитро Бугайко. «Сталий розвиток логістичної компанії на основі реалізації «зеленої» бізнес стратегії». *Основним завданням, яке стоїть перед кожним сучасним підприємством (суб'єктом господарювання), є, серед іншого, забезпечення належним чином підготовленим матеріально-технічним персоналом усіх рівнів, що є необхідною умовою підтримки ринкової конкурентоспроможності, яка є основою економічного існування. Іншим напрямком пошуку конкурентних переваг є експлуатаційні витрати. Відносно низькі витрати дають змогу пропонувати товар чи послугу на ринку за нижчою ціною, ніж у конкурентів, або за подібного рівня цін отримувати більший прибуток. Це основний аргумент, що спонукає до пошуку можливостей зниження рівня різноманітних витрат, у всіх сферах діяльності, за повної участі критерію якості. Зростаючу роль людських ресурсів як джерела конкурентної переваги неможливо переоцінити,*

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незважаючи або, можливо, в першу чергу, в умовах широкого розуміння технології та автоматизації виробничих процесів і послуг.

Ключові слова: людські ресурси, управління, особистість, управління людськими ресурсами, конкурентоспроможність підприємства, освітні процеси, людський капітал

1. Management functions in logistics

This is where a problem arises which, in principle, could be treated as purely technical, concerning terminology and the treatment of a specific population, subject to specific rigors under given conditions, as a resource. This is often perceived as an attempt to objectify this population and limit its subjectivity in the process of implementing specific production or service tasks. Naturally, for reasons dictated by the modern market, it is important to strive to increase efficiency by using the opportunities created by modern technologies, in parallel with the need to operate in conditions that require constant changes. This can be ensured by properly prepared, competent executive staff at all levels, depending on speed, flexibility in action, and the ability to learn quickly. It is impossible to ignore another issue here, also theoretically related only to terminology, namely: management or management. From the point of view of the goal, we do not see any diametric difference here. Both terms refer to activities aimed at the optimal use of human resources enabling the implementation of tasks. So why is there sometimes so much controversy around these concepts in practice, perceived basically from the highest to the lowest level - directly, physically implementing the prescribed scope of activities. A term very close to the above-mentioned ones, namely an order, is perceived much more clearly. Since ancient times, the term "command" has been associated with the army, including the personal factor, i.e. the commander who, by virtue of his charisma, skills, titles and competences, is called to command his subordinates. This form, although it basically covers the scope of activities characteristic of management (management), does not leave the contractor (contractor) much margin for alternative behavior or interpretation of his own purposefulness of the tasks, especially in conditions of war or war threat. In other words, the right of command is the power granted to the unit (units) to direct, coordinate and control, i.e. its meaning is broader than "management", which, within a strictly defined scope, allows the commander in charge to impose his will and intentions on his subordinates aimed at achieving the intended goal with full responsibility for the use of all available attributes.

It is essential here to introduce the concepts of management, characteristics and mutual relationships, which are essentially the same, differing most often only in scope and form of communication in relations between the manager and the contractor, which makes them often used interchangeably [1].

In addition, each of these terms has many important definitions, which creates even more problems in distinguishing them.

According to Professor Zbigniew Ścibiorka, "control" is the original term from which "management" is derived. It is defined as "any intentional conversion of one system to another in order to obtain such changes in the course of the process taking place in the controlled object or in the state of the controlled system at a given moment, which is considered desirable" [2].

By entering the word management in the search engine, you will receive links to over 26 million articles. A full synthetic review of the definitions is therefore, for obvious reasons, unrealistic. Therefore, bearing in mind the question posed earlier, I will limit myself only to quoting selected examples constituting, as it were, an extension of the definition in a purely encyclopedic version [3]: management - a general scope of activities, processes and decisions, the application of which in relation

to resources, people, capital or organizations is to ensure conditions for their effective functioning leading to the achievement of the set goals.

To sum up, management involves consciously creating conditions for a given entity (organization) to act in accordance with the adopted assumptions, i.e. to strive to achieve the goals resulting from the adopted assumptions while maintaining the necessary level of coherence enabling survival and development, i.e. the implementation of the mission and goals in the future [4].

2. Specificity of the impact on staff in logistics companies

Management is organizing, planning, leading and controlling the activities of members of a given group, as well as proceeding with the use of all organizational resources to achieve specific goals [5], or manipulating the subject of management in accordance with the intention of the manager. The object of management can be both things and people. A synonymous concept in the case of managing things is control, which consists in giving objects a direction or influencing the mechanism so that it functions in accordance with the will of the controller [6].

Managing people means constantly solving a large, often complex set of problems occurring between the superior and the subordinate, sometimes significantly different from the substantive area typical of a given job position. It is a consequence of the diversity of people themselves, who have different views, experiences, expectations and aspirations, who also see their role in the organization and the role of management in achieving its goals differently. There are certain relationships here involving the concepts of management (ruling), management and administration, namely:

– institutional management as the action of a superior (manager, master, boss, manager) causing a subordinate to behave in accordance with the agreed intention; – functional management as an activity aimed at performing specific activities necessary to achieve the goals and tasks of a specific organization; – administration as all activities performed by state or local government bodies within the scope of executive power. It basically comes down to managing teams of people or managing an institution with specific functions and scope of competences; – governance is management consisting in fulfilling administrative functions in a state, voivodship, commune or local government organization [7].

Directing is related to the concept of management style and is a function of management by a manager in the enterprise structure, which is associated with leadership. Leadership is influencing the behavior of others. This occurs when one person - the leader - is able to cause the desired behavior of other people, enabling the achievement of the intended goal [8]. This can be achieved by acting in a commanding (authoritarian) style - the manager makes decisions himself, persuasive (persuasive) - before making a decision, the manager discusses with a limited number of employees, consulting (consultative) - the manager makes decisions after obtaining the opinion of subordinates before making the final decision and finally ' 'participatory' - the manager presents the problem to the team and makes decisions together with the team. A significantly different management style is the so-called delegating (democratic), in which the manager allows subordinates to act within certain limits, defining boundary conditions. It is worth raising the issue of management principles at this point [9]. The most important of them are the division of labor, the authority of the leader (manager) expressed in the right to command and the ability to enforce obedience to oneself. This is undoubtedly a complex problem of information flow, currently supported by electronic information systems that are part of the business infrastructure. Infrastructure is associated with concepts such as: information, operations research, database

theory, artificial intelligence methods, software theory, information theory.

3. Qualitative criterion of competitiveness and human capital

The high quality of a product/service is created in many ways, both by technological, organizational and human factors. In such conditions, the competence values of human resources (human capital) become important.

The dynamics of transformations progressing mainly towards the internationalization of economic processes, even if they are relatively short-lived, have an impact on the functioning of individual organizations. Periodic crisis phenomena in the global economy perfectly reveal these multidirectional connections. Changes in the conditions for the implementation of production (service) processes by organizations, generally understood as logistic tasks, are becoming more and more complex, costly and even dangerous, which has an impact on the perception of the human factor, including its role in achieving tasks.

This is where the concept of intellectual capital appears - in scientific terms, identified as knowledge assets or intellectual assets that constitute the difference between the value an organization has on the market and its financial value, creating the so-called added value. Intellectual capital - a term meaning a combination of intangible assets that enable an organization (understood as a company, enterprise, production or service plant) to function and compete effectively on the market. There are three basic elements of intellectual capital in an organization, i.e.: human capital - it has the largest share in intellectual capital, structural capital, and relational capital. What constitutes intellectual capital? These are: * knowledge and experience, * skills (innate and acquired abilities), * technologies, * customer relations.

Modern management of business information systems naturally involves the need for multi-criteria analysis combined with the management of information often coming from many different sources. This problem concerns both the principles of operation of units and complex structures, both within the company and in relations with external entities. Simultaneous operation of two information networks (internal and external) is a complex problem of information flow, which is now effectively supported by electronic information systems. Information systems are not only IT tools, but primarily information management methods. also knowledge of hardware and software techniques, information maintenance and methods of maintaining information systems, which is of key importance in this broadly understood logistics. A certain regularity should be noted here: the value of the intellectual capital of modern enterprises (organizations) exceeds - often many times over - the book value of this enterprise (organization). It is worth noting that the recurring components of every definition of intellectual capital are knowledge and experience. These are components perceived as mainly contributing to the value of the organization and contributed by the teaching staff. Using knowledge and experience, it creates conditions for multiplying added value within the educational processes implemented.

The concept of intellectual capital management focuses on knowledge identification, organizational learning and knowledge accumulation, which is nowadays almost naturally supported by IT, because the organization's environment requires managers to take an innovative approach to managing its resources.

The knowledge-based economy requires taking actions to manage intellectual capital, which is the main direction of staff education at individual levels. Intellectual capital, due to its multidimensional and intangible nature, requires appropriate management techniques. The process of intellectual capital management is mainly about identifying its components, measuring and effective use towards further development of the organization's potential. Moreover, in the

process of managing intellectual capital, it is important to take care of the mutual relations between its components, which is the basis for understanding the essence of the impact of this capital on the value of the organization.

When defining the components of intellectual capital, we notice the presence of the term KNOWLEDGE in almost every case. Here we come to the basic thesis contained in the question: What structures are the creators of the level, are responsible and create intellectual capital?

Without a doubt, I claim that these structures are mainly teaching and research and teaching institutions, starting from kindergarten, through primary and secondary education, to universities. A well-known saying goes: what is a shell...

I would like to summarize here with an optimistic note, but - please forgive me a moment of personal reflection - as a teacher with over forty years of experience, this is definitely difficult for me.

Intellectual capital, due to its multidimensional and intangible nature, requires appropriate management techniques. The process of intellectual capital management is mainly about identifying its components, measuring and effective use towards further development of the organization's potential. In the process of intellectual capital management, it is important to take care of the mutual relations between its components, which is the basis for understanding the essence of the impact of this capital on the value of the organization.

Determinants of the level of intellectual capital:

– first: (to some extent a determinant regarding the decision to choose the teaching profession): motivation. Most often, the basis for such a decision are non-material factors (family tradition, availability of the field - geographical conditions, less often personal fascination (!), etc.).

– secondly: the lack of a long-term, clear concept of the education structure. Frequent, periodic fundamental changes certainly do not help maintain the level of education, mainly due to the accompanying program changes - unfortunately not always dictated only by substantive considerations

4. Conclusions.

What is the effect of this? The first component of intellectual capital - education - does not always correspond to the requirements and expectations of the market, which necessarily lengthens the path of the second component - experience - which has much less value if it differs significantly from knowledge.

The author attempts to assess the possibilities and conditions of logistic organization of the area of human resources management, and thus to analyze the concept of personnel logistics. The essence of personnel logistics is to support the process of organizing human resources with appropriate competences, enabling the implementation of tasks in accordance with the adopted strategy for a given business entity. Both in the current period and in a specific time horizon.

The values that solutions in the field of personnel logistics can bring are related to an appropriately organized educational process that allows for the creation of conditions for shaping the first of the two main factors creating intellectual capital - knowledge.

Specific solutions in the field of personnel logistics should be adapted to the type of business strategy of a given business entity, ensuring the efficiency and effectiveness of human resources activities, while taking into account the subjectivity of the human factor in terms of the basic criteria determining the framework of this subjectivity in the production (services) system.

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FORMATION OF THE SECURITY SYSTEM AND ASSESSMENT OF THE COMPETITIVE POTENTIAL OF AIR TRANSPORT ENTERPRISES

Serhii Smerichevskyi, Zarina Poberezhna, Yuriy Kolbushkin, Svitlana Gura. «Formation of the security system and assessment of the competitive potential of air transport enterprises». *The article investigates theoretical and methodological approaches to the formation of a system for ensuring and assessing the competitive potential of air transport enterprises. The definition of the concept of "competitive potential" is generalized in the context of covering all key internal processes occurring in various functional areas of the internal environment of the enterprise. Methodical tools for creating a system to ensure the competitiveness of air transport enterprises through the development of their competitive potential is suggested. The elements of the competitive potential of air transport enterprises and competitive advantages are defined, which are divided into three categories: resource, operational, and program-strategic. The structure of a multi-level system of indicators for assessing the competitive potential of the airport is presented. A step-by-step algorithm for forming a strategy for developing the competitive potential of an air transport enterprise has been developed.*

***Keywords**:* competitiveness, competitive potential, competitive advantage, air transport enterprises, strategy of development of competitive potential, competitive products, assessment of competitive potential.

Сергій Смерічевський, Заріна Побережна, Юрій Колбушкін, Світлана Гура «Формування системи забезпечення та оцінки конкурентного потенціалу підприємств повітряного транспорту». *У статті досліджено теоретико-методичні підходи до формування системи забезпечення та оцінки конкурентного потенціалу підприємств повітряного транспорту. Узагальнено визначення поняття «конкурентний потенціал» в контексті охоплення всіх ключових внутрішніх процесів, що відбуваються в різних функціональних сферах внутрішнього середовища підприємства. Запропоновано методичний інструментарій створення системи забезпечення конкурентоспроможності підприємств авіатранспортної галузі через розвиток їх конкурентного потенціалу. Визначено елементи конкурентного потенціалу підприємств повітряного транспорту та конкурентні переваги, які поділяються на три категорії: ресурсні, операційні та програмно-стратегічні. Представлено структуру багаторівневої системи показників-індикаторів оцінки конкурентного потенціалу аеропорту. Розроблено поетапний алгоритм формування стратегії розвитку конкурентного потенціалу підприємства повітряного транспорту.*

Ключові слова: конкурентоспроможність, конкурентний потенціал, конкурентна перевага, підприємства повітряного транспорту, стратегія розвитку конкурентного потенціалу, конкурентоспроможна продукція, оцінка конкурентного потенціалу

Introduction. The successful functioning and strategic development of enterprises in modern conditions requires an appropriate approach to the formation of their competitive strategy, identification of competitive advantages, and this, in turn, necessitates determining the role and importance of competitive potential in the activities of an enterprise. In today's competitive environment, more attention is being paid to the development of the competitive potential of business entities. On the one hand, this is due to the fact that competitive potential is the basis for maintaining and improving the competitiveness of an enterprise in the long term. On the other hand, the competitive potential is reflected in a set of indicators that qualitatively and quantitatively characterize the enterprise's ability to develop in the market.

In the context of market transformations, the issues of forming a system for ensuring and assessing the competitive potential of air transport enterprises are of utmost importance. After all, air transport should be considered a complex system of numerous factors, which include constantly interacting and interdependent elements that make up a single whole. The key components of the established system are air transport enterprises, domestic and international airports, separate air traffic service units, state air transport regulatory authorities, international civil aviation organizations, etc. The interaction of individual components of the air transport system with each other and with the external environment is extremely complex and, to a large extent, leads to increased competition in this sector.

That is why the study of the competitive potential of air transport enterprises is becoming an increasingly relevant scientific task, since knowledge of its main components and the level of their development will determine their further functioning in the long term.

Literature review. Most scientific works on various aspects of the concept of "competitive potential" emphasized the importance of studying the problems of its assessment and pointed out that there are

significant differences in the definition of the concept of "competitive potential", its essence, structure and correlation with other categories. Particular attention is paid to the study of competitive potential, its assessment and components in the works of such domestic authors as O. Baribina, O. Gudzynskyi, S. Sudomyr, T. Gurenko, D. Zahirniak, O. Zalunina, A. Chumasova, N. Karachyna, L. Pertsata, V. Koyuda, A. Luzhetskyi, M. Stakhova, etc. At the same time, despite the numerous developments in this area, the study of analysis, forecasting and formation of the development of the competitive potential of air transport enterprises remains insufficiently studied.

The main purpose. The aim of the study is to develop theoretical and methodological approaches to the formation of a system for ensuring and assessing the competitive potential of enterprises in modern economic conditions, which will ensure an increase in the efficiency of competitive development of air transport enterprises.

Results. The significant importance of air transport as a catalyst for global socio-economic and technological development is due to the dynamism and flexibility provided by air transport enterprises in the overall transportation system. This contributes to the branching of the system of sectoral markets for numerous types of products and the exchange of ideas, best practices and competencies between countries. Thus, the efficient operation of air transport enterprises creates a multiplier effect that ensures the development of new industries and at the same time creates the possibility of wider competitive advantages from the introduction of new technologies and high-quality products.

Increased competition in the air transport market leads to the development of effective mechanisms and increases the relevance of the use of modern adaptive management systems that will ensure the formation of competitive advantages of air transport enterprises. The factors of the external and internal environment that affect enterprises are characterized by their multiplicity and high dynamism, so managing competitive potential is one of the main tasks of minimizing the impact of these factors [2; 6].

Theoretical studies have made it possible to assert that the definition of the category "competitive potential" has changed significantly - from defining it as a set of resources and capabilities [1; 6], "part of the overall potential" [5] to understanding competitive potential as a set of key success factors [4] and components that are innovative and adaptable [2].

To study the concept of "competitive potential", a number of common features can be identified that are inherent in most approaches [3; 7]:

1. Availability of the resource component, which is the basis for the formation of the enterprise's potential and its availability.

2. Availability of tools for transforming potential into a real competitive factor.

3. Comparative analysis of the potential of competing market participants.

4. Consideration of the impact of external factors and the related ability of the enterprise to adapt to changing market conditions.

5. Connection with the competitiveness of the enterprise.

It can be argued that the competitive potential includes a set of available natural, material, labor, financial and intangible resources, as well as the capabilities of the enterprise that allow it to function effectively in the market by increasing its competitive advantages.

The formation of competitive potential involves covering all key business processes that take place in various functional areas of the company's internal environment in comparison with the main competitors. This creates a systematic view of the enterprise, which allows to identify all the strengths and weaknesses and, on this basis, to develop a comprehensive methodology for assessing the possibilities of its long-term development [10].

A key element of the effective functioning of air transport enterprises is the

use of methodological tools, which consists in creating a system that ensures an appropriate level of competitiveness of enterprises through the development of its competitive potential and competitiveness of products (services) as calculation parameters (Fig. 1).

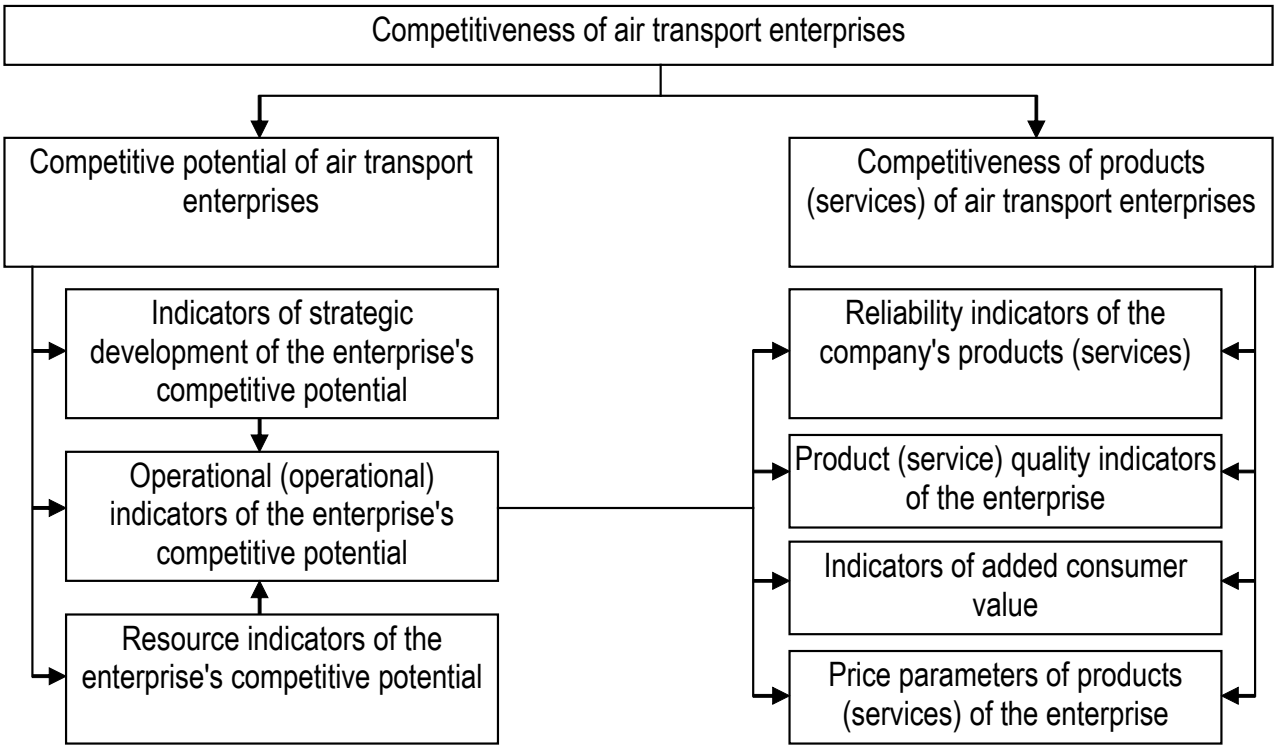

Figure 1 System of ensuring the competitiveness of air transport enterprises
Source: developed by the authors

Thus, the elements of the competitive potential of air transport enterprises and, accordingly, the competitive advantages they provide are divided into three categories: resource, operational, and programmatic and strategic. At the same time, it is the category of operational competitive advantages that directly affects the qualitative indicators of competitiveness of products (services) of the air transport enterprise, which, in turn, are divided into groups of reliability, quality and added value for consumers, as well as a group of price indicators of competitiveness of its products [8].

The competitive potential of air transport enterprises has its own characteristics and is the basis for achieving their overall competitiveness. The competitive potential of air transport enterprises means the existence of an objective possibility of maintaining or increasing competitive advantages in the long term. It also ensures the production of competitive products (services), helps maintain or increase market share, and creates conditions for the development and improvement of their competitive position in the future [3].

The structure of the main elements of competitive potential is different for different types of air transport enterprises - airlines, airports and ground handling operators, etc. The competitive potential of an air transport enterprise can be realized through the economic influence of management and through a number of competitive advantages [5].

Competitive advantage can be defined as any exceptional value of the products of air transport enterprises that provides them with an advantage in the market [4].

It is possible to form a total value of the integrated indicator of competitiveness of an air transport enterprise equal to the sum of the values of the integrated indicator of

product competitiveness and the integrated indicator of competitive potential. This sum should take into account the degree of realization of competitive advantages:

$$Kc = \alpha \times Kcp + (1 - \alpha) \times Kpc \quad (1)$$

where Kc - integral indicator of competitiveness of the air transport enterprise; Kcp - integral indicator of competitive potential; Kpc - integral indicator of product competitiveness of the air transport enterprise; α - weighting factor, the actual degree of realization of competitive advantages (from 0.1 to 1).

Air transport enterprises can achieve a leading position in the market if they have sustainable competitive advantages that can change depending on the cyclical fluctuations of the industry, the conditions of aviation markets and consumer requirements for products (services).

The set of competitive advantages and elements of competitive potential can be divided into three groups [2; 6]:

- resource - possession of resources of a certain quality or quantity (natural or acquired);
- operational - efficient use of available resources;
- programmatic and strategic - the development strategy of the entity (holder of competitive advantages) and the quality of its implementation.

Identification and further realization of competitive advantages on the basis of the existing competitive potential of air transport enterprises makes it possible to form a system of indicators for its assessment.

The proposed structure of a multi-level system of indicators for assessing the competitive potential of the airport is presented in Table 1.

Table 1. Structure of the multilevel system of indicators for assessing the competitive potential of the airport

Groups of indicators	Partial indicators
I. Strategic indicators	
1.1. Business-model of the airport	-structure of airlines' competitive environment; - business process management system; - the system of allocation / distribution of slots by airlines; - the system of regulation and control of operators' activity.
1.2. Market potential	- potential in the field of passenger air transportation; - potential in the field of freight (multimodal) transportation; - transit / transfer potential of the airport; - dynamics of the airport's target market.
1.3. Competitive position	- the share of the airport in the total volume of transportation of the air hub; - target positioning on the market of the air hub; - presence of "direct" competitors within the strategic positioning of competitors; - the airport's investment attractiveness.
1.4. Individual competitive advantages	- loyalty of airlines and passengers to the airport; - personnel management system; - standards and technologies ("know how", resource availability, SGHA); - airport brand.

II. Operational (exploitative) indicators	
2.1. Volumes of services	- the number and structure of serviced flights for the target period; - passenger flow (structure and values for the target period); - cargo turnover (structure and value for the target period); - operations on ground handling (structure and values for the target period).
2.2. Airlines-partners	- number of served airlines by strategic groups; - characteristics of serviced airlines by strategic groups; - dynamics of changes in the structure of serviced partner airlines; - the structure of restrictions on aircraft types and schedules for partner airlines.
2.3. Financial and economic indicators	- the structure of revenues from the "aviation" activity of the airport; - the structure of revenues from "non-aviation" activities of the airport; - the structure and characteristics of the airport's main cost groups; - structure and size of operating profit for the entire period.
2.4. Airport route network	- airport route network configuration; - "width" of the airport route network (number of destinations); - "depth" of the airport route network (characteristics of flight frequencies); - the coefficient of compatibility of flights at the airport.
III. Resource indicators	
3.1. Airport and technical support services	- characteristics of the current airport service structure; - airport infrastructure characteristics; - characteristics of the operating system of dispatching; - the degree of modernization of facilities for maintenance and repair of aircraft.
3.2. Airport complex	- characteristics of terminals (number, bandwidth, class); - structure (number and configurations) of aircraft parking spaces (zones, types); - degree of modernization of terminal equipment; - characteristics of the structure between the terminal connection and parking lots.
3.3. Airport location	- number of airports in the city (point) of base and air hub; - population in the city (point) of base and air hub; - characteristics of the types of transport connections with the airport; - distance from the city and highways.
3.4. Download intensity	- intensity of terminal loading (passenger and cargo); - intensity of loading (use) of airfield infrastructure; - intensity of use of the dispatching system; - intensity of use of aprons and aircraft parking lots

Source: developed by the authors

In order to increase the competitiveness of transport services, it is necessary to organize and implement a nationwide innovation program aimed at increasing the investment potential of the enterprise. Introduction of innovative technologies developed on a scientific basis with the use of new knowledge, subject to compliance with the advanced world technical market of high-tech products [11].

The competitiveness of products (services) of air transport enterprises is formed taking into account industry specifics, which is a necessary condition for the formation of competitiveness of air transport enterprises in general, and, on the other hand, is the result of managing the realization of competitive

advantages arising from its competitive potential. The characteristics used to assess the competitiveness of air transport companies' products are divided into price (air transportation tariff) and quality (onboard service, comfort of flight schedule, etc.). These characteristics determine the respective forms of competition - price and quality (non-price) [4; 6].

To develop the competitive potential of air transport enterprises, it is necessary to develop an integrated approach to managing all elements of its structure to achieve a synergistic effect. All this should be taken into account when developing a strategy for the development of competitive potential, paying attention to the internal and external competitive capabilities of air transport enterprises, which depend on the relevant potentials that determine them.

The competitive potential of air transport enterprises is determined by its internal capabilities, strengthening its competitive position and external factors that can both facilitate and hinder the enterprise in implementing its strategy. Coordinating the development of competitive potential through internal and external opportunities requires a new approach to the formation of competitive potential strategies.

The process of forming a strategy for the development of the competitive potential of air transport enterprises consists of the stages shown in Fig. 2.

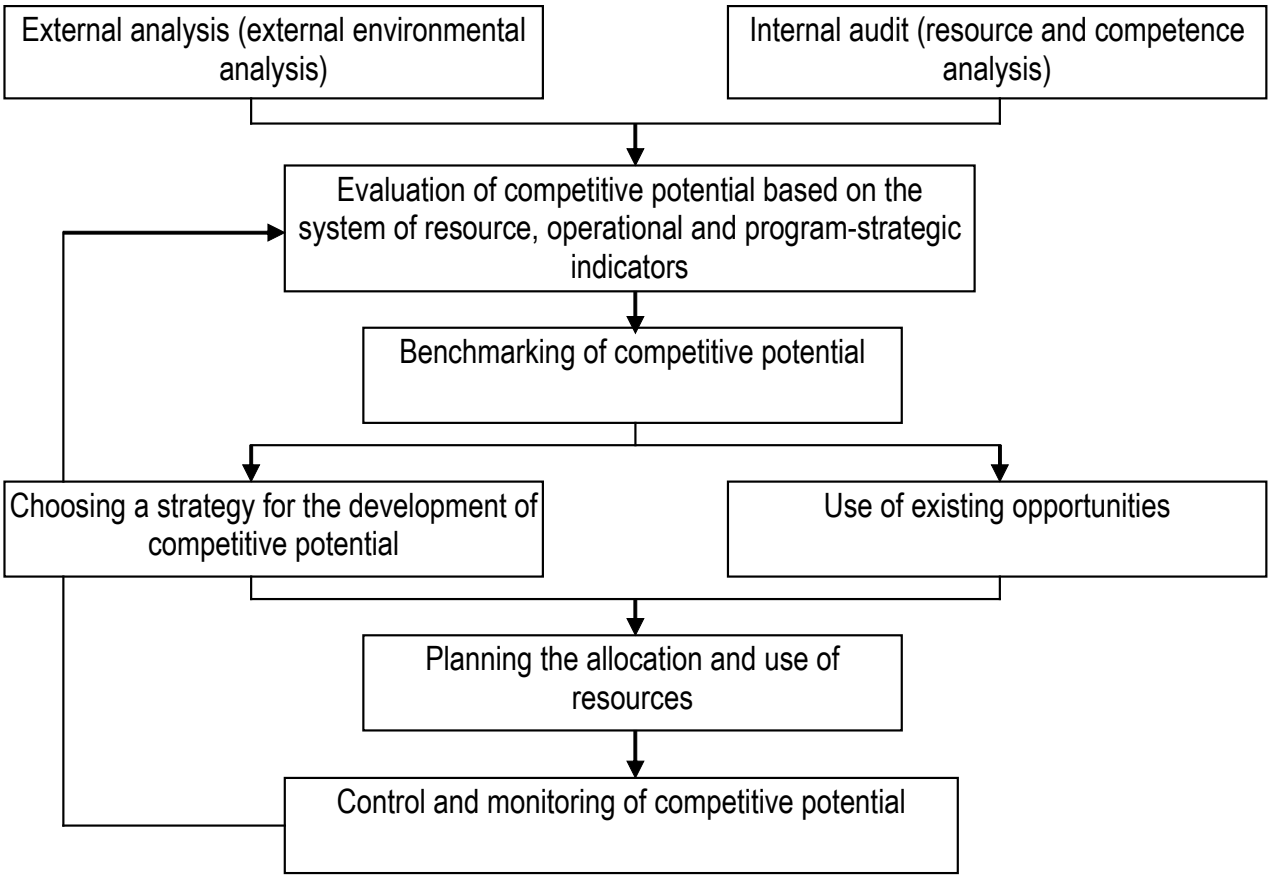

Figure 2 – Algorithm of the process of forming a strategy for developing the competitive potential of air transport enterprises

Source: developed by the authors

The external environment of air transport enterprises is studied to determine the circumstances (or trends) that may affect their ability to fulfill their mission. The external environment includes the air transportation market, government regulation, and

competitor behavior. Typical areas of analysis include the economy, demographics, socio-cultural, political-institutional, and technological spheres [9]. Even at this stage, the study should be strategic in nature; it is necessary to identify threats and opportunities that clearly affect the main direction of development and actions of the air transport enterprise.

After determining the impact of the external environment on the enterprise, it is necessary to consider internal resources, opportunities and constraints. The key at this stage is to correlate internal resources with external threats and opportunities. The strengths of air transport enterprises should be strengthened and weaknesses eliminated. Internal legal, professional, or creative resources should also be taken into account. The first and second stages are preparatory and allow to determine the necessary conditions for developing a strategy for the development of the competitive potential of air transport enterprises.

The next step is the assessment of competitive potential, which includes the analysis of significant structural components and the determination of a comprehensive assessment based on them, taking into account the degree of importance of each of them.

Based on a quantitative assessment of the relevant structural components of competitive potential (according to the system of resource, operational, programmatic and strategic indicators), a comparative analysis of each component of competitive potential is carried out for the entire group of assessment indicators under study and their dynamics is analyzed [10].

Benchmarking of competitive potential includes studying the competitive potential of competitors and other market participants, determining its industry average value, and comparing the competitive potential assessment with the industry average. If the value of the assessment of the competitive potential of the air transport enterprise meets or exceeds the industry average, then further expansion of its competitive potential is not required and the focus is on the realization and use of existing opportunities [4]. In a situation where the assessment of the competitive potential of the air transport enterprise under study is lower than the industry average, the question arises of increasing the competitive potential by choosing an appropriate development strategy. The selection criteria are the internal and external competitiveness of air transport enterprises.

The final stage of the process of developing a strategy for the development of competitive potential is monitoring the efficiency of the use of resources of air transport enterprises. Monitoring of competitive potential includes the collection and analysis of information, comparison of benchmark values with actual values. After monitoring the effectiveness of the use of competitive potential, it is necessary to evaluate it in order to determine how effectively the competitive potential of air transport enterprises is used and whether there is a need for its further development.

Conclusions.

Thus, in order to develop the competitive potential of air transport enterprises, it is necessary to take a comprehensive approach to the process of managing all elements of its structure in order to achieve a synergistic effect. All this should be taken into account when developing a strategy for the development of competitive potential, paying attention to the internal and external competitive capabilities of the enterprise. At the same time, the objects of evaluation when using the presented methodology can be the competitive potential of air transport enterprises, the competitiveness of its products and the competitiveness of the business system as a whole. Thus, the proposed system of indicators for assessing the competitive potential is a key tool for analyzing it and implementing a development strategy in various market segments. The study of the system of ensuring competitiveness and its elements

allows to develop and implement practical measures to strengthen the competitive position of air transport enterprises in the market.

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BEHAVIORAL IMPLICATIONS IN SUPPLY CHAIN RISK MANAGEMENT

Larysa Shchekhovska. «Behavioral implications in supply chain risk management». *This article provides new insights into behavioral implications based on biases and heuristics in SCRM. It is argued that biases and heuristics will play an even greater role in SCRM as the rising complexity of risk management systems has increasingly overstrained the cognitive abilities of decision-makers. The main contribution and central finding of the article is the presentation of a wide array of behavioral implications of the selected biases and heuristics for SCRM. It is differentiated between four major SCRM processes: risk identification, risk assessment, risk treatment, and risk monitoring. Focusing on each process individually allows for a dedicated and in-depth presentation of the behavioral implications in SCRM. It is stated that risk identification, where biases and heuristics such as confirmation bias and the availability heuristics can lead to a skewed identification of risks, resulting in omitted risks or the selection of irrelevant risks. In risk assessment, the behavioral implications can be equally severe with the consequence of incorrectly assessing the impact and probability of risks as caused for example through the availability heuristic or representative heuristic. The risk treatment is equally prone to biases and heuristics, as for example loss aversion or planning fallacy can lead to over- or underinvesting in risk treatments as well as wrong estimates about the required costs and effort. The risk monitoring is impacted through biases and heuristics such as the anchoring and adjustment heuristic or the confirmation bias, due to which risk managers carry out insufficient or unnecessary adjustments regarding their risk management system.*

Keywords*:* supply chain, risk management, beliefs, biases, heuristics, behavior, risk identification, risk assessment, cognitive capabilities, decision-making.

Лариса Щеховська. «Біхевіористичні аспекти в управлінні ризиками в ланцюгах постачання». *Ця стаття висвітлює проблему розуміння поведінкових аспектів управління ризиками в ланцюгах постачання (SCRM). Стверджується, що упередження та евристики відіграватимуть ще більшу роль в SCRM, оскільки зростаюча складність систем управління ризиками все більше перенапружує когнітивні здібності осіб, які приймають рішення. Основним внеском і головним висновком статті є представлення широкого спектру поведінкових наслідків обраних упереджень і евристик для SCRM. В управлінні ризиками в ланцюгах постачання розрізняють чотири основні процеси: ідентифікація ризиків, оцінювання ризиків, обробка ризиків і моніторинг ризиків. Зосередження уваги на кожному процесі окремо дає змогу зробити цілеспрямовану і поглиблену презентацію поведінкових наслідків у SCRM. Стверджується, що під час ідентифікації ризиків підтверджувальні упередження й евристика доступності, можуть призвести до викривленої ідентифікації ризиків, що зумовить нехтування ризиками або концентрацію на несуттєвих ризиках.*

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В оцінюванні ризиків поведінкові наслідки можуть бути настільки ж серйозними, як і наслідки неправильного оцінювання впливу та ймовірності ризиків, спричинені, наприклад, евристикою доступності або репрезентативності. Обробка ризиків однаково схильна до упереджень та евристик, оскільки, наприклад, уникнення втрат або помилки планування можуть призвести до надмірного або недостатнього інвестування в обробку ризиків, а також до неправильного оцінювання необхідних витрат і зусиль. На моніторинг ризиків впливають упередження та евристики, такі як евристика прив'язки та коригування або підтверджувальне упередження, через які ризик-менеджери здійснюють недостатні або непотрібні коригування своєї системи управління ризиками.

Ключові слова: ланцюг постачання, управління ризиками, переконання, упередження, евристики, поведінка, ідентифікація ризику, оцінювання ризику, когнітивні здібності, прийняття рішень

Introduction. In today's business world supply chains typically involve a large number of actors and are complex in nature. They are thus subject to various risks, potentially resulting in supply chain disruptions and a loss of performance. There are many examples of supply chain disruptions that underpin the increasing frequency and severity of occurring risks, ranging from natural disasters such as earthquake to effects caused by humans such as the recent trade dispute between the U.S. and China. Given the immediate implications of supply chain related risks for business and society, supply chain risk management (SCRM) research has become increasingly important with multifaceted developments and theoretical discussions.

Analysis of recent researches and publications. The study of behavioral biases and heuristics in risk management is the subject of scientific interests of the following foreign scientists: J. Akerlof, D. Ariely, M. Eichen, D. Kahneman, G. Le Bon, K. Loibl, J. Longo, R. Olsen, F. Reidel, K. Sunstein, and others. Recently, there has been a manifestation of interest in these issues by domestic scholars – theoretical aspects of behaviorism have been considered by V. Heets, O. Yevdokimova, G. Lozhkin, T. Kizima, V. Krykun, S. Kuzminov, and others.

However, despite a thorough analysis of these problems by foreign scientists, the domestic scientific literature lacks a comprehensive substantiation of the main patterns and specifics of behavioral biases in supply chain management.

The purpose and objectives of the study. The purpose of the article is to disclose the essence of risk management from the standpoint of the inseparability of the relationship between risk, biases, behavioral uncertainties and to develop, on this basis, scientifically sound recommendations for risk management in SCM.

Basic material and results. When selecting which biases and heuristics to include in the results for further discussion, this study builds on a two-step process: first, by adhering to a framework linking biases and heuristics with main cognitive activities and second, by taking into account the frequency and intensity with which each bias and heuristic was discussed. To start with, we adhered to Gino and Pisano, who proposed a framework in which they attribute several bias or heuristics to one main cognitive activity [5]. They argue that whenever people solve problems or make decisions they run through four distinct mental activities: info1mation acquisition, information processing, perception of future outcome and handling of feedback. The authors matched this framework with the presented SCM process framework by linking each SCRM process with its predominantly required cognitive activity (Fig. 1).

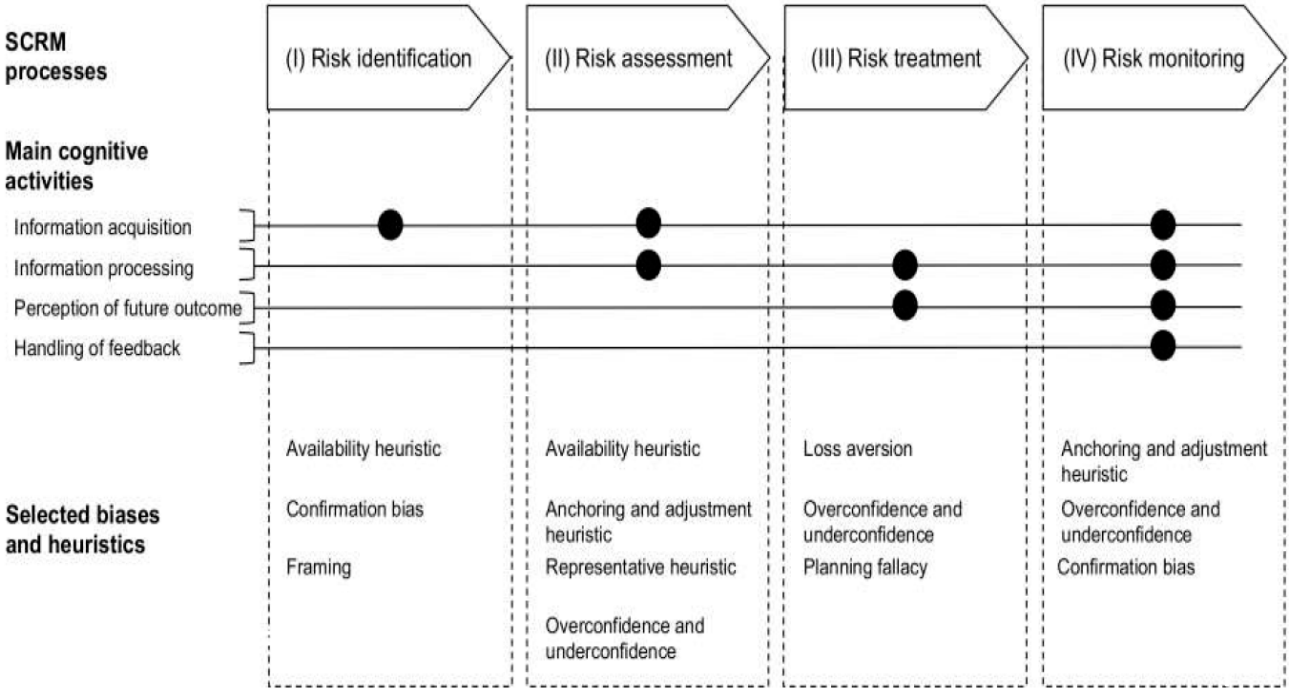

Figure 1 Main cognitive activities and selected biases and heuristics
Source: [5]

Behavioral implications in risk identification. The availability heuristic leads to a skewed selection of infonnation or events. The easier an event comes to mind the more attention is devoted to this event. This can lead to a situation where risk managers primarily identify any risks that come to mind easily. One example are risks that get extensive media coverage. While it should be assumed that to a certain extent every manager uses news and media channels to stay informed and identify risks, the latest technological developments led to news reports and media being a major catalyzer for how we take in and perceive our environment [1]. The increasing number of communication channels and news services results in information overflow with people experiencing news fatigue and having "difficulties decoding complicated news stories" [6], possibly only sticking to the big headlines. Similarly Wahlberg and Sjoberg note that "risk perception may be affected by the media via availability (more information gives a stronger effect)" [7]. Therefore, being ignorant of the availability heuristic increases the likelihood that risks that have been prominent in the media will be more readily identified. This could lead to risk managers putting a certain risk type on the list simply because it was reported on TV even though it is not relevant to their own company or supply chain, or else omitting a certain category of risk, because it was not reported on [9].

The confirmation bias results in people seeking and interpreting information in support of their current view instead of referring to objective information. This phenomenon plays an important role in irrational risk identification when risk managers stick to initial identified risks by relying on one-sided information only, while all counter-arguments are ignored. For example, Gino and Pisano report that managers selectively browse through databases in support of their initially held beliefs [5]. Similarly, the classical SCRM literature proposes the introduction of seemingly objective risk identification tools and methods [14]. Despite their generally helpful character, we argue that these tools and methods might also reinforce the confinnation bias in a way that risk managers only extract information selectively in support of their initially held opinion. Especially in the

context of the above-mentioned information overflow from news and media and the recent evolution of social media channels (such as X), it is easy to exhibit this behavior and only take in complementary arguments due to the sheer supply of information across various media and news channels.

Framing describes the effect of decision-makers reacting differently to the same choice problem, depending on how it is framed (i.e., formulated). Not every potential risk is always formulated in the same standardized way but its presentation can take different forms, ranging for example from conversational exchanges with colleagues and other stakeholders to formalized risk reports. Hence, the reaction of risk managers is affected by who mentions a potential risk and in which context this happens also affects how the risk managers reacts.

Behavioral implications in risk assessment. The availability heuristic comes into play when making judgments about risks and their related probabilities [13]. During the process of risk assessment, in two cases the availability heuristic can lead to skewed judgments regarding the probabilities and consequences of events, and thus importance of risks.

The first case relates to the ease with which events can be recalled. The easier an event can be recalled, the higher its subjective probability to (re)occur. Evidence in this regard stems from customer behavior research, where Folkes could show that a customer's ability to recall product failure incidents correlates with the estimated likelihood of product failures [17]. This could for example manifest severely where certain risks with an objectively high probability and/or high impact have not occurred in a while, or where the responsible risk manager has yet not witnessed these risks, thus leading to underrated probability. Likewise, a risk manager, who has faced certain risks comparatively often, might overrate their probabilities.

The second case in this regard relates to the ease with which background information can be identified. In searching for additional information from which probability can be derived, the risk manager might also only choose background risk information that is easy to identify and then base the judgment of probability and impact solely on this information, leading either to underrated or over acted probability of risks.

In both cases it is quite likely that due to the availability heuristics these risks will receive too little or too much attention during their assessment.

As impact and probability are often expressed in quantitative terms, the adjustment and anchoring heuristic plays an important role in risk assessments, but might also play a role when these dimensions are expressed in non-quantitative terms such as "low", "middle", "high" [6]. As outline above, initial values, as for example those acquired through expert assessments, might be used by the risk manager as an initial anchor from which only insufficient adjustments are being made, resulting in a skewed probability-impact-matrix.

We argue that the easier risk probability or impact information can be recalled or retrieved, the more is likely it is that this information will serve as the first anchor. This is particularly relevant in this process where the reliance on expert advice, which is easily available, is the chosen form of information acquisition [19]. In contrast, if the retrieval of information is less easy or if multiple anchors of similar availability exist, the anchor might have a weaker effect, leaving more room for adjustments by the risk manager. Evidence for this link between adjustment and anchoring heuristic and availability heuristic can also be found in psychological research: Englich showed that a higher accessibility of the anchor along with people having more information about the anchor increases the magnitude of anchoring [6]. This example also demonstrates how multiple biases and heuristics can amplify each other or

simultaneously have an effect on the risk manager's behavior.

That risk managers often assess risks by comparing their probability and consequences underscores the relevance of the representative heuristic [12]. This heuristic is likely to have an effect on risk manager's decision-making as it comes into play when judging the probability of events by transferring and attributing probabilities from seemingly similar events [4]. Here, the transfer of probabilities between seemingly similar risks could be a common method and pitfall, as the risks involved in this transfer could also be not alike at all. This might eventually lead risk managers to treat similar risks or events as being the same and not scrutinize each one sufficiently. Consequently, they might lump certain risks together because they have for instance a similar source or similar effect, when in actuality the risks aren't similar in terms of probability or impact.

Overconfidence and underconfidence describe the effect of people over or underestimating their own capabilities, which in the context of risk assessment can have severe implications for whether risk managers allow their probability and impact assessments to be challenged. This view is supported by Tazelaar and Snijders who found that in risk assessment "specialized expertise goes with increased certainty about the assessments" [11]. Therefore, risk managers might cling to their assessments, even if these are flawed. Secondly, overconfidence and underconfidence might also be present in the managers' belief about his ability to respond to a risk in the following risk treatment process. Consequently, during the assessment of risks this might lead to an attitude of higher [lower] risk tolerance due to overconfidence [underconfidence] in their ability to respond to a risk. And finally, overconfidence could be present in supply chain manager's beliefs in the capabilities of their general management and thus increased certainty about the robustness of the processes they are responsible for. Here managers might assume a lower probability of risk occurrence or analogously a lower risk impact as a result of biased judgments about their own managing capabilities.

Beyond the focus on one's own capabilities, Moore and Healy note that overconfidence can also occur with regard to the belief in the capabilities of others [14]. While we assume that the same is valid for underconfidence as well, this is an interesting observation with strong implications for SCRM which is often a team effort. One can imagine a team of risk managers with one or more of them being more extroverted or having better abilities in selling their perceptions and convincing others. In this case it is likely that the confidence others attribute to their risk assessment competencies exceeds their actual competencies in risk assessment.

Behavioral implications in risk treatment. Our research revealed that loss aversion is highly relevant to the risk treatment process. However, further discussion extended this view and added a new perspective where, under certain conditions, the risk manager might behave contrary to the concept of loss aversion but exhibit a behavior comparable to a risk seeker.

Starting with implications in the context of the initial understanding of loss aversion, the majority of examples provided was centered on risk managers whose threshold of investing in objectively reasonable risk treatments is relatively low in comparison to the risk exposure values (product of probability and impact). This effect might be particularly prominent in low-margin companies with relatively tight budgets and for risk exposure values with a relatively low probability that might lead a "nothing is going to happen anyway" attitude where smaller, certain downsides are not accepted despite objectively larger upsides [18].

On the contrary, the discussions also revealed a new perspective that shows the opposite behavior. While loss aversion entails risk affine behavior with regards to loss (where a person avoids certain losses even in

the light of large loss risks), many managers follow a credo of creating upsides while limiting downsides. Such behavior involves avoiding risks at almost any price, because not only does risk materializing carry a cost for the company, but potentially also to themselves (i.e., loss of job or negative affect on career advancement), while the certain loss (e.g., of an insurance) is fully covered by the company and has little negative effect on their career. Yet this behavior also creates suboptimal results as it involves overly cautious behavior.

Both overconfidence and underconfidence need to be dealt with in the risk treatment process. Overconfidence can either be present with regard to the risk manager's beliefs in their own ability or in the abilities of their own organization. Starting with risk managers who are overly confident in the choice of a ce1tain risk treatment, the choice of alternative treatments will be omitted even though these might be more efficient and effective. The chosen treatment is then strictly followed, whereas the alternative options are ignored. For example, risk managers might overestimate their own ability to build high-performance forecasting systems, eventually preventing the company from holding a sufficiently high level of safety stocks [17]. In addition, risk managers might also be overly confident in their own and the organization's risk treatment capabilities and, therefore, fail to invest in any further proactive risk treatments.

Conversely, also in SCRM, underconfidence – rather than overconfidence – might particularly be observed in cases where risk treatment involves difficult tasks. In this case, risk managers might rather be underconfident in the chosen risk treatment or the organization's abilities to cope with the risk. Thinking this further, reveals that underconfidence in the risk treatment process will lead to additional or over-dimensioned treatments that are actually not necessary and, therefore, incur additional costs that would be avoidable from an objective perspective.

The development and the execution of treatments of supply chain risks relates to a number of planning decisions. For this reason, the planning fallacy can also have severe implications in the risk treatment process. Here, risk managers will underestimate the time, effort and resources that are necessary for the processes that are involved in implementing and executing treatments to deal with supply chain risks, namely the preparation, response and recovery processes [8].

Behavioral implications in risk monitoring. In risk monitoring, it is particularly important to sense trends (e.g., the development of certain risk related information over time) and to update and adjust the decisions made in the previous SCRM processes accordingly [19]. It was revealed that anchoring and adjustment play an important role as again many quantitative anchors are involved in this process. In this case, anchors could be the scores for risk probability, risk impact or risk duration that are taken from a previous period.

When updating these scores, risk managers might treat previously established scores as an anchor and thus omit to update them correctly as current trends and new information are not taken into account sufficiently. Regarding the increasing complexity in supply chains, updating score and thus the impact of anchors will become even more relevant as the supply chain and thus risk management loses its static character and shifts in circumstances may occur at any time [15]. One further example for anchoring and adjustment in the monitoring process is the readjustments of one's own organization's risk acceptance level. For example, despite changes in the business model of the organization, which require a much lower risk acceptance level due to less robust processes, the risk acceptance level is adjusted by starting from the initial level (anchor) and subsequently not

ending up at the correct risk acceptance level that would be objectively justified.

Overconfidence and underconfidence, which have already led to suboptimal procedures in other SCRM processes, can also be problematic in risk monitoring and the related activities of sensing trends and updating and adjusting previous decisions. If risk managers are overly confident that the risk categories and risk treatments were already optimally designed, they might refrain from updating them. Similarly, risk managers may also be overly confident in the methods of measuring the impact and probability of a given risk, leading to a rather cursory processing of these values. And from a broader perspective, in being too confident, the risk manager might not sufficiently question existing risk management procedures. Conversely, if risk managers are underconfident, they might put too much effort into developing an updated probability measurement system, update the categorization of their risk treatments or replace risk treatments that might actually work well. Either way, risk managers will not behave rationally in challenging existing procedures.

Problems may arise when risk managers only make use of information that confirms their own view about a certain risk [1].

In spite of the importance of behavioral SCRM, as outlined earlier in this article, surprisingly few contributions exist that bring together SCRM and the behavioral perspective. Nowadays, supply chains are complex systems, which underline the high demands towards the cognitive capabilities of decision-makers. However, instead of an explicit consideration of the behavioral perspective and the effect of biases and heuristics in SCRM, in most cases, it has been assumed, explicitly or implicitly, that the decision-makers being involved in risk management decisions are perfectly rational. This research is the first to challenge this perspective by demonstrating the relevance of biases and heuristics in SCRM. By presenting several biases and heuristics within the context of different SCRM processes, this research provides the ground for both academics and practitioners to become aware of the corresponding behavioral challenges in SCRM and to take this new perspective into account in the future.

This study is the attempt to discuss the importance and implications of biases and heuristics in SCRM. The implications are not isolated for theory and practice but strongly interwoven as the theoretical advancements proposed in the following are tied to a strong impetus for a different approach of how to manage supply chain risks in practice. This research posits two main theoretical and managerial implications – one on the individual (micro) level and one on the organizational and network (macro) level.

Starting with the individual (micro) level in the context of theory, this study highlights several severe implications of biases and heuristics across different SCRM processes. It is shown, for example, how risk identification becomes skewed and incomplete due to underlying biases and heuristics such as the availability heuristics or the confirmation bias. The examples of these biases and heuristics challenge the traditional assumption that risk managers are rational decision-makers. While it has to be acknowledged that previous research building on this limited assumption has still brought important progress and new insights to SCRM, with the results presented in this study, it is clear that a more comprehensive theoretical approach is warranted. Ideally, future research should acknowledge that rationality has rarely been challenged as an assumption about SCRM decision-makers. It should therefore accept that they are subject to various biases and heuristics leading to results that deviate from normative expectations. In line with the definition of behavioral research above this study proposes the following alterations: first, beyond monetary gains, decision-makers in SCRM are also motivated by less obvious drivers [8]. This may also include further psychological factors beyond biases and

heuristics as for example behavioral antecedents such as perceptions, values and beliefs or social preference [14]. The second adjusted assumption about SCRM decisions is that they are often made subconsciously. Third and finally, the assumptions about decisions makers in SCRM should also include the notion that decisions taken in the risk management context do not always lead to an optimal solution. This includes for example skewed judgment about risk probabilities as a result of the representative heuristic or risk treatments not being realized due to loss averse decision-makers. With these three new assumptions in mind, the SCRM discipline will be equipped to conduct future research without neglecting any behavioral constraints that cannot be denied in practice. Hence, this behavioral perspective about individual decision-makers in SCRM also has strong managerial implications on the individual (micro) level.

Bringing the biases and heuristics of the decision-makers in SCRM into the center of the discussion also calls for a new perspective to be taken by practitioners. As flawed or incomplete decisions in SCRM can have severe implications for the company or the entire supply chain, decision-makers themselves should strive to counterbalance biased decisions. In other words, this means to use "workarounds" for their own irrationality that could help them to strive for more "optimality, efficiency, stability and control" [11]. Managers could strive to design processes and build organizations that are less prone to the prevailing biases and heuristics. Helpful insights in this regard may also stem from related behavioral SCM research areas that are further advanced in dealing with biases and heuristics as for example inventory or supplier selection decision-making. Examples from these areas include providing decision-makers with direct and open feedback on their suboptimal decision to reflect their cognitive shortcomings and increase their awareness in this regard, standardized presentation of information that would mitigate the effect of framing as well as the formulation of decision criteria ex-ante so that a biased decision-maker could not alter them [8]. In the context of SCRM this would mean standardizing 1isk reports and discussing thresholds for risk assessment prior to the actual assessment of risks. Further suggestions include the decomposition of tasks which, applied to SCRM, would for example prevent decision-makers from overestimating the relevance of risks that they have previously identified by themselves [2]. The development of this concept also calls for broadening risk management decisions by involving multiple decision-makers with a more diverse background in terms of education, area of expertise, origin and gender, for example, and letting them interact in form of brain writing instead of brainstorming, or anonymously in multiple rounds based on the Delphi technique [10]. While these examples present only a small extract from a wide array of potentially applicable debiasing mechanisms that might also work in SCRM, it should not be concluded that practitioners could become fully immune to the aforementioned problems. Instead they should strive to deal with the prevailing biases and heuristics as effectively as possible while acknowledging that some limitation will always prevail. That means that they should not maintain the illusion that they will ever be able to take full control over a socio-ecological system that is as complex and adaptive as a global supply network.

Turning to the organizational and network (macro) level is a logical step as behavioral phenomena and their implications in this regard often have their origin at the individual level and emerge to higher-order levels like team, organization, and network [12]. Consequently, adjusting the theoretical assumptions about the decision-maker in risk management also calls for an extended theoretical perspective on risk management in supply chains or networks. Based on the results of this study, which underline the implications of biases and heuristics in an era

of increasing complexity, it is time to propose a new approach and extended scope of SCRM.

In practice, the original scope of risk management was the corporation. Corporate risk management aimed to manage individual risk categories, typically financial risks, which were separated in silos [14]. More recently, risk managers acknowledged the interrelationships between risks, which led to a holistic approach: enterprise risk management [8]. Most importantly, this approach allowed the simultaneous management of the different operational risks that could occur within one's own organization. Finally, the aim of supply chain risk management nowadays is to broaden the unit of analysis by going beyond one's own organization, thereby also attempting to identify, assess, treat, and monitor risks that are manifested upstream, downstream, and laterally in the value system [3]. The substantial achievement of this approach is that it attempts to take control of the risks that occur in all parts of the supply chain. While the advancement from a singular view to a multifaceted view with numerous interdependent risks across different stages of suppliers and buyers has truly enriched the theoretical perspective, this study has outlined the limitations of this approach.

Conclusions.

Despite the underlying complexity of interdependent supply chains and the demonstrated behavioral constraints of the decision-makers as an integral part of this network, most of the existing research formulates process models that do not explicitly account for cognitive limitations of the decision-maker but instead proposes risk management tools which are limited in their effectiveness when being applied by a rationally-bounded decision-maker. This research therefore proposes to advance to a fourth stage of an adaptive system view of supply network risk management. This view accounts for three important developments: first, as one of the main drivers of biases and heuristics, the increased complexity is much better addressed when taking a systemic view [4]. Second, the understanding that a supply chain cannot be perceived as a static and fully controllable system, and has therefore to be described as a complex adaptive system or socio-ecological system [10]. And third, that a supply chain risk manager's decision-making cannot be perceived as sufficiently rational to cope with the nature of such a system. Finally, taking the supply chain risk manager's perspective from a practitioner's angle leads to the managerial implications at the organizational and network (macro) level.

Supply chain risk managers are not in the situation of sitting in a control room that would enable them to oversee the entire end-to-end supply chain with all the risks that occurs therein. Rather, by acknowledging their irrationality and thus fallibility, they should become 'humble' decision-makers. In other words, this consequence would mean to strive for less "optimality, efficiency, stability (...) and control", and more "flexibility, diversity and adaptive learning" [16]. This also calls for an increased importance of trust in the social exchange relationship. If not all risks can be controlled for in the first place (1) a stronger willingness to accept risks is required instead, while (2) simultaneously "relying on an exchange partner in whom one has confidence". Both of these conditions are the foundations of trust, which demonstrates how the proposed fourth stage of an adaptive system view of supply chain management implies that organizations need to select trustworthy supply chain partners. While at first glance there might be a contradiction between this view and the call for debiasing mechanisms and technological support on the individual level as formulated above, this research argues that both of these views can complement each other. While ongoing technological advancements, such as machine learning and software robots, will increasingly help supply chain risk managers to get closer to rational decision-making, there will be a limit to this approach, which requires the rather humble approach of non-rational decision-makers who are at least

aware of their shortcomings and acknowledge the importance of behavioral perspectives and social relationships.

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NEW CHALLENGES FOR LOGISTICS IN THE CONDITIONS OF MILITARY OPERATIONS

Dmytro Bugayko, Volodymyr Reznik. "New challenges for logistics in the conditions of military operations". *The logistics sector was one of the most important and key during the martial law and underwent significant changes. A survey conducted by Kievstar Business Hub in 2022 and 2023 showed the dynamics of the development of the logistics sector during the war. For example, last year, one of the main reasons for business closures was the disruption of the logistics chain. This year, it is no longer a priority as companies gradually adapt to the challenges of wartime. The state of logistics at the beginning of the full-scale Russian invasion of Ukraine was difficult. But it becomes clear that the direction is slowly recovering in 2023, because the number of professional offers in the industry is increasing. This, of course, is some what less dynamic compared to the labor market in general. However, it is positive. But there were also some challenges occurred to the logistics and supply chain management of industries and enterpises . A lot of them will be researched during the article.*

Keywords*:* transport system, cargo transportation, multimodal transportation, optimization processes, routs planning, delivery scheme modelling.

Дмитро Бугайко, Володимир Резнік. «Нові виклики для логістики в умовах бойових дій». *Сфера логістики була однією з найважливіших і ключових під час воєнного стану і зазнала значних змін. Опитування, проведене Kievstar Business Hub у 2022 та 2023 роках, показало динаміку розвитку сфери логістики під час війни. Наприклад, минулого року однією з головних причин закриття підприємств було порушення логістичного ланцюжка. Цього року це вже не є пріоритетом, оскільки компанії поступово адаптуються до викликів воєнного часу. Стан логістики на початку повномасштабного російського вторгнення в Україну був складним. Але стає зрозуміло, що напрямок відновлюється у 2023 році, адже кількість професійних пропозицій у галузі зростає. Це, звичайно, дещо менш динамічно, порівняно з ринком праці в цілому. Проте, це позитивно. Але також виникли деякі*

проблеми з логістикою та управлінням ланцюгом поставок галузей і підприємств. Багато з них будуть досліджені в ході статті.

Ключові слова: транспортна система, вантажне перевезення, мультимодальне перевезення, процеси оптимізації, планування маршрутів, моделювання схеми доставки

Introduction. The industry faced difficulties not only during the war years. But now the situation is constantly changing and there is a need for quick and effective decision-making. What are the challenges facing logistics in peacetime? - Inventory management - the more inventory, the greater the amount of frozen financial resources. -Search for suppliers and delivery to warehouses - typical conflicts regarding volumes, terms of supply and supplier selection. - Basic conditions of supply - risks, costs, exchange of documents and other issues between counterparties. Logistics is a dynamic industry, and its effective operation requires an experienced management team. The above-mentioned problems are complicated by the conditions of martial law. Currently, it is impossible to keep goods in stock for a long time - in the event of an attack, they are lost. - Change of storage conditions. Warehouse deployments typically take around three months, but now they should be ready to organize secure and integrated warehouses within 7-14 days. - Increasing the complexity of logistics operations. Roadblocks, checks, non-transparent restrictions on movement during the curfew. - Sudden changes in routes. It is necessary to plan backup routes in advance in case of new attacks.

The main challenge for Logistics during the war are challenges in supply chain and multimodal transportation of goods. Multimodal transportation is the transportation of any goods by two or more modes of transport, organized by one Logistics Company. Carriers are allowed to tow delivery vehicles belonging to other companies. Intermodal transport is the transportation of goods under a single contract by at least two means of transport; the carrier is responsible for the entire transport, even if the transport is carried out by different means of transport (e.g. rail, sea, road, etc.). The main objective of the transport company and its personnel in intermodal transportation is to deliver the goods ordered by the manufacturer safely, completely and on time. [1]. The article is a logical continuation of a number of publications devoted to the development of multimodal transportation development of Ukrainian scientists Y. Kharazishvili [2, 3, 5], D. Bugayko [2 – 6], A.Antonova [5], M. Hryhorak [4], Y. Ierkovska [6], O. Ovdiienko [4], V. Marchuk [5], V Lyashenko [3], Polish scientists Z.Zamiar [5] and scientists of other countries..

The purpose of the article is to provide research is to provide the theoretical foundations and problems and challenges of managing logistics industry and to develop ways and project recommendations to avoid the additional risks for logistics sphere and 3PL logistic companies during the martial law. Sometimes the exact samples will be used (on the example of Freight Forwarding Organization "Freight Transport Partner, who is the 3PL provider of Logistics Services).

Presentation of the main results. In wartime, new methods and processes need to be found as quickly as possible. Only experienced managers with experience in different niches and projects can do this. How to solve the problems facing the industry - useful tips based on the example of Freight Transport Partner interaction with Ukrainian businesses. There are several variants of ways for increasing the operational results of the Logistics company during the martial state.

1) Attract top managers with experience in different niches. (The more examples, the better the variability of results)

2) Ability to choose between main action, backup and emergency options. –

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3) Re-establish and improve efficiency. (Outsource logistics processes and have a coordinated team already working on them.)

Table 1. Offers of the risks affecting on micro-level of Logistic enterprise during the martial law

A group of risks during the martial state	Brief description	Ways to avoid the risks:
1. Operational risks	1)Spoiling and damaging cargo during transportation:	Correct packing of the cargo, following the conditions of cargo transportation, trying to fit the time limit for handling of the special cargo
	2) Appearing of some delays and short comes during the cargo transportation process	Correct and experienced planning during the cargo transportation, taking into account factors influencing such incidents (such as queues on border (dangerous goods are handled without queues) hiring of the experienced cargo brokers, to avoid mistakes in declaration), additional profit to compensate consignee the delay.
	3) Risk of stealing the cargo	Correct route and itinerary planning, correct cargo insurance covering all the possible risks, using secure parking lots (in case pf cargo transportation).
	4) Risks of additional costs appear	Correct documents processing, (estimation of price and value of the cargo in advance) because it directly influences the prices and procedures on border.
	5)Risk of losing the customer before loading	Remain the contacts of your partner and sub-contractors confidential before signing the agreements
2. Non-operational (external)	1) The cargo and warehouse is being attacked	Moving distribution centers abroad or in remote place from fighting operations, but in direct company can not fully influence this factor
	2) Delays in payments in the side of customer or nascence of payment at all	During such difficult situation in economy and country in general delays in such kinds are also able to appear. Logistics company works always with payment in advance or payment before fully unloading the cargo.
	3) Risk of cooperation with swindlers	Hiring experienced lawyer, checking the basic documents of customer company, contacting not only with one officer of the receiving company.

Source: Developed by Dmytro Bugayko, Reznik Volodymyr

4) If the company is experienced, organize work and staff immediately and select employees for linear processes. - Track mile by mile. In case of air transportation

freight-forwarding) If each flight has a dedicated manager, non-standard situations can be resolved very quickly. - Outsource registration. Take on cargo storage, processing and delivery, as well as customs clearance, broker registration and profit representation before licensing authorities.

5) Find and organize a new storage warehouse with security and management systems.

Secure line workers in advance and 'reserve' additional sites for shipments. (it suits for all kinds because unloading and changes of documents are also applicable for truck transportation of transportation).

When organizing the delivery of dangerous or perishable goods, the main goal is to ensure the efficiency of the entire process, including minimizing costs, applying competitive tariffs and ensuring the integrity of the cargo. In other words, the main factors affecting the overall performance of a logistics provider are cargo, delivery process and efficiency. When delivering certain types of cargo, there are significant differences in the organization of delivery of various types of special cargo, as each of these elements has its own characteristics, which are considered separately. Existing types of containers and packaging, as well as containers, can be used to organize transportation of perishable and dangerous goods and to form cargo units with different volume and mass characteristics. The task of determining the optimal size and number of cargo units is key both for risk management and for improving the efficiency of cargo delivery systems that have both dangerous and perishable characteristics. The use of stronger containers designed for longer transit times and packaging with more refrigerants can increase the total delivery time if the probability of cargo damage is constant, or reduce the probability of damage if the delivery time is constant. In addition, more reliable packaging with more refrigerants ensures the integrity of the cargo in case of irregular fluctuations in the ambient temperature or violations of the delivery technology.

In addition to such factors and risks the war condition added the new one challenges, which are described by the author at the Table 2.

Table 2. Dynamics of volumes of cargo transportation by types of transport in Ukraine, million tons, comparing the pre-war period and martial state.

№	Type of transport	Years									2022 in % by 2021
		2013	2014	2015	2016	2017	2018	2019	2020	2021	
1	Total of all transport including:	1837	1623	1474	1543	1582	1643	1579	1641	…	…
2	Rail	444	386	350	343	339	322	322	306	314	102,9
3	Road	1261	1131	1021	1086	1122	1206	1206	1232	…	…
4	including car companies	126	131	109	123	126	134	190	152	224	147,4
5	Sea	3	3	3	3	2	2	2	2	2	95,2
6	River	3	3	3	4	4	4	4	4	4	96,7
7	Air	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	92,7
8	Pipeline	126	100	97	107	115	109	113	97	78	79,6

Source: State statistics service-[Electronic source]-Link- https://www.ukrstat.gov.ua.
Developed by: Reznik Volodymyr, Bigaiko Dmytro

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Some conclusions can be made out of this Tanle above such, as the war clearly revealed the shortcomings of the current situation. First, large volumes of cargo are stored only in certain parts of the country and routes that pass near dangerous areas and strategic objects are used. Logistics should be more integrated. After all, this approach turned out to be the only way to survive in times of crisis. Reorganization of storage systems, anticipation of risks and development of new routes will be the starting point for the post-war recovery of logistics. Optimizing freight insurance coverage is only one of the measures to minimize risks. The main measures are prevention and risk management. Supply chain security is now recognized as a theoretical approach to transport logistics. In this context, the organization of safe delivery of goods, including such key aspects as ensuring the integrity of the goods and compliance with deadlines, has become of great importance. Ensuring the integrity of the cargo at any stage of transportation is of great importance, as it affects further processes. Therefore, ensuring the integrity of cargo during transportation is one of the main preventive measures for carriers to avoid risks and potential losses. Implementation of various measures to reduce risks requires sufficient costs. In order to choose specific risk reduction methods, it is necessary to compare the level of risk with the costs of risk prevention and management.

According to the Customs of trade and International conventions of Cargo Transportation, The International commercial terms and trade are applicable in conflict situations (including war conditionals, if the previously signed agreement didn't solve such problem (see Table 3).

Table 3. The most popular terms and abbreviations of international trade applicable to solve the incidents with cargo during transportation

Abbreviation of the term	Key moments	Application at transport modes and ways of delivery	Application by type of cargo
EXW	Transportation is fully paid by purchaser The risk is transported from purchaser to buyer since the obtaining the cargo Carrier is not responsible for cargo since the moment of transferring it to the purchaser	Air transportation Railway transportation Maritime transportation Multimodal transportation	General cargo Group age traffic Full-container load Bulk cargo Dangerous cargo
FCA	The carriage is fully paid by the purchaser of cargo, the risks are transferred to the purchaser since the transferring of the cargo at the previously agreed place. The costs are transferred to the seller since the moment of cargo transferring	Air transportation Maritime transportation	General cargo Group age traffic Full-container load Bulk cargo
CPT	Carriage totally prepaid The risks are transferred from seller to buyer since the cargo transferring to carrier,	Air transportation Railway transportation Maritime transportation	General cargo Group age traffic Full-container load Bulk cargo

	the purchaser is engaged in compensation of the risks that are not previously written in agreement Seller is not responsible for the cargo after it's receiving by the purchaser	Multimodal transportation	Dangerous cargo
DDU	Carriage is paid by the seller, risk is transferred during the location of cargo at harbor, costs are transferred from seller to buyer until the moment of carriage at definite place	Air transportation Maritime transportation Mixed transportation Automobile transportation	General cargo Group age traffic Full-container load Bulk cargo Dangerous cargo

Source: Incoterms-2020

The survey revealed two areas in which misunderstandings most often occur. Misunderstanding of Incoterms terms. The first is a misunderstanding of Incoterms, which is that Incoterms are rules that apply to contracts of carriage, not contracts of sale. It is a common misconception that there are rules that apply. Second, it is sometimes thought that Incoterms covers all obligations associated with contracts of sale. Incoterms are sometimes considered to cover all obligations that the parties wish to include in the contract. Sometimes they are considered to cover the following. However, as always emphasized by the ICC, Incoterms apply only to the relationship between the seller and the buyer under the contract of sale. However, as always emphasized by the ICC, Incoterms apply only to the relationship between the seller and the buyer under the contract of sale. Only in certain clearly defined aspects. Exporters and importers should consider the following points. Exporters and importers need to take into account the practical relationship between the various contracts necessary for the implementation of international trade transactions. In international trade transactions, not only sales contracts are used, but Incoterms are applied not only to sales contracts, but also to transport, insurance and other contracts. transport, insurance and other contracts, as well as insurance contracts and financing agreements. Incoterms relate to only one of these contracts, namely the contract of sale.

In spite of all the new challenges for Logistics, during the war period, the sphere is developing, some increasing are also occurred, according to the biggest work site in Ukraine, the sphere is highly growth comparing with the previous period. The results are represented by the Author.

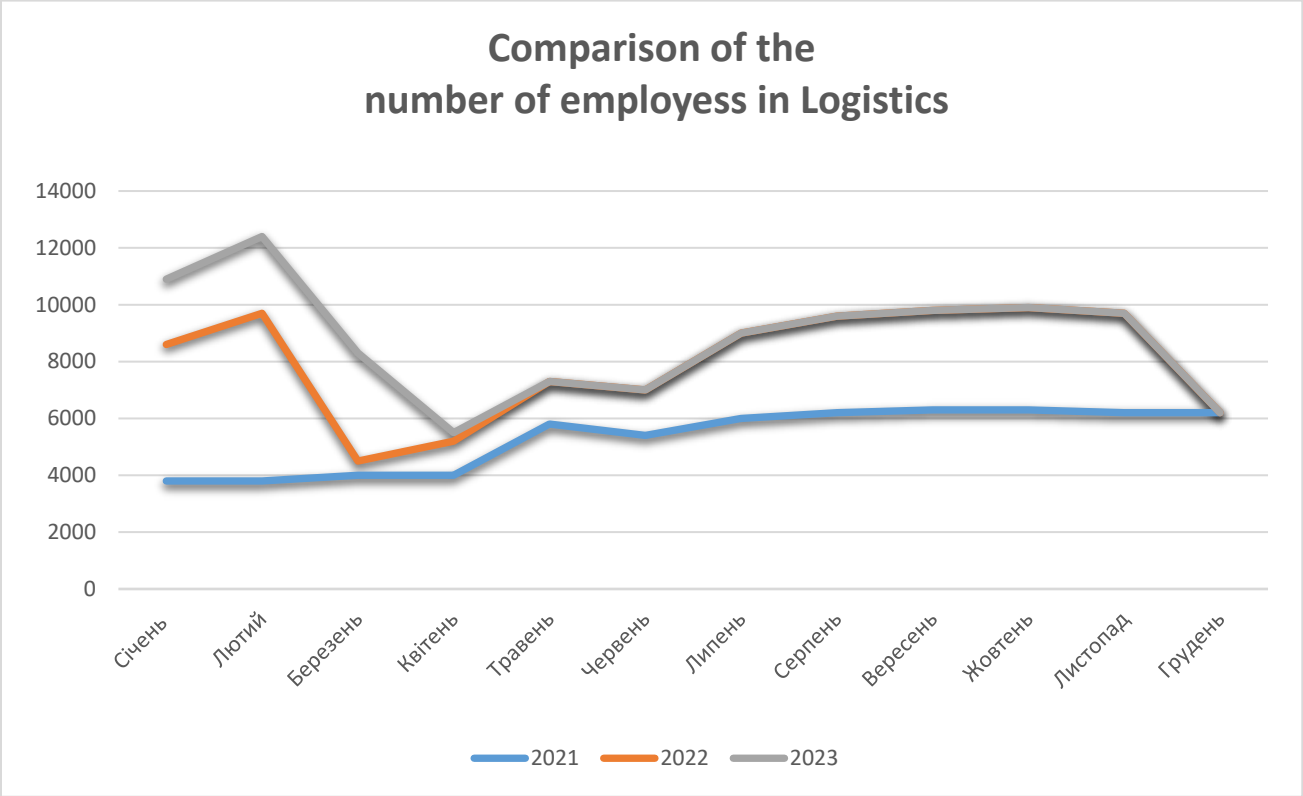

Figure 1 – Comparison of number of employees (2021,2022 and part of 2023)

It can be clearly seen from the Figure, that the employment in Logistics has the positive dynamics, in spite of war and other circumstances. There is the lack of professional logisticians, because the absence of experience.

Conclusions.

During the researches of the 3-PL companies-providers of Logistics services, such conclusions for sustainability of the Logistics enterprise revealed. There are several variants of ways for increasing the operational results of the Logistics company during the martial state.

1) Attract top managers with experience in different niches. (The more examples, the better the variability of results)

2) Ability to choose between main action, backup and emergency options. –

3) Re-establish and improve efficiency. (Outsource logistics processes and have a coordinated team already working on them.)

4) If the company is experienced, organize work and staff immediately and select employees for linear processes. - Track mile by mile. In case of air transportation freight-forwarding) If each flight has a dedicated manager, non-standard situations can be resolved very quickly. - Outsource registration. Take on cargo storage, processing and delivery, as well as customs clearance, broker registration and profit representation before licensing authorities.

5) - Find and organize a new storage warehouse with security and management systems.

Secure line workers in advance and 'reserve' additional sites for shipments. (it suits for all kinds because unloading and changes of documents are also applicable for truck transportation of transportation). Today, Ukraine controls the largest ports, which account for more than 85% of sea cargo handled: Mykolayiv, Orviy, Odesa, Black Sea and Southern ports. Three smaller ports at the mouth of the Danube are operating at full capacity and handling increasingly large volumes of cargo: Izmail, Leni and Ust-Dunaisk. In normal times, these ports accounted for less than 5% of exports. Considering the situation in other ports, the region has great potential. Before the

opening of the grain corridor, the country's export logistics depended on it. Ports in the Danube basin can no longer completely replace the volume of business that used to pass through seaports. While the seaports can handle 250 million tons per year, the Danube ports can physically handle only up to 10 million tons; Only small ships and barges can enter the Danube ports, which leads to a decrease in cargo volumes, physically limited cargo delivery areas and higher delivery costs; The low throughput of river ports physically limits cargo flow. However, Ukraine plans to increase the efficiency of the Danube ports by building additional warehouses, berths and transshipment capacities. Freight traffic by rail in 2022 will drop by 65.3 percent. Transportation on the international corridor between Asia and Europe is practically stopped. In addition, it is necessary to take into account the existing significant problems with the export of products caused by traffic jams and bottlenecks. The reasons for this are as follows Limited capacity of checkpoints. Limitation of control procedures by border guards, customs and phytosanitary inspectors of Ukraine and neighboring countries; technical restrictions on changing vehicle carts to a different size (from 1520 mm in Ukraine to 1435 mm in Europe); and Limiting the capacity of railway infrastructure of neighboring countries (shipbuilding factories, capacity of tracks and lines, number of rolling stock); Restrictions at intersections between different modes of transport: European ports cannot process large volumes of grain loaded into wagons; Constraints in storage infrastructure: for example, the physical absence of warehouses for processing/storage and storage of grain. In 2022, queues at border crossings may reach almost 40,000 wagons. As a result, about 20 percent of cargo waiting to cross the border is in the queue for more than 30 days. As a result, entrepreneurs often suffered losses, as customers refused to accept the cargo due to the risk of damage to the cargo in case of delays in delivery to the final consumer. In addition, cargo owners were charged a fee for each day the car was idle, and sometimes fines were imposed, depending on the terms of the contract. Due to the damage caused by the total war, the Ministry of Land Transport of Ukraine increased tariffs for freight transportation by rail and related services in Ukraine by 70%. Now this rate is reduced to 30%, but this option still remains unprofitable for agricultural entrepreneurs. Their profits will decrease, their working capital deficit will increase, and they will economize on cultivation, abandoning the use of fertilizers and other technologies to increase yields. As a result, until 2023, grain yields will most likely fall. rail traffic in 2022 will drop by 65.3 percent. Transportation on the international corridor between Asia and Europe is practically stopped. In addition, it is necessary to take into account the existing significant problems with the export of products caused by traffic jams and bottlenecks. The reasons for this are as follows Limited capacity of checkpoints. Limitation of control procedures by border guards, customs and phytosanitary inspectors of Ukraine and neighboring countries. All this factors influence on employment in Logistics..

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FEATURES OF MANAGEMENT OF ECONOMIC SECURITY OF ENTERPRISES

Viktoriia Baidala, Anna Yakymovska. "Features of management of economic security of enterprises". *The article is devoted to the study of topical issues of economic security management of enterprises. The author characterizes the principles on which the management of economic security of an enterprise should be based. The article provides a list of measures to manage the economic security of enterprise and their characteristics. With a view to forming a system for managing economic security of an enterprise, the article provides some features of organizational aspects which should be given special attention with a view to effective management of economic security. The issue under study is multifaceted and includes a study of certain functional components of economic security of an enterprise: financial, personnel, technological, legal, environmental, and information. It is determined that the purpose of managing the economic security of an enterprise is to minimize threats to business development and ensure the safety of the enterprise's property. The tasks that should be solved by the economic security management system in modern economic conditions are highlighted. It is emphasized that a systematic approach to economic security management can serve as a theoretical and methodological basis for analyzing economic security systems at different levels of management.*

Keywords*:* economic security, enterprises, management, risks, threats, management of economic security of enterprises.

Вікторія Байдала, Анна Якимовська. «Особливості управління економічною безпекою підприємств». *Стаття присвячена дослідженню актуальних питань з управління економічною безпекою підприємств. Наведена характеристика принципів, на яких має ґрунтуватися управління економічною безпекою підприємства. В роботі дається перелік заходів з управління економічною безпекою підприємства та їх характеристика. З метою формування системи управління економічною безпекою підприємства наведено деякі особливості організаційних аспектів, на які необхідно звернути особливу увагу з метою ефективного управління економічною безпекою.*

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Досліджуване питання є багатогранним і включає в себе дослідження певних функціональних складових економічної безпеки підприємства: фінансову, кадрову, технологічну, правову, екологічну, інформаційну. Визначено, що метою управління економічною безпекою підприємства є мінімізація загроз розвитку бізнесу та забезпечення збереження майна підприємства. Виокремлено завдання, що має вирішувати система управління економічною безпекою в сучасних умовах господарювання. Наголошено, що системний підхід до управління економічною безпекою може служити теоретико-методологічною основою аналізу систем забезпечення економічної безпеки на різних рівнях господарювання.

Ключові слова: економічна безпека, підприємства, управління, ризики, загрози, управління економічною безпекою підприємств

Introduction. Intensive changes in the market conditions cause threats to the stable economic activity of enterprises. This situation forces enterprises to quickly adapt to certain operating conditions, requires a quick search and implementation of ways to ensure their stable development based on the identification, neutralization and prevention of threats. However, the ways to counter threats and risks largely depend on the stage at which the enterprise is at a certain stage of development.

The management of economic security of an enterprise should provide protection against the negative impact of external and internal threats, destabilizing factors and promote the interests of owners, employees, partners of the enterprise and other stakeholders.

Analysis of recent research and publications. The modern scientists were engaged in the study of economic security management of enterprises, among them: Arefieva O. V., Danilova E. I., Zayachkivska O. V., Orlova K. E., Parkhomenko N. O., Prokhorova V. V., Mushnikova S. A., Sosnovska O.O., Fisunenko P.A. and others. However, many questions that are really important have not yet been sufficiently researched and are waiting for consideration and a new scientific perspective.

The formulation of the goals of the article is researching the main features and principles of managing the economic security of an enterprise in modern economic conditions.

Presentation of the main results. The majority of Ukrainian enterprises, especially in the current difficult economic conditions during the military aggression by Russia, face the problem of effective economic security management, which can reduce the level of threats to the activities of enterprises from the influence of internal and external factors [11].

The concept of "economic security management" is more specific, but the content remains the same, it is a set of measures and ways to support the enterprise in a state in which it is able to function steadily, developing on an expanded scale, to meet real economic needs at a level not lower than the critical level, to ensure economic independence, to withstand existing and suddenly arising dangers and threats. An important feature of economic security management measures and tools is that they should form a single, purposeful system.

A systematic approach to its formation involves taking into account all the real conditions in which the enterprise is located as an object of economic security [12]. In order to have the necessary focus, the economic security management system must have clearly defined elements, a mechanism for their operation and a scheme of interaction. When developing it, one should rely on the most important theoretical provisions of the general theory of systems. Any system, as delimited by a set of interconnected elements, has its own qualitative characteristics:

– multiplicity of elements;

– close dialectical connection of elements;

– compatibility of elements;

– the presence in the system of such elements that together allow to obtain a new system quality, or, as it is commonly called in the general theory of systems, emergent properties that are not inherent in its elements separately, but arise due to their combination;

– internal integrity of the system;

– the relative limitations of a set of elements from other systems [1].

A systematic approach to economic security management can serve as a theoretical and methodological basis for analyzing economic security systems at different levels of management [4].

The essence of economic security from the point of view of the systemic approach is that each of its elements does not exist and develop in isolation, but together with others, and therefore each element is significant in obtaining the final result. The system of economic security of an enterprise can be represented as a shield that protects a multi-level pyramid of economic security objects, the foundation of which is the material and technical base, personnel of the enterprise and its resource support.

The structural composition of the company's capital forms its financial condition, which is characterized by a certain level of liquidity and financial stability, which, in turn, is determined by the relationship "volume of production - costs - profit". Thus, the pyramid is a certain enterprise architecture within which material and financial resources flow, which, in turn, may cause certain internal threats and related risks of business activity [2].

In our opinion, the system of enterprise economic security management should provide protection against the negative impact of external and internal threats, destabilizing factors and promote the interests of owners, employees, partners of the enterprise and other stakeholders.

The purpose of managing the economic security of an enterprise is to minimize threats to business development and ensure the safety of the enterprise's property. Accordingly, in the current business environment, the economic security management system of an enterprise should solve the following tasks:

– forecasting and organizing activities to prevent possible threats to the economic security of the enterprise, including threats arising from the expansion of markets;

– identification, analysis and assessment of existing real threats to the economic security of the enterprise, as well as making management decisions to level them;

– ensuring financial stability, liquidity and solvency of the enterprise at any time;

– ensuring technological independence and achieving product competitiveness;

– selection of a sufficient level of personnel qualification and assessment of the efficiency of its functioning;

– protection of the information environment, trade secrets and achievement of a high level of information support for work;

– ensuring the security of personnel, capital, property and commercial interests;

– preventing penetration of economic intelligence structures of competitors, organized crime and individuals with illegal intentions into the company;

– development of the most optimal management decisions on the strategy and tactics of the company's economic activity;

– organization of a system of control over the efficiency of the security system, improvement of its elements [6].

Building an enterprise economic security management system in the context of European market integration should be based on the following principles [9]:

– legality (all activities of the enterprise must be carried out on legal grounds);

– individual rights and freedoms (the system should ensure economic and legal

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security of each employee and owner of the enterprise);

– systematic and comprehensive (each element of the system can be considered as a source and a threat to economic security);

– rationality and economic efficiency (the costs of organizing and operating the security system should not exceed business revenues);

– hierarchical subordination (the economic system should have a clear system of powers and responsibilities of each employee, a hierarchical system of subordination should be defined);

– immediacy and continuity (involves ensuring the constant efficiency of the system and a combination of preventive and repressive measures to ensure economic security) [3].

In the current economic environment, practical actions to manage the economic security of an enterprise should begin with diagnostics of the actual state of economic security of an enterprise [10].

Diagnostics is a set of studies aimed at identifying a weak link in the system of ensuring the economic security of an object, identifying problems and finding options for their solution.

The diagnostics should result in a list of proposed measures to improve the level of economic security in the face of constantly growing risks of the enterprise and an action plan for continuous monitoring of the facility. Next, it will be necessary to assess the effectiveness of the proposed measures and implement the most optimal solutions, taking into account their speed [7].

Diagnostics of the actual state of economic security of an enterprise is an important component of the enterprise management process and allows to assess its ability to meet economic challenges and threats. Table 1 shows the steps that can be taken to diagnose the actual state of economic security of an enterprise.

Table 1. Diagnostics of the state of economic security of the enterprise

Stages of diagnosis	Characteristics
Analysis of the financial sector	Conducting a comprehensive analysis of the company's financial statements, including the balance sheet, income statement, cash flow statement, etc. Assessment of liquidity, profitability, asset turnover, and capital adequacy.
Analysis of internal processes	Studying the effectiveness of internal operations and processes at the enterprise, such as inventory management, production management, human resources management, etc. Identification of possible problems and inefficiencies.
Competitiveness analysis	A study of the competitive environment and the company's position in the market. Assessment of the competitiveness of the company's products or services and comparison with competitors.
Risk analysis	Identification of potential risks to which the company is exposed, including financial risks, environmental risks, operational risks, etc.
Assessment of resources and personnel	An analysis of available resources, including financial, technical and human resources. Determination of needs for development and improvement of resources.
Strategy selection	Selection of strategic goals and objectives to strengthen the economic security of the enterprise.
Development of an action plan	Development of plan for the implementation of strategic measures and monitoring of their impact on the economic security of the enterprise.
Monitoring and adjustment	Constant monitoring of strategy implementation and adjustment of actions if necessary.

Source: developed by the author

The selected diagnostic stages will help the enterprise to assess its current situation and develop a strategy to strengthen economic security. Diagnostics of the actual state of economic security is important to ensure the stability and success of the enterprise in the conditions of a constantly changing business environment.

In connection with the fact that the economic security of the enterprise is affected by a huge number of both external and internal factors, the enterprise must have a mechanism for constant control and tracking of changes in these factors [8].

In order to effectively manage the economic security of the enterprise, in addition to many factors, it is necessary to take into account modern business conditions, in particular [5]:

a critical decrease in the profitability and income of enterprises, which slows down the reorientation and stabilization of production without the support of external investment sources;

the appearance of new competitors on the market, which is caused by the expansion of markets;

constant growth of production costs, which is caused, mainly, by monopoly pricing in the system of economic relations of enterprises, providing it with material, energy, communication and other resources.

Conclusions.

Thus, the process of managing the economic security of enterprises should involve both the owners (through the construction of an appropriate mechanism) and the state, since its role today is largely decisive for business. As a result of the study, we can conclude that the economic security management system, which provides timely signals of possible threats, should not be reactive, but preventive, which will prevent possible uncertainty and risks of activity as much as possible, and ensure strategic business development.

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CURRENT APPROACHES TO THE FORMATION OF THE ECONOMIC SECURITY MANAGEMENT MECHANISM OF THE ENTERPRISE

Olha Vytvytska, Oksana Slyvinska. «Current approaches to the formation of the economic security management mechanism of the enterprise». *The article is devoted to the study of the topical issue of the formation of the mechanism for managing the economic security of the enterprise in the conditions of globalization challenges. The fundamental influence of the tasks of economic security of the enterprise is characterized. The systematicity of the formation of the economic security management mechanism of the enterprise is substantiated and the main mistakes that are allowed when creating a plan and program for the implementation of specific measures of economic security management of enterprises are considered. Based on the experience of domestic and foreign scientists in the direction of managing the economic security of the enterprise, the principles on which the concept of economic security should be based are highlighted. The authors identified the elements of the enterprise security management system. In the concept of the mechanism for managing the economic security of the enterprise, the main requirement is an indicative analysis that allows detecting changes in indicators, their integration in the functioning of the subject of market relations. To increase the economic security of the enterprise, a step-by-step approach to monitoring the state and dynamics of the enterprise's development is proposed in order to identify threats and prevent them.Prospects for further research consist in substantiating the assessment of the scope and quality of the formation and implementation of the economic security management mechanism of enterprises in Ukraine, taking into account modern globalization challenges.*

Keywords*:* economic security, mechanism, management of economic security, dangers, threats.

Ольга Витвицька, Оксана Сливінська. «Сучасні підходи до формування механізму управління економічною безпекою підприємства». *Стаття присвячена вивченню актуального питання формування механізму управління економічною безпекою підприємства в умовах*

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глобалізаційних викликів. Охарактеризовано фундаментальний вплив завдань економічної безпеки підприємства. Обґрунтовано системність формування механізму управління економічною безпекою підприємства та розглянуто основні помилки, які допускаються при створенні плану та програми виконання конкретних заходів управління економічною безпекою підприємств. Виходячи з досвіду вітчизняних та зарубіжних вчених з напряму управління економічною безпекою підприємства виділено принципи, на яких повинна ґрунтуватися концепція економічної безпеки. Автори визначили елементи системи управління безпекою підприємств. У концепції механізму управління економічною безпекою підприємства головною вимогою визначено індикативний аналіз, який дозволяє виявити зміни показників, їх інтегрованість у функціонуванні суб'єкта ринкових відносин. Для підвищення економічної безпеки підприємства запропоновано поетапний підхід до моніторингу стану та динаміки розвитку підприємства для того, щоб виявити загрози та запобігти їм. Перспективи подальших досліджень полягають в обґрунтуванні оцінки масштабів та якості формування та реалізації механізму управління економічною безпекою підприємств в Україні з урахуванням сучасних глобалізаційних викликів.

Ключові слова: економічна безпека, механізм, управління економічною безпекою, небезпеки, загрози

Actuality of the problem. Acceleration of changes in scientific and technical, social and economic processes, active force majeure influence from external and internal factors on the business entity. For enterprises, this means an increase in barriers to conducting business, deterioration of financial stability, solvency, and leads to an increase in the level of risks and threats. Timely prevention of crisis situations and neutralization of negative factors affecting the activity of the enterprise are processes of ensuring the stability of the effective functioning of the enterprise. There is a need for further development of effective approaches to the development of conceptual foundations for building a mechanism for managing the economic security of the enterprise.

The mechanism for managing the economic security of the enterprise must meet the requirements of the time, contribute to ensuring the development, preservation and increase of the material values of the enterprise, which ensures the appropriate level of competitiveness of products; use of innovative technologies in production activities.

Analysis of recent research and publications. The issue of economic security of enterprises has been studied by many scientists. S. F. Pokropivnyi (2000) considered the state of corporate resources (capital resources, personnel, information and technology, equipment and rights) and entrepreneurial opportunities, which guarantees their most effective use for stable functioning and dynamic scientific, technical and social development, prevention of internal and external negative influences [4, p. 66]. Kozachenko H. V,. Ponomaryov V.P. S. M. Ilyashenko (2003) defined it as a measure of harmonization in time and space of the economic interests of the enterprise with the interests of environmental entities connected with it, which operate outside the enterprise [5, p. 87].

Y. M. Petrovych and A. F. Kit single out the largest number of components of economic security among those studied, namely: environmental, energy, intellectual, interface, information, personnel, political-legal, resource, market, force, social, technical-technological and financial [8]. Considering the approaches to the formation of the economic security management mechanism, M.D. Domashenko (2013) characterizes it as a system of enterprise management, which, based on the goal chosen by the management bodies to maintain or increase the level of economic security of the

economic zone by using the existing potential of the enterprise, ensures the realization of the set goal and leads to stable and efficient operation of the enterprise [7, p. 161.]. Maslak O.I., Grishko N.E. (2013) justify the mechanism of economic security management using a scheme, the main parameters of which describe the content of management actions, their leading functions and options for possible solutions when [6, p. 203]

The above characteristics are components of the economic security management mechanism and require the constant attention of researchers and practitioners in the complex conditions of martial law.

The purpose of the research. There is a study of topical issues of the formation of the economic security management mechanism in the complex conditions of globalization challenges and determination of directions for its effective implementation.

The main part of the research. The main goal of the enterprise's economic security is to ensure its long-term and maximally effective functioning today and high development potential in the future.

The following tasks of economic security of the enterprise follow from this goal:

– to ensure high financial efficiency, sustainability and independence of the enterprise;

– ensure technological independence and achieve a high level of competitiveness of the enterprise's technical potential;

– optimize the effectiveness of the organizational structure;

– ensure a high professional level of personnel training;

– minimize the destructive impact of the results of production activities on the state of the environment;

– ensure regulatory and legal protection of all aspects of the enterprise's activity;

– ensure information security of the company's activities, commercial secrecy;

– ensure the security of the enterprise's commercial interests, its capital and property [6].

The level of economic security of the enterprise depends on how effectively its management and specialists (managers) of the divisions are able to avoid possible dangers, threats and risks and eliminate the consequences of the negative impact of the internal environment.

The systematic formation of the economic security management mechanism of the enterprise is aimed at the need to take into account not only the real conditions of the enterprise's activity, but also the mechanism itself must have clearly defined elements, a scheme of actions and interactions.

The economic security management mechanism is primarily a managerial activity reflected in the development of strategic measures, which include the selection of a goal and strategy, programs and procedures for the implementation of specific measures, including innovative ones, for the qualified level of economic security management of the enterprise [2].

Let's consider the main mistakes that are made when creating this plan:

– the main mistake is considered to be the absence of an item reflecting goals and objectives from the concept of activity approved by the head of the enterprise;

– the absence of an item that actually contains the functional duties of the operational department of economic security ("optimize", "analyze", "improve", etc.);

– purposeless instructions and recommendations that deviate from the planned concept of activity;

– lack of separation of responsibilities of executive divisions;

– lack of instructions for solving time-consuming measures.

Such shortcomings of the plans allow avoiding the responsibility of specific persons responsible for the security of the enterprise.

First of all, it should be emphasized that the main weak point of the work of many

enterprises, the management system in which this document functions, is an insufficiently developed planning system, since success will be achieved only by those who can accurately formulate their goal and clearly move towards it. If it is absent, there cannot be a purposeful plan, and therefore, the success of the subject in the field of any activity. But even if it was possible to form a plan that meets all the requirements, it is still necessary to monitor its timely and high-quality implementation. Otherwise, everything will remain on paper [4].

Such an enterprise security system assumes the presence of the following elements:

– creation of the concept of object protection within the territory and in relation to its perimeter;

– development of internal documentation (instructions) regulating personnel activities in case of possible threats (terrorist attack, fire, natural disaster, breakdown of technological equipment, etc.);

– training from among the management staff of the so-called "crisis group", which is entrusted with the management of the facility in the event of an emergency;

– creation of special "response groups" to apprehend attackers and eliminate the consequences of possible threats;

– organization of communication and interaction with representatives of local authorities, law enforcement agencies, etc.;

– creation of a system for checking personnel (upon employment, transfer, expiration of certain terms, etc.).

Based on the experience of domestic and foreign scientists in the field of economic security management of enterprises, we can highlight the principles on which the concept of economic security should be based: scientificity, unity of leadership and collegiality, systematicity and complexity, optimal combination of centralization and decentralization, planning, analytical and informational equipment, combination of rights, duties and responsibilities [3].

The principle of analytical and informational equipment implies the development of modern tools and methods of enterprise activity, which are reflected in accounting, financial, management and tax accounting, internal control and audit in a single information system that ensures the adoption of correct management decisions, favorable to increasing the economic security of the enterprise.

The economic information system of the enterprise is a set of information measures formed during the operation of the enterprise, designed to perform the functions of effective management in order to increase the competitiveness of the enterprise (both on the foreign and domestic markets) and meet the standards of economic security [1].

Since information is the most important element of the management system, special attention is paid to this principle. Various counterparties participate in the flow of final information formation, the enterprise must ensure tactful interaction during its creation and provision to interested parties.

The most important element that reflects the formation of information and affects the process of interaction with counterparties is the accounting system [8].

Financial, managerial and tax accounting, as well as internal and external control, are the main elements of a complex accounting and information system aimed at the formation and maintenance of economic security and the legal provision of tax payments determined within the framework of accounting, financial and tax accounting.

In turn, in order to increase the economic security of the enterprise, the state and dynamics of the enterprise's development should be monitored in order to identify threats and prevent them. Monitoring is usually carried out in stages (tab. 1.)

Table 1. Stages of monitoring

Stages	*Brief description*
1 stage	Identification of the enterprise, including its definition organizational and legal form, dimensions and specifics of activity
2 stage	Formation of a system of technical and economic evaluation indicators
3 stage	Identification of factors characterizing promising directions of development enterprises
4th stage	Modeling and formation of enterprise development strategies
5th stage	Audit of the enterprise
6th stage	Diagnostics and analysis of the level of economic security of the enterprise
7th stage	Development of proposals for the prevention and neutralization of threats

Source: based on [5].

Monitoring allows you to assess the current state of the enterprise and the dynamics of its development, helps to determine the causes of threats and risks, predicting the results after certain actions are taken [5].

In the concept of the economic security management mechanism of the enterprise, the main requirement is indicative analysis, which allows to identify trends and changes in indicators, their integration in the stable functioning of the subject of market relations. Changes in security indicators relative to normative values identify a certain financial state of the enterprise and predict the level of probability of bankruptcy. The financial state of the enterprise is important, as it characterizes not only the assessment of the current state of the entity, but also indicates the decision of a certain range of management actions in organizational planning and motivation [7].

Conclusions.

Thus, in a broad sense, the formation of an economic security management mechanism will provide the possibility of prevention and, as a result, neutralization of various threats, which protects the economic interests of the enterprise and prevents losses in amounts higher than the critical limit. In a narrow, more specific sense, it is one of the most important characteristics of a business entity, which indicates the level of use of all the company's resources from the point of view of preventing, weakening or protecting it from existing dangers, threats or other unforeseen circumstances. An effective mechanism for managing economic security allows to show that the enterprise, being in a situation of uncertainty, unpredictability, changes in internal and external business conditions, is forced to make risky decisions.

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STRATEGIC MANAGEMENT OF THE ECONOMIC SECURITY OF CORPORATE ENTERPRISES UNDER THE INFLUENCE OF INTEGRATION PROCESSES AND DIGITALIZATION

Serhii Kolodynskyi, Oksana Storozhuk, Tetiana Lozova, Oleksandr Kalinin. «Strategic management of the economic security of corporate enterprises under the influence of integration processes and digitalization». *The article reveals the essence of the process of digitalization of the economy of Ukraine in the conditions of growing threats from the external environment, which is connected with the formation of an open economic system and deep transformational ties in global economic relations. Economic relations in the intellectual sphere, which are connected with the innovative activities of Ukrainian enterprises, are the object of attention of both international transatlantic companies and national structures, which are connected with the undermining of the competitiveness of the state and export-oriented enterprises, which*

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ultimately leads to the limitation autonomy and independence of the state. Under such conditions, the importance of economic security and the formation of significantly new systems for the protection of intellectual resources of Ukrainian enterprises and the limitation of the ability to influence the modern information, telecommunications and modern communication systems of the country's enterprises, which can become the object of information attacks on the production infrastructure and the creation of threats, are sharply increasing for its existence.

***Keywords**:* strategizing, corporate enterprises, economic security of enterprises, prediction and prevention of threats, corporate integration processes, digitalization.

Сергій Колодинський, Оксана Сторожук, Тетяна Лозова, Олександр Калінін. «Стратегічне управління економічною безпекою корпоративних підприємств під впливом інтеграційних процесів та цифровізації». *У статті розкривається сутність процесу цифровізації економіки України в умовах зростання загроз із зовнішнього середовища, що пов'язано з формуванням відкритої економічної системи та глибокими трансформаційними зв'язками у світових економічних відносинах. Економічні відносини в інтелектуальній сфері, які пов'язані з інноваційною діяльністю українських підприємств, є об'єктом уваги як міжнародних трансатлантичних компаній, так і національних структур, які пов'язані з підривом конкурентоспроможності держави та експортоорієнтованих підприємств, що в кінцевому підсумку призводить до обмеження самостійності і незалежності держави. За таких умов зростає важливість економічної безпеки та формування суттєво нових систем захисту інтелектуальних ресурсів українських підприємств та обмеження можливостей впливу на сучасні інформаційні, телекомунікаційні та сучасні комунікаційні системи підприємств країни, які можуть стати об'єктом інформаційних атак на виробничу інфраструктуру та створенням загроз, різко зростає для її існування.*

Ключові слова: стратегування, корпоративні підприємства, економічна безпека підприємств, прогнозування та попередження загроз, корпоративні інтеграційні процеси, цифровізація.

Introduction. At the current stage of the development of society, the processes of forming the digital economy have acquired special significance in the pace of economic development.

However, the problem of the impact of the digital economy on the economic and digital security of business entities at the enterprise level is insufficient. In this regard, the goal of the study is to identify the factors of digitalization of the economy into the constituent elements of the economic security of industrial socio-economic systems.

In modern conditions, the "digital economy" is becoming a driver of society's development, that is why it is so important to assess its impact on the economic security of the country, as well as its enterprises as a factor of competitiveness and sustainable socio-economic development. It should be noted that the initiated processes of digital transformation of modern economic systems in society allow to reduce the level of influence of external and internal threats on the activities of economic entities of enterprises, which makes them more stable and effective. In the process of active development of the digital economy, it is possible to replace traditional socio-cultural and economic values with instinctive ones, which determines the urgency of considering the impact of the digital economy on economic security at all levels of management.

Analysis of recent researches and publications. The processes of digitalization of the economy and the widespread use of modern Internet technologies have led to the formation of qualitatively new technology transfer systems and the separation of even

individual spheres of activity into a special system of scientific research. The result of such activity is the creation of the latest products of scientific and research activity – patents and know- how, which become the object of special attention from the side of modern companies that want to master the obtained research results and influence the course of their use in modern productions. The protection systems of many domestic companies cannot ensure their resistance to external influence and penetration into company management systems and databases of available information resources. A large number of scientific works are devoted to the issue of economic security, which is considered by different authors from different positions, such as Baigarin T., considers the impact of digital technologies on modern company management systems and the formation of the latest business models of modern entrepreneurship. Dernova I.A. touches on the impact on the economic development of the coronavirus pandemic and the transition to the widespread use of digital technologies in conditions of limited contacts of business entities and the strengthening of digitization trends in the fields of education, medicine, art and the creation of strong connections in the field of services at the level of enterprises and entire enterprises. The research of V. Haustov is interesting in determining the role of the digital economy at the state level and possible threats in today's sharp shifts in the structure of world markets. Other scientists, such as Burkinsky B.V., Hutsaliuk O.M., Marchenko O.A., Panteleeva N.M., Rebrik M.A., Shevchuk I. devoted their research to many separate issues of digitalization of the economy.

Highlighting unresolved parts of the general problem. The level of scientific developments devoted to the problem of digitization of the economy is quite meaningful, but the issues of economic security do not allow us to focus on production economic systems, which become independent in the conditions of administrative-territorial transformation and are unable to fully protect themselves from external influence. Determining the spheres of economic security of enterprises (ESB) requires the determination of the most important areas of protection and the provision of characteristics to the specified spheres. It is also important to find the ability of the economy of individual territories to economic growth and to ensure an acceptable standard of living for the population.

The aim of the article is to determine the essence of economic security of production economic systems in the conditions of digitization of the economy and search for ways to ensure the necessary level of economic security at the level of enterprises and to eliminate threats that have a critical level.

Presentation of the main research material. Understanding the essence of security consists in finding out the state of protection of an individual, community or state against internal and external threats, which is based on the detection, weakening or elimination of dangers and threats capable of causing damage, losses, losses and even destroying the object of protection.

Economic security is a narrower concept, as it is based on the ability of the economic system to resist threats, destruction, causing significant damage to the organizational structure of the economic entity, causing losses in achieving development goals and the prospects of preserving independence and independence in the rights of the owners and owners of the economic structure. The production socio- economic system of the enterprise (VSESP) is becoming the object of special attention thanks to the administrative and territorial reform, which is being carried out on the territory of Ukraine. Regions gain significant independence in the implementation of their economic activities, cross-border and cross- border activities with the possibility of entering world markets.

Such significant preferences granted by the state also require significant responsibility for the results of one's economic activity, which in recent times requires special attention due to intensifying economic competition and growing attention from the side of international companies to weak, little-experienced domestic production structures, which are Ukrainian enterprises.

Indicators of economic security of production enterprises are used to assess the state of economic security. The importance of such indicators is growing due to the strengthening of digitalization processes, which significantly increase the speed of economic reforms and provide an opportunity to adapt to the latest economic processes, which are moving from analog systems of interaction to information technologies (IT).

At the same time, digitalization processes make regional economic systems vulnerable, increase the risk of interference in the economic activities of competitors and causing large losses on their part.

Diagnostics of the level of economic security of enterprises (EBP) is based on a set of indicators. The degree of EBP threats is determined by comparing the current (actual) values of indicative indicators with their threshold (critical) values [1].

The formation of indicators of economic security of enterprises is carried out in various spheres of life. For manufacturing enterprises, 13 such spheres can be identified, which, in turn, are grouped into three large blocks (Table 1). The development of the digital economy is carried out through indicators:

– the readiness of the country and its enterprises for the informatization of society;

– readiness of economic entities of the region for electronic commerce;

– development of virtual service organizations.

There are also methodologies for the systemic development of the digital economy. Index of readiness for informatization of territories, index of readiness for electronic commerce; Internet connection; informational security; the quality of the education system; automation of government services; the presence of favorable conditions for the development of e-commerce based on digital marketing logistics. Based on the results of the analysis of methods for assessing the level of development of the digital economy, it can be concluded that in addition to technological aspects, other factors should also be taken into account, such as: the level and quality of education of the population of the country's territories; level of computer and digital literacy; increase of user systems in the section of enterprises of the country [2].

A number of theoretical and practical results were obtained based on the results of the conducted research on the assessment of the impact of the digital economy at the EDB level:

– first, the systematization of methods for assessing the level of development of the digital economy is proposed, the most reliable method for its application at the regional level is selected – the index of readiness for the information society, which is primarily manifested in the presence of modern computer support of the population of the region and access to the Internet;

– secondly, on the basis of correlation analysis, an assessment of the impact of the digital economy on regional economic development is given, especially in matters of the application of modern information systems, which are the basis of the formation and development of the so-called "knowledge economy". The latest economy is built on the wide spread of achievements of scientific and technological progress, and lagging behind such achievements will lead to the displacement of the domestic economy to the fringes of world progress and the preservation of old technological systems with a consistent loss of autonomy and independence of both the region and the state as a whole;

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– thirdly, there is an inverse stable relationship between the index of readiness for the information society and the level of economic security of the region (EBR), which indicates the positive impact of the factors of digitalization of the economy of enterprises on economic security [3].

A stable direct relationship between such factors of the development of the digital economy as "expenditure on information, computer equipment and digital technologies", "volume of investments in fixed capital aimed at the purchase of information, computer and telecommunication equipment", "amount of organizations using the Internet", "the number and level of virtual service organizations – VSO", "the share of the population that uses the Internet to order goods, works and services", "the level of digital literacy of the population of the region" [3, 4].

Table 1. Areas of economic security of enterprises (EBP)

The sphere of economic security of enterprises (EBP)	Characteristics of the sphere economic security of enterprises (EBP)
1. The capacity of the territory's economy for economic growth	
1.1. Investment security	The ability of the territory's economy to grow and expand
1.2. Production safety	Assessment of crisis phenomena in the field of production potential enterprises
1.3. Scientific and technical security	The state of the scientific and technical potential of the territories
1.4. Foreign economic security	Dependence of the economy of the territories on the import of important types of products and services
1.5. Financial security	Stability of the financial system of the territories
1.6. Energy security	Energy system ability to meet the needs of the economy in fuel and energy resources
1.7. Informational security	The ability of territories to resist information threats at the national and regional levels
2. Ensuring an acceptable standard of living of the territories	
2.1. Standard of living of the population	Availability of conditions for normal life activities of the population of the territories
2.2. Labor market	The ability of the territory's economy to provide a sufficient number of jobs
2.3. Demographic security	Resistance to the depopulation of the population of the territories
2.4. Law and order	The level of criminalization of society and spheres of economic and financial activity in the territory
2.5. Food safety	The degree of providing the population of the territories with food products of their own production in sufficient quantity
2.6. Infrastructure security	System maintenance balance
3. Ensuring environmental security of territories	
3.1. Ecological safety	The ability of territories to preserve the balance between man and nature

Source: authors' own development

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On the basis of the proposed indicators of economic security of production economic systems, a model of economic security of enterprises has been developed, which is presented in Figure 1. The complexity of such a model lies in the ability to detect, monitor and calculate possible threats and establish the degree of critical security for enterprises as separate types of threats and determine the complex effect of detected threats on the possibility of creating a crisis state and destroying the economic system of enterprises [4].

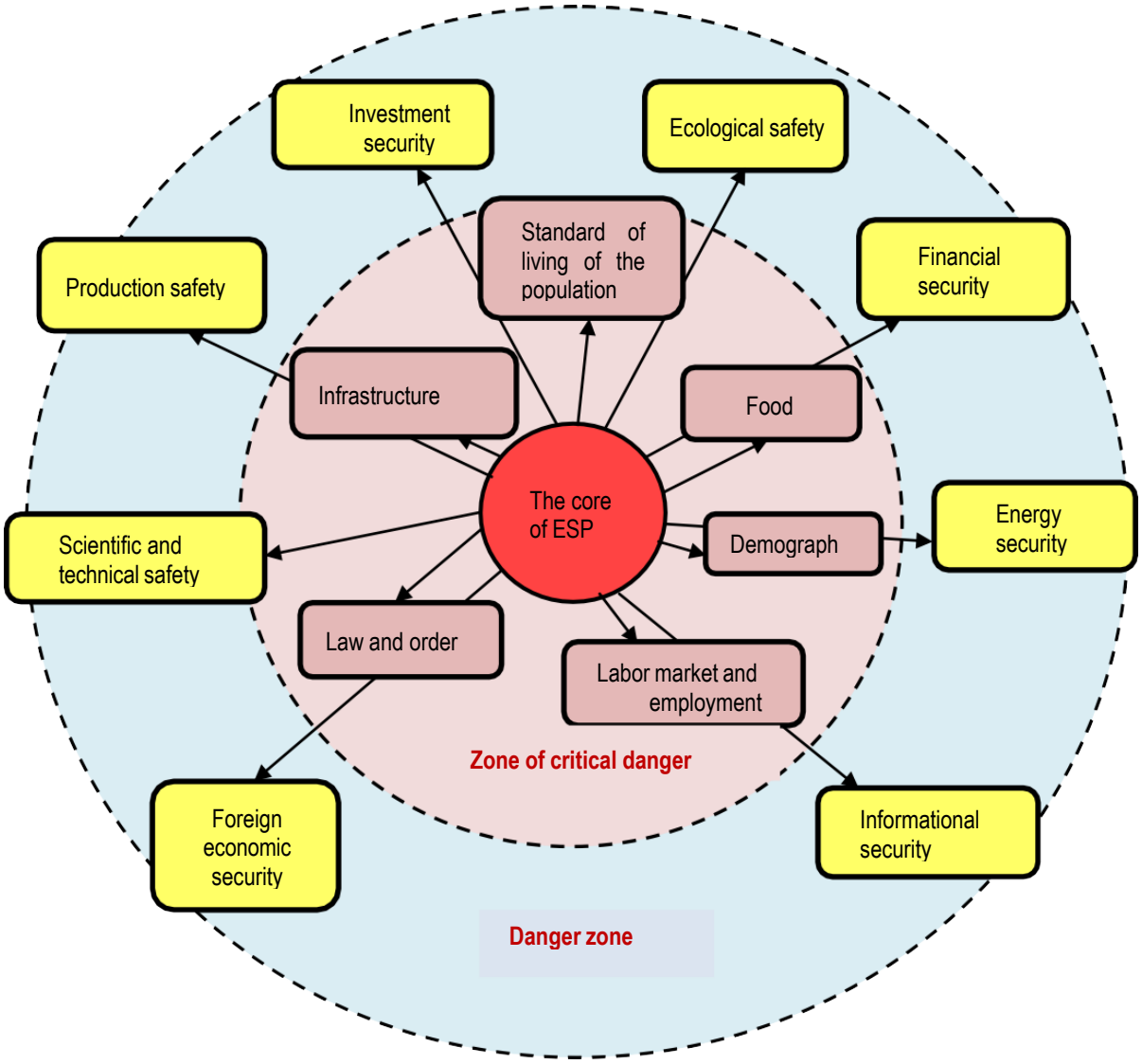

Figure 1 – Spatial model of economic security of enterprises
Source: authors' own development

Threats to economic security include a number of destabilizing factors associated with unfair competition and violation of norms, principles and laws that underlie the market economic system. All threats to economic security can be divided into a number of features:

– according to the place of occurrence of threats, they can be divided into internal and external threats, which requires dividing the significance of the threat into the production system of enterprises;

– political, competitive, social, legal, and other important reasons for threats can be cited as the causes of threats;

– according to the presence of threats, there may be existing, hidden and future or potentially possible threats;

– -according to the consequences of the action, threats can be divided into minor, significant, critical and catastrophic;

– according to the ability to prevent threats, they can be divided into force majeure threats and non- force majeure threats, which are probably the most complex among the identified threats.

The peculiarity of force majeure threats is the unpredictability of their occurrence, such as wars, disasters, earthquakes and other natural disasters that are difficult to predict and prevent. Imprudence and political short-sightedness can lead to catastrophic consequences for enterprises on the part of administrative authorities.

. The zone of threats presented in Figure 1 can gradually turn into a zone of critical danger, which affects vital areas of the population's life. These areas primarily include the standard of living of the population, the state of the infrastructure, especially transport connections and logistical relationships between production entities and state and foreign counterparties. It is also important to note the existence of law and order within the market economic system, which ensures the implementation of state legislative acts and legal mechanisms of production administrations and local self-government bodies. Ultimately, a stable legal basis of industrial relations will lead to the normalization of the demographic situation and the stabilization of labor relations in the labor market with maximum employment of the population and reduction of unemployment [1, 3].

In recent times, population migration in search of work has become a threat not only to the enterprises of our country, but also to the state as a whole. The number of young people who emigrate in search of work at a low birth rate significantly affects the labor market. The outflow of specialists with a high level of education and the loss of specialists in the information field, which are critical for the market economy, are especially critical. IT specialists are invited abroad by international companies, offering high wages, which encourages domestic specialists to leave our country [5, 6].

The food problem also becomes a cornerstone of the development of the domestic economic system. The market of agricultural products requires the saturation of the production markets with high-quality and cheap products, however, the constant increase in food prices leads to the loss of competitive positions of domestic producers and the entry of foreign competitors into the markets, who, pushing domestic producers, supply low-quality and expensive products of their own.

The indicated dangerously critical conditions for the existence of the domestic economic system may eventually lead to a crisis in the economy and, in the final case, lead to the disintegration of the country's integral economic systems into separate territorial entities with their subsequent impoverishment and descent into beggary of the population of individual territories.

The elimination of these threats involves the application of complex methods and means of safe use of information in production economic systems. The following measures are the most important:

1. Management of access to important information and resistance to possible methods of unauthorized access to information. Such measures provide for the identification of users and personnel of the management bodies of enterprises by attaching a personal identifier to each object.

2. Verification of authority and recognition of the authenticity of the identifier object by the presented code or cipher, which will allow them to access the relevant information.

3. Creation of conditions for access and work with information with establishment of work regulations and volumes of access to relevant information.

4. Mandatory registration of persons and structures and the time of their access to the relevant confidential information, establishing the volume of information received and processed by them with its further use in socio-economic and industrial-technological relations.

5. Recording attempts of unauthorized access and even attempts regarding unauthorized access to information with identification of persons or structures suspected of unauthorized access.

6. The development of special mechanisms for encrypting access to critical information, which are growing in connection with the development of telecommunications systems and the expansion of communication systems, especially the creation of an extensive Internet system with its unlimited access to various databases and Internet resources.

7. Countering the attacks of malicious programs that can harm the accumulated resources, make it possible to use them without the permission of the owners and carry out commercial activities with objects of information resources.

8. To counter the facts of viral infection of databases, sources of information in public access and localization and destruction of resources or its intentional damage and failure of computer systems and devices that are quite expensive and rare [7, 8].

According to the Law of Ukraine "On Basic National Security of Ukraine", the concept of "information security" is not widely disclosed, but only threats and directions of state policy in this area are listed. According to the Law of Ukraine "On the Concept of the National Informatization Program" dated February 4, 1998, information security is an integral part of political, economic, defense and other components of national security. The objects of information security are information resources, channels of information exchange and telecommunication systems and networks, and other elements of the country's information infrastructure [9].

One of the most dangerous threats to the security of the country and its enterprises in the information sphere is "computer crime", and with the aim of reducing it, the Interdepartmental Scientific Research Center for Combating Organized Crime was created, which definitely leads to an improvement in the situation with the protection of industrial economic systems. However, the problem of crime becomes particularly acute in connection with mass computerization, the unification and creation of computer networks and the use of the Internet system. A mechanism for investigating crimes in the field of computer information has been developed, which allows establishing the differences of a computer system or network according to established standards, checking the operation of computers with the help of special tests, identifying the authors of a software tool, assigning it to established permissions and volumes of use, estimating the value of the received information and its further use.

Conclusions.

Summing up, it should be noted that the theoretical significance of the research lies in the identification of factors of the digital economy, which affects the increase in the level of economic security of the region, which can serve as a basis for conducting further research on the impact of the processes of digital transformation of economic systems on economic security. The digitization process is rapidly developing and the renewal of production economic systems is impossible without the involvement of modern information protection mechanisms and overcoming attempts at its unauthorized use.

The practical significance of the conducted research is related to the possibility of using the results of creative searches when planning activities for the

implementation of digital technologies in production economic systems in order to increase the level of economic security of agents at all levels of management and close cooperation with advanced developers of information resource protection systems..

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