

Electronic scientific and practical journal
**INTELLECTUALIZATION OF LOGISTICS
AND SUPPLY CHAIN MANAGEMENT**

#20 (2023)
August '23



WWW.SMART-SCM.ORG

ISSN 2708-3195

DOI.ORG/10.46783/SMART-SCM/2023-20

ISSN 2708-3195



9 772708 319005

Electronic scientific and practical publication in economic sciences

Electronic scientifically and practical journal “Intellectualization of logistics and Supply Chain Management” included in the list of scientific publications of Ukraine in the field of economic sciences (category "B"): **Order of the Ministry of Education and Culture of Ukraine dated October 10, 2022 No. 894 (Appendix 2)**

Field of science: Economic.

Specialties: 051 – Economics; 073 – Management

ISSN 2708-3195

DOI: <https://doi.org/10.46783/smart-scm/2023-20>

The electronic magazine is included in the international scientometric databases:
Index Copernicus, Google Scholar

Released 6 times a year

№ 20 (2023)

August 2023

Founder: Viold Limited Liability Company

Editor in Chief: Hryhorak M. Yu. – Doctor of Economics, Ass. Professor.

Deputy editors-in-chief: Koulyk V. A. – PhD (Economics), Professor.
Marchuk V. Ye. – Doctor of Tech. Sci., Ass. Professor.

Technical editor: Harmash O. M. – PhD (Economics), Ass. Professor.

Executive Secretary: Davidenko V. V. – PhD (Economics), Ass. Professor.

Members of the Editorial Board:

SWIEKATOWSKI Ryszard – Doctor of Economics, Professor (Poland);

POSTAN M. Ya. – Doctor of Economics, Professor;

TRUSHKINA N. V. – PhD (Economics), Corresponding Member of the Academy;

KOLOSOK V. M. – Doctor of Economics, Professor;

ILCHENKO N. B. – Doctor of Economics, Ass. Professor;

SOLOMON D. I. – Doctor of Economics, Professor (Moldova);

ALKEMA V. H. – Doctor of Economics, Professor;

Henryk DŹWIGOŁ – PhD (Economics), Professor (Poland);

SUMETS O. M. – Doctor of Economics, Ass. Professor;

STRELCOVÁ Stanislava – PhD (Economics), Ass. Professor, (Slovakia);

RISTVEJ Jozef (Mr.) PhD (Economics), Professor, (Slovakia);

ZAMIAR Zenon – Doctor of Economics, Professor, (Poland);

SMERICHEVSKA S. V. – Doctor of Economics, Professor;

GRITSENKO S. I. – Doctor of Economics, Professor;

KARPENKO O. O. – Doctor of Economics, Professor;

PATKOVSKYI S. A. – Business practitioner.

The electronic scientific and practical journal is registered in international scientometric data bases, repositories and search engines. The main characteristic of the edition is the index of scientometric data bases, which reflects the importance and effectiveness of scientific publications using indicators such as quotation index, h-index and factor impact (the number of quotations within two years after publishing).

In 2020, the International Center for Periodicals (ISSN International Center, Paris) included the Electronic Scientific and Practical Edition "Intellectualization of logistics and Supply Chain Management" in the international register of periodicals and provided it with a numerical code of international identification: ISSN 2708-3195 (Online).

Recommended for dissemination on the Internet by the Academic Council of the Department of Logistics NAU (No. 7 of February 26, 2020). Released 6 times a year. Editions references are required. The view of the editorial board does not always coincide with that of the authors.

Electronic scientifically and practical journal "Intellectualization of logistics and Supply Chain Management" included in the list of scientific publications of Ukraine in the field of economic sciences (category "B"): **Order of the Ministry of Education and Culture of Ukraine dated October 10, 2022 No. 894 (Appendix 2)**

Field of science: Economic.

Specialties: 051 – Economics; 073 – Management

t.me/smart_scm
facebook.com/Smart.SCM.org
twitter.com/ScmSmart

DOI: <https://doi.org/10.46783/smart-scm/2023-20>
e-mail: support@smart-scm.org

тел.: (063) 593-30-41
<https://smart-scm.org>

Contents

INTRODUCTION	5
MARCHENKO V. S. Graduate of the National Aviation University (Ukraine), BUGAYKO D.O. Doctor of Science (Economics), Professor (Associate), Corresponding Member of the Academy of Economic Sciences of Ukraine, Vice - Director of ES International Cooperation and Education Institute, Instructor of ICAO Institute, Professor of the Logistics Department National Aviation University (Ukraine), BUGAYKO D.D. Student of the Logistics Department National Aviation University (Ukraine)	
SUSTAINABLE DEVELOPMENT OF A LOGISTICS COMPANY BASED ON THE IMPLEMENTATION OF A «GREEN» BUSINESS STRATEGY	6 – 18
REZNIK V.V. Postgraduate Student, National Aviation University (Ukraine), BUGAYKO D.O. Doctor of Science (Economics), Professor (Associate), Corresponding Member of the Academy of Economic Sciences of Ukraine, Vice - Director of ES International Cooperation and Education Institute, Instructor of ICAO Institute, Professor of the Logistics Department National Aviation University (Ukraine)	
<i>COMPARATIVE ANALYSIS OF THE LEGISLATION OF UKRAINE AND INTERNATIONAL NORMS THAT REGULATE THE IMPLEMENTATION AND FORMATION OF AVIATION LOGISTICS SYSTEM</i>	19 – 30
GURINA G.S. Doctor of Economics, Professor, Professor of department of management of foreign economic activity of enterprises of National Aviation University (Ukraine), PODRIEZA S.M. Doctor of Economics, Professor, Professor of department of management of foreign economic activity of enterprises of National Aviation University (Ukraine), BUT V.A. Candidate of Public Administration National Aviation University (Ukraine)	
<i>ENVIRONMENTAL TRENDS IN THE DEVELOPMENT OF AVIATION MANAGEMENT</i>	31 – 37
KYRYLENKO O.M. Doctor of Economics, Professor, Head of the Department of Foreign Economic Activity of Enterprises of National Aviation University (Ukraine), NOVAK V.O. PhD (Economics), Professor, Professor of the Department of Foreign Economic Activity Management of National Aviation University (Ukraine), PODRIEZA M.S. Graduate student of the Department of Management foreign economic activity of enterprises of National Aviation University (Ukraine)	
<i>KEY ASPECTS OF CORPORATE RESPONSIBILITY OF AVIATION ENTERPRISES</i>	38 – 45
GRYTSENKO S.I. Doctor of Economics, Professor, Professor of Logistics Department of National Aviation University), NINICH V.Z master student of Logistics Department of National Aviation University (Ukraine)	
<i>CLUSTERING OF LOGISTICS SUPPLY CHAINS IN THE PROCESS OF UKRAINE'S EUROINTEGRATION</i>	46 – 57
ZAHORODNIA A.S. Postgraduate of Department of Management named after Professor Yosyp S. Zavadsky, National university of life and environmental science of Ukraine (Ukraine)	
<i>FORMATION OF THE ECONOMIC SECURITY MANAGEMENT STRATEGY OF THE ENTERPRISE</i>	58 – 64



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 discuss 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.

HRYPHORAK Mariia
Chief Editor



UDC 656.583

DOI: <https://doi.org/10.46783/smart-scm/2023-20-1>

JEL Classification: M14, O11, Q10.

Received: 03 August 2023

Marchenko V. S. Graduate of the National Aviation University (Ukraine)

ORCID –

Researcher ID –

Scopus author id: –

Bugayko D.O. Doctor of Science (Economics), Professor, Corresponding Member of the Academy of Economic Sciences of Ukraine, Vice - Director of ES International Cooperation and Education Institute, Instructor of ICAO Institute, Professor of the Logistics Department, National Aviation University (Ukraine)

ORCID – 0000-0002-3240-2501

Researcher ID – ABF-5564-2021

Scopus author id: – 57216582348

Bugayko D.D. Student of the Logistics Department National Aviation University (Ukraine)

ORCID –

Researcher ID –

Scopus author id: –

SUSTAINABLE DEVELOPMENT OF A LOGISTICS COMPANY BASED ON THE IMPLEMENTATION OF A «GREEN» BUSINESS STRATEGY

Vladyslav Marchenko, Dmytro Bugayko, Danylo Bugayko. *«Sustainable development of a logistics company based on the implementation of a «green» business strategy». The modern world is changing incredibly fast. Scientific and technological progress is constantly opening new horizons for development, demonstrating an incredible number of new ways for improvement. Today, success is achieved by those who are able to be not only as flexible and efficient as possible, but also attentive to all aspects of potential development. It is important for a modern company to qualitatively form a list of personal priority areas for improvement, based on its own strengths, financial capabilities and available resources. It is obvious that today logistics plays a huge role in our lives and the environmental impact of its activities is very serious as it involves a huge number of enterprises, different companies, vehicles and customers. For a long time, people simply did not pay enough attention to the gradual process of environmental pollution and climate change. It is not surprising at all that today the effective concept of sustainable development has gained special popularity, as it wishes that both present and future generations can not only live in a healthy environment with an adequate standard of living, but also be able to satisfy all their possible needs and ambitions, using the available resources of the Earth with maximum rationality, respect and efficiency. The most effective way to follow this concept is the creation and gradual implementation of «green» business strategies. The development of a company in this direction can bring important benefits to it, and this can be best demonstrated on the example of the «Nova Poshta» company.*

Keywords: ecology, optimization, transport, efficiency, decarbonization, technologies, development, green logistics, prospects.

Владислав Марченко, Дмитро Бугайко, Данило Бугайко. «Сталий розвиток логістичної компанії на основі реалізації «зеленої» бізнес стратегії». Сучасний світ змінюється неймовірно швидко. Науково-технічний прогрес постійно відкриває нові горизонти розвитку, демонструє неймовірну кількість нових шляхів для вдосконалення. Сьогодні успіху досягають ті, хто здатен бути не лише максимально гнучким та ефективним, а й уважним до всіх аспектів потенційного розвитку. Для сучасної компанії важливо якісно сформулювати список особистих пріоритетних напрямків вдосконалення, виходячи з власних сил, фінансових можливостей і доступних ресурсів. Очевидно, що сьогодні логістика відіграє величезну роль у нашому житті, і вплив її діяльності на навколишнє середовище є дуже серйозним, адже вона задіює величезну кількість підприємств, різних компаній, транспортних засобів і клієнтів. Тривалий час люди просто не звертали належної уваги на поступовий процес забруднення навколишнього середовища та зміни клімату. Зовсім не дивно, що сьогодні особливої популярності набула ефективна концепція сталого розвитку, яка прагне, щоб і теперішнє, і майбутні покоління могли не лише жити в здоровому середовищі з достойним рівнем життя, але й були спроможними задовольнити всі свої можливі потреби та амбіції, використовуючи наявні ресурси Землі з максимальною раціональністю, повагою та ефективністю. Найбільш ефективним способом слідування цій концепції є створення і поступова реалізація «зелених» бізнес стратегій. Розвиток компанії в цьому напрямі може принести їй важливі вигоди, і найкраще це можна продемонструвати на прикладі компанії «Нова Пошта».

Ключові слова: екологія, оптимізація, транспорт, ефективність, декарбонізація, технології, розвиток, зелена логістика, перспективи

Introduction. The modern world is a truly complex system that combines an infinite number of elements, operating actors, ideas and decisions. And that is why it is obvious that efficient logistics plays a significant role in it.

The high level of competition forces market leaders to fight for every customer and quickly implement all possible modern innovative programmes. Technological breakthroughs of recent decades have provided humanity with a wide range of different directions for the development of the transport industry.

The concept of sustainable development has gained special popularity today. For a very long time, people simply did not pay enough attention to environmental pollution and the process of climate change, while today companies and enterprises all over the world are very seriously concerned about these issues, as the situation is becoming more and more serious at a rapid pace.

Currently, one of the most effective ways to succeed in this is to apply the green logistics principles. Implementation of such decisions can provide modern companies with a number of advantages, such as environmental protection, cost minimisation, transition to renewable energy sources, resource savings, development of an effective marketing strategy, decarbonisation and increased financial profit. Today, logistics is located at the centre of all processes, and that is why the introduction of key green technologies in this area can slow down the rate of environmental pollution and climate change.

The world is striving to improve, to constantly change, to be renewed and to move forward rapidly. The number of different perspectives on the use of green technologies in logistics is growing every day, and that is why it is so important to work on unleashing their full potential. Today, every logistics company wants to be not just

efficient, but modern, able to keep up with the times, ready for all possible challenges and problems that may arise.

The task of forming a highly effective «green» business strategy of a logistics company is very important and valuable, as it directly affects the final competitiveness of the company in the service market, the global level of optimisation of all its logistics processes, the quality and direction of marketing, the vector of the policy of implementation of modern green technologies, economic performance and prospects for the future.

The purpose of the article is to study the theoretical foundations for achieving sustainable development in logistics activities, as well as to demonstrate project recommendations for improving the «Nova Poshta» company through the implementation of a reliable «green» business strategy.

Presentation of the main results. An important step in the history of logistics was the emergence of a new direction of its comprehensive development in the form of green logistics. Green logistics represents the integration of various environmental considerations into the logistics process. It seeks to minimise the environmental impact of logistics activities.

A major argument is that the idea of green logistics has aspects of using advanced technologies and equipment to operate in a sustainable compromise that balances environmental and economic efficiency. The concept of green logistics is new for our country and is of great importance.

Today we have many promising solutions related to green logistics that have found their place in Ukraine and are being gradually implemented, as shown in Table 1.

Table 1. Popular green logistics decisions implemented in Ukraine.

No	Examples of popular decisions
1	Comprehensive improvement of transport networks aimed at highly efficient construction of routes, decarbonization of operational processes, minimization of delivery time, saving of natural resources and use of optimal modes of transport.
2	The development of digitization and cloud technologies to simplify communications, business processes and the introduction of an electronic document management system.
3	Re-processing or safe disposal of transport packaging and containers, both for the purpose of preserving the environment and qualitatively saving natural or financial resources.
4	Development of the principles of reverse logistics in enterprises and companies.
5	Application of modern technical and technological solutions for warehouses aimed at increasing their global performance indicators.

Source: Developed by Vladyslav Marchenko

Modern practice clearly shows that one of the most promising and effective options for business to minimise the negative impact on the environment and climate change is to implement a new, modern policy of «green» development.

Today, the key logistics representatives in Ukraine that have great prospects in this are «Ukrposhta», «Meest Express» and «Nova Posta». These are real leaders that adapt very quickly and efficiently to modern social needs and trends. In this work, it was decided to

analyze and study the company «Nova Poshta». Nova Poshta is the largest private operator of postal services in Ukraine and one of the most dynamic and fast-growing companies in the country in general [1].

It provides high-quality logistics and related services for businesses and individuals, both in Ukraine and abroad. Today, «Nova Posta» is an excellent example of a modern company that strives for continuous self-improvement in all possible aspects. The company has a leading position

in express delivery in Ukraine. In 2021, Nova Poshta delivered 372 million parcels and cargo [2].

Today, «Nova Posta» is a huge logistics network that covers not only big cities, but even small villages. The company's network has about 10,000 branches throughout

Ukraine, and the number of shipments in 2021 alone exceeded 430 million [3].

Thanks to a detailed analysis of «Nova Posta» indicators for the last years (using the company's financial report) - the percentage deviation between 2021 and 2020, as well as 2020 and 2019 was found and represented in Table 2.

Table 2. Key indicators of «Nova Poshta» income in the period 2019-2021

Indicator	Years			Deviation	
	2021	2020	2019	2021/2020	2020/2019
Revenue	20843502	16902857	13453318	23,31%	25,64%
Gross profit	4402498	4025771	2948976	9,36%	36,51%
Other operating income	202834	166643	145518	21,72%	14,52%
Financial result from operational activity: operating profit	1611195	1538307	1024144	4,74%	50,20%
Other financial income	1814806	687882	493080	163,83%	39,51%
Financial result before tax: profit	2794933	1090142	868357	156,38%	25,54%
Net profit	2600320	991292	782954	162,32%	26,61%

Source: Developed by Vladyslav Marchenko&Danylo Bugayko

Also, not less interesting situation occurred with significant changes in the costs of «Nova Posta» company in recent years. The

conducted vertical and horizontal analysis of data for 2019-2021 is shown in Table 3.

Table 3. Key cost indicators of «Nova Poshta» in the period 2019-2021

Indicator	Year 2021	%	Year 2020	%	Year 2019	%	Deviation 2021/2020	Deviation 2020/2019
Material costs	2133966	10,98	1439947	9,27	1328450	10,56	48,20%	8,39%
Staff costs	5742731	29,55	4529467	29,16	4202519	33,42	26,79%	7,78%
Contributions to social activities	1213180	6,24	951549	6,13	824113	6,55	27,50%	15,46%
Amortization	1406127	7,23	930615	5,99	675301	5,37	51,10%	37,81%
Other operating expenses	8939137	45,99	7679615	49,45	5544309	44,09	16,40%	38,51%
Total	1943514 1	100	1553119 3	100	12574692	100	25,14%	23,51%

Source: Developed by Vladyslav Marchenko

«Nova Poshta» strives to integrate all aspects of the sustainable development concept in the best possible way. Many of the company's projects often focus on several

sustainable development goals at the same time and successfully implement them, as can be seen in Fig. 1.

Company projects	Implemented sustainable development goals																
	No1	No2	No3	No4	No5	No6	No7	No8	No9	No10	No11	No12	No13	No14	No15	No16	No17
Humanitarian Post of Ukraine			●								●						●
Sport activities			●								●						●
Nova Poshta Business School				●				●	●								
KRUTO Nova Poshta				●													
Ecological responsibility												●	●				
Social activities and programmes			●	●						●	●						
Bicycle parking			●								●						
Book reading				●							●						
Colored parcels										●							
Rehabilitation of ATO participants			●														

Figure 1 – Achieved sustainable development goals in company projects

Source: Developed by Vladyslav Marchenko&Dmytro Bugayko

A detailed analysis of the company allowed us to develop its roadmap, depicting in a convenient graphical form the projects that have already been implemented, are being implemented or are planned. Having studied the company, we have chosen, it is

possible to see promising opportunities for its improvement in the chosen direction and represent it in the form of roadmap in Fig. 2.

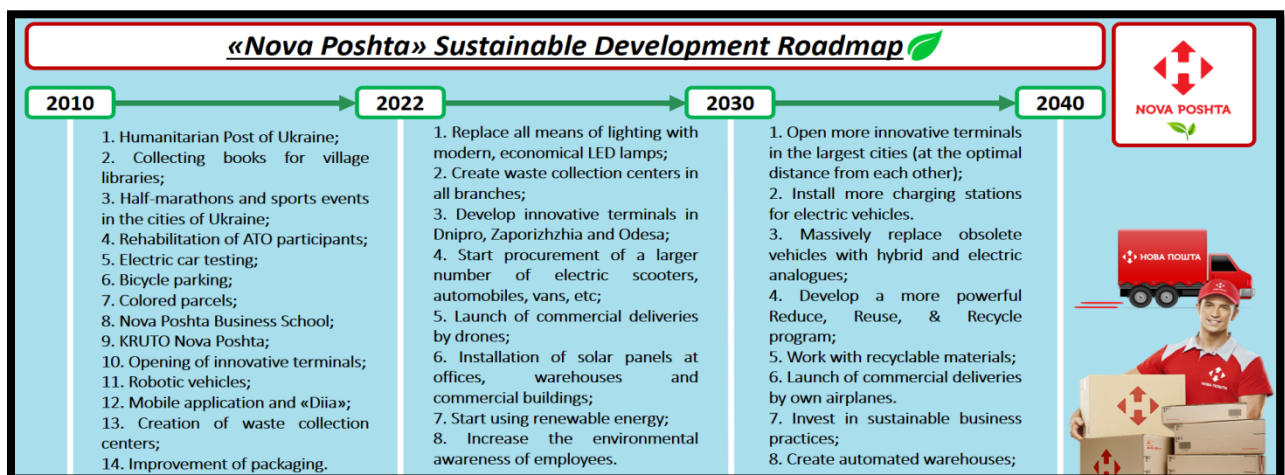


Figure 2 – «Nova Poshta» sustainable development roadmap.

Source: Developed by Vladyslav Marchenko.

It is obvious that some of them already have first attempts of implementation, but their full realisation and development will take many years. All the initiatives in this roadmap can be divided by key goals: the most efficient and rational use of resources; use of renewable energy sources; waste management; raising environmental awareness; process automation; improvement of the social situation; decarbonisation of the company's activities.

In our time, «green» business strategy represents a set of initiatives, projects or ideas that a company plans to gradually implement in its operations in order to improve its impact on the environment, economy and society as

a whole. Today, a «green» business strategy is one of the most practical tools aimed at supporting the idea of achieving sustainable development. The easiest way to explain its importance is to use the example of the previously chosen company. Therefore, it is important to understand the company's progress in this area.

By reviewing the company's activities and its sustainability reports, several key areas of the company's green activity can be found. In recent years, the company has started to use modern electricity accounting systems and has also formed a set of energy consumption standards. At the same time, the installation of new LED lamps and replacement of

outdated lighting sources with modern analogues allows the company to significantly save resources. The parallel process of using high-quality energy-efficient heaters allows the company to significantly reduce costs during the heating period. Moreover, an incredibly important step was the use of the «3R» principle based on the norm: 1. Reduce; 2. Reuse; 3. Recycle. And the last, at the moment, important issue in the field of the ecology that this company is really concerned about is the emission of carbon dioxide into the earth's atmosphere.

For logistics companies, the process of using renewable energy sources, and especially the implementation of strategic plans for the electrification of vehicles, is indeed very important. Therefore, the company's business strategy should be supplemented by the inclusion of a plan to more intensively replace obsolete vehicles with more modern and efficient electric models.

If we pay attention to the implementation of the steps of the green course in the logistics activities of Ukrainian companies, we can see that «Nova Poshta» became one of the first representatives of our market interested in the possibilities of switching to electric vehicles in order to minimise the negative impact on the environment from the transportation of various goods and products. The company has long ago started to study international experience in this area, analysing various transition options, innovations, technological advances, environmental, economic and social aspects of this issue, in search of the best solutions. Today, «Nova Poshta» already has a practice of testing electric vehicles. A good example is the «Citroen Berlingo Electric», which was tested by this company to deliver customer orders in Kyiv. After detailed testing, «Nova Poshta» noted that the experience gained through their use in logistics operations was successful.

The list of advantages of electric vehicles is really wide: price, reduced financial costs for fuel, easy maintenance, low noise, novelty,

safety, popularity, environmental friendliness, etc.

If we talk about the disadvantages of electric vehicles, then today there is also a certain list of obvious disadvantages: the battery, slow charging of the electric car, not cheap batteries, a small number of charging stations, limited speed, limited range, etc.

Thus, having analysed the advantages and disadvantages of electric cars, it can be stated that this transport is already really capable of bringing its owner great benefits. However, we should not forget about the mentioned limitations, despite the fact that most of the key problems of these vehicles are directly related to the transitional technological and service period. All of them, of course, will be gradually solved, in parallel with the development and global popularisation of the green course in the world, both among ordinary citizens and businesses.

The policy of gradual replacement of outdated vehicles with modern, environmentally friendly models is one of the most practical and effective ways of green development for logistics companies today. Despite its complexity, a huge number of companies around the world have already begun to implement it, as they see the green course as a new future for logistics.

When implementing the idea of replacing the company's outdated fleet with new electric analogues, the main examples of benefits for «Nova Poshta» are: significant reduction in fuel costs; maximisation of reliability, quality and safety; the possibility of creating new services and offers; minimisation of potential operating costs; increased labour productivity; reduction of vehicle maintenance costs; minimisation of downtime costs; improvement of the company's image both in the Ukrainian market and in the international arena; formation of a powerful marketing strategy; increasing the level of environmental friendliness of its vehicles, which will be achieved by reducing harmful emissions, especially carbon dioxide.

Despite the fact that today «Nova Poshta» is one of the best representatives of the Ukrainian market, it, like all other companies, undoubtedly has absolutely limited resources, capacities, strengths and opportunities. In recent years, the company has been closely monitoring the development of the electric vehicle market and studying it in detail, as it is seeking to upgrade its fleet to efficient models of this type in the future.

That is why it was decided to form a «green» business strategy for «Nova Poshta» based on the first optimal purchase of electric vehicles for transportations. Today, the number of electric vehicles in the company's fleet is currently quite low, and these are not high-performance minibuses that can carry a sufficient number of parcels, but mostly ordinary electric scooters. «Nova Poshta» is constantly working and developing to achieve leadership in all possible aspects, and at the same time forming ambitious plans for its future, both in the domestic and international markets.

Everyone needs to understand that since «Nova Poshta» currently uses several thousand vehicles in its operations, the task of immediate transition to electric versions is simply impossible for it, as this process

requires an incredible amount of resources and capabilities. That is why we decided to develop a «green» business strategy for the purchase of the optimal number of electric vehicles, which will act as the first, full-fledged practical step towards the future decarbonisation of the company's activities.

Taking into account the current, very difficult situation in the country, this «green» business strategy is obviously not aimed at a global scale, but rather serves as a convenient transition to the company's future more intensive actions. It is as stable as possible and is focused on a period of eight years, from the beginning of 2023 to the end of 2030.

Based on all the analysed data, the company's experience in this area, the availability of appropriate infrastructure and readiness for such changes, we decided to purchase the optimal number of electric vehicles annually, in the amount of 35 units.

Having analysed the market in detail, we can note that it would be reasonable to consider an electric vehicle from the «Peugeot» company in this «green» business strategy. «Nova Poshta» already has positive experience of using various vehicles from this company and is fully satisfied with them. The chosen «Peugeot e-Partner» is a fully electric commercial vehicle with zero emissions.

Table 4. Main data about the selected «Peugeot e-Partner»

No	DATA	VALUE & INFORMATION
1	Gross Vehicle Weight (kg)	2390
2	Maximum Indicative Payload(kg)	800
3	Load space (m3)	3,3
4	Length	Standard
5	Body Style & Trim Level	Panel Van Professional Premium +
6	Version	e-Partner 50kWh Auto 800 Professional Premium +
7	WLTP CO2 g/km	0
8	Price	£28585 at rate 45 (1286325€)
9	Battery	Lithium-ion 50kWh
10	Range (WLTP)	Up to 170 Miles (275 km)
11	Max torque CEE (Nm /rpm)	260 / 3674
12	Max power CEE (kw (hp)/rpm)	100 (136) / 5500
13	Maximum speed (mph / kmh)	84mph
14	0-60mph (secs)	11,2
15	Charging time / Quick Charge - DC Current (100kW)	0-80% - 30mins

Source: Developed by Vladyslav Marchenko

It has gained success in the market and has become very popular among people because it meets high standards and has decent specifications. This is exactly the case when the vehicle meets the important principle of «price-quality».

This transport vehicle is a great option for business because it has: good load capacity; optimal cargo compartment volume; high mobility; quiet engine; ease of maintenance; high efficiency; smooth movement without jerks; intense acceleration; minimal vibrations during operation. It is very reliable and equipped with a modern control system that provides the most convenient driving experience for the employee. The main data about the selected transport vehicle is given in Table 4.

«Peugeot e-Partner» is equipped with a modern high-voltage battery. Especially pleased with the distance that it is able to

drive (from 190 km to 275 km on a single charge) which is undoubtedly good for such an electric model. In our «green» business strategy, these electric vehicles are primarily recommended to be used for transportation in large cities with a great number of citizens, such as: Kyiv, Kharkiv, Lviv, Dnipro, Odesa, etc. In addition, they can be safely used in their «satellite cities», which are at an optimal distance. «Peugeot e-Partner» has decent characteristics that directly correlate with many other cars used by the company. For an interesting comparison, we can take as an example, not the outdated transport of the company, but the modern, basic version – «Peugeot Partner», which runs on ordinary fuel (and long ago, after the company's testing, was indicated as reliable model). Main data about the «Peugeot Partner» is mentioned in Table 5.

Table 5. Main data about the selected «Peugeot Partner»

No	DATA	VALUE & INFORMATION
1	Gross Vehicle Weight (kg)	2385
2	Maximum Indicative Payload(kg)	984
3	Load space (m3)	3,3
4	Length	Standard
5	Body Style & Trim Level	Panel Van Professional Premium +
6	Version	Partner BlueHDi 130 S&S EAT8 Auto 1000 Professional Premium +
7	WLTP CO2 g/km	156
8	Price	£22080 at rate 45 (993600€)
9	Max torque CEE (Nm /rpm)	300 (221) / 1750
10	Max power CEE (kw (hp)/rpm)	96 (131) / 3750
11	Maximum speed (mph)	114
12	Fuel consumption (l/100 km)	5
13	Euro status	Euro 6.4
14	Fuel system	Diesel High pressure turbo-charged direct injection
15	FUEL TANK CAPACITY Litres (gallons)	50 (11)

Source: Developed by Vladyslav Marchenko

The company has absolutely successfully created an electric model, carefully saving the main characteristics of the basic transport in a

new, modern body, which can be clearly seen in Fig. 3.



Figure 3. «Peugeot Partner» and «Peugeot e-Partner»

Source: Developed by Vladyslav Marchenko

Directly comparing their characteristics, we can clearly see that Peugeot Partner: «Gross Vehicle Weight» is a little lower; «Maximum Indicative Payload» is better; «Load space» is similar; «WLTP CO₂» in comparison with electric is optimal; «Price» is lower; «Max torque CEE» is higher; «Max power CEE» is slightly lower; «Maximum speed» is higher.

These vehicles can also be compared by the cost per kilometre. The official report states that «Peugeot Partner» consumes 5 litres of the fuel per 100 kilometres. Knowing that in Ukraine the price for it is 52 hryvnias (as of November 2022), let's calculate the cost per 1 kilometre:

$$5 * 52 / 100 = 2,6 (\text{€}).$$

The data on how many kWh the «Peugeot e-Partner» consumes per 1 kilometre varies from various factors, conditions and driving, so we will find it directly using the ratio from the official data (where 275 kilometres corresponds to 50 kWh):

$$50 / 275 = 0,18 (\text{kWh}).$$

Now we can see that this transport vehicle needs 0,18 kWh to drive 1 km. Knowing that in our country, the price of electricity for this type of business corresponds to 5,75 hryvnias per kWh, let's calculate using the ratio how much money the company spends per 1 kilometre driven by it:

$$0,18 * 5,75 = 1,03 (\text{€}).$$

Now, we can find out how much more expensive the delivery version of the «Peugeot Partner» is compared to the electric

«Peugeot e-Partner» by finding the difference between the results of formula 3.1 and 3.3:

$$2,6 - 1,03 = 1,57 (\text{€}).$$

As we can see, the difference is quite noticeable, which is undoubtedly a plus of electric model, paying for which a little bit more at the beginning, you can save in the process. Of course, ordinary users (for whom the price of electricity is even lower) can fully experience it. Based on the obtained result, we can calculate for what mileage the initial overpayment for the electric «Peugeot e-Partner» will be achieved. The first step on this path will be the calculation of the difference in price between the two transport vehicles:

$$1286325 - 993600 = 292725 (\text{€}).$$

Initially, such finances may seem noticeable, but if we will look at all the opportunities that are opening up for the company in case of buying exactly this vehicle, then they are absolutely reasonable. Knowing that on one kilometre of driving, the electric model chosen in the «green» business strategy saves significantly, we can check how many kilometres these vehicles need to drive to achieve the difference in their price. Let's calculate this indicator for «Peugeot e-Partner»:

$$292725 / 1,03 = 284199,02 (\text{km}).$$

Keeping in mind its characteristics, we can mention that this result is a good medium-term indicator. Considering only the price of energy, the overpayment for an electric model will be paid off in a few years. For a more interesting comparison, we can calculate how many kilometres an ordinary «Peugeot Partner» needs to drive to make its

expenses for fuel reach the level of overpayment for an electric model:

$$292725 / 2,6 = 112586,54 \text{ (km)}$$

After the calculations, the difference in price between the two vehicles no longer seems so great, and we can see that buying expensive fuel it will be made up in a fairly short period of time. This is despite the fact that these calculations are based on perfect conditions for a given vehicle, and such concepts as maintenance, breakdowns, traffic jams, and many, many others are simply not taken into account. In addition to all the above, it is necessary to calculate the total costs that will be spent on the implementation of this «green» business strategy:

$$8 * 35 * 1286325 = 360171000 \text{ (€)}$$

The final amount is not big, if we take into account that the strategy is aimed at 8 years,

and «Nova Poshta» already has a large number of vehicles that need such an upgrade. The considered vehicle has good specifications that will allow the company to carry out its activities more efficiently. The difference in price between the two models is not so fundamentally significant to once again postpone the idea of a green future for a few more years.

The longer we delay with this initiative, the more serious the consequences will be in the future. In addition, we should not forget about the marketing aspect of this question, which is of great importance. By properly coordinating the action plan around this project, «Nova Poshta» can get huge benefits, opportunities and advantages that will cover all the costs invested. The main data and obtained results are shown in Table 6.

Table 6. Main data and results obtained from calculations

Main data and results obtained from calculations	
«Peugeot Partner»	«Peugeot e-Partner»
The price of the transport vehicle	
993600 €	1286325 €
Resources for 1 km of driving	
5 litres of fuel	0,18 kWh
The price for 1 kilometre of driving	
2,60 €	1,03 €
The difference in the price for 1 km of driving	
1,57 €	
How many kilometres must be driven for energy costs to set the level of difference in the price of vehicles	
112586,54 km	284199,02 km

Source: Developed by Vladyslav Marchenko&Dmytro Bugayko

According to the company's reporting data, all of its vehicles (more than 5,800 units) travelled 18300000000 km in 2020. Electric vehicles in the total amount are 2%. Based on this, we calculate the positive effect of the introduction of electric transport, taking into account the next assumptions:

- 2% of the total number of km:
 $183000000 * 0,02 = 3660000 \text{ (km)}$

- effect from the use of electric vehicles:
 $3660000 * 1,57 = 5746200 \text{ (€)}$

- assume that the share of electric transport will increase by 0,005 each year of the project life cycle, the term of which is 8 years.

- discount rate is 14%.

- the amount of investment costs corresponds to the amount of purchase of 35 units of electric vehicles: 45021375 (€). Taking into account all these, the investment project efficiency indicators were calculated and presented in Table 7.

Table 7. Calculation of investment project efficiency indicators

Year, t	Positive Cash Flow	Investment costs	Net Cash Flow	Discounted Cash Flow
0		45021375	-45021375	-45021375
1	5746200		5746200	5040526,32
2	7182750		7182750	5526892,89
3	8619300		8619300	5817781,99
4	10055850		10055850	5953870,46
5	11492400		11492400	5968792,44
6	12928950		12928950	5890255,70
7	14365500		14365500	5740989,96
8	15802050		15802050	5539551,71
Total	86193000	45021375	41171625	
Net Present Value (NPV)				457286,47
Profitability Index (PI)				1,0102

Source: Developed by Vladyslav Marchenko&Dmytro Bugayko

Therefore, taking into account the calculations, the project is feasible for implementation, since the profit from its implementation is 457286,47 (€), and the profitability index is 1,01. The article is a logical continuation of a number of publications of authors on the subject of sustainable development of logistics and transport [4-10].

Conclusions. As a result of the research carried out in this work, all the tasks were completed and the goals were achieved. The modern concept and importance of sustainable development, green technologies and green logistics was explained. Thanks to the conducted research, we realised that for many years, green logistics was considered in the world as an unnecessary direction, which was quite complex. Today, our awareness is changing in a positive way. This work helped us to perform an analysis of «Nova Poshta» company. We noted a large amount of information about the company, starting from its place, importance and ending with its operational indicators and green initiatives. We confirmed that «Nova Poshta» is one of the best representatives of the Ukrainian market, which has good development prospects, especially in the green logistics. Today, «Nova Poshta» is the largest private operator of postal services in Ukraine and one of the most fast-growing companies in our country, which provides high-quality logistics

and related services for businesses and individuals.

Detailed diagnostics of «Nova Poshta» has shown that today a really serious threat to the company is the emergence of powerful market players that will be able to attract the company's clients to their side, and that is why «Nova Poshta» must constantly take care of its comprehensive self-improvement and development in order to increase its overall competitiveness. Furthermore, we were able to analyse «Nova Poshta» financial indicators and operating results. As we can see, the company has good performance indicators and high market success. Of course, the impact of the «COVID-19» pandemic on its operations can be seen in the corresponding years, but since «Nova Poshta» has adapted to all new conditions, it was able to quickly restore its high results. The analysis of the company's green activities showed that its environmental strategy is quite simple and consists of three main directions: Energy saving; 3R principle and CO2 emissions reduction. Having seen the results of its activities, we can state that the company was able to achieve certain success in each of them.

We revealed the issue of decarbonization of logistics processes. Special attention was paid to demonstrate the importance of achieving the goal of electrification of transport. The company's position on this issue was explained and its first steps on this

path were described. We have qualitatively listed the key advantages and disadvantages of electric vehicles, identified their prospects and opportunities. As a result, it was concluded that they already have a large number of significant advantages, but the existing drawbacks should always be taken into account as well.

The last part of the work was devoted to the conceptual model of sustainable development of the «Nova Poshta» company due to the implementation of a «green» business strategy. The key emphasis in this thesis was on the decarbonization of the company's activities. Based on the limited resources of the company and the current situation in our country, this work was aimed at forming a «green» business strategy of the company through the optimal purchase of electric vehicles. As «Nova Poshta» uses thousands of vehicles in its operations, we noted that the transition process would not be quick, but quite complex. That is why we have demonstrated our «green» business strategy as a transition stage to future more active actions of the company. Taking the smoothest character, we focused it on the annual purchase of electric vehicles, in the amount of 35 units over an eight-year period. Having attentively analyzed the current market, in our «green» business strategy, it was proposed to consider the electric model «Peugeot e-Partner». We mentioned all its data, listed the key strengths and weaknesses. In our «green» business strategy, these electric transport vehicles were recommended to be used for transportations in the largest cities of the country. It was pointed out that «Peugeot e-Partner» has decent characteristics. We noted its key data, and directly compared with the electric version to identify its strengths and weaknesses.

We have calculated the cost per kilometre of both vehicles and how much more expensive the «Peugeot Partner» delivery option is compared to the electric model. The result was confirmation of the high level of environmental friendliness and economy of

«Peugeot e-Partner». Having found how much «Peugeot e-Partner» is more expensive than «Peugeot Partner», we stated that if we list all the advantages that the company can get, in case of buying the electric version, then the difference will be absolutely justified. Based on the results obtained, we calculated for what kilometre mileage the initial overpayment for the electric «Peugeot e-Partner» will be achieved. In the case of the usual «Peugeot Partner» - in a fairly short time, which is not a plus, as its starting advantage is quickly offset by the high cost of fuel (the price of which continues to rise). This is despite the fact that in the calculations, almost perfect conditions were taken for this transport, and such common things as long period of maintenance, expensive breakdowns, endless traffic jams, and many, many other concepts were not taken into account. The same calculations were made for the electric «Peugeot e-Partner» (based only on cheaper electricity). It will take place in the medium term, in a few years. This allowed us to see that the difference in price between these two cars is not as significant as it might seem.

Having calculated the total costs that will be spent on the implementation of this «green» business strategy, we have noted that they are not significant, as this strategy is planned for 8 years, and the company «Nova Poshta», already today, has a sufficient number of vehicles that need such a good update. Since the transport selected for the project has optimal characteristics, it can easily find its place in a large route network throughout the country. We reminded that we should not forget about the marketing aspect of the issue, as «Nova Poshta» can get huge benefits from it, which will cover all the invested efforts and resources several times over.

Finally, we decided to find out the positive effect of the introduction of electric transport, taking into account flexible assumptions. Based on them, the investment project efficiency indicators were calculated. It is absolutely clear, that given project is

feasible for implementation, its profit is great and the profitability index is 1,01.

As a final conclusion, it can be noted that the idea of a green future for the company should not be postponed for a few more

years. «Nova Poshta» must start to act now. The longer it delays with the transition initiative, the more serious consequences for it will be in the future.

References

1. Share UA Potential. (2021). Nova Poshta is the largest private operator of postal services in Ukraine. URL: <http://shareuapotential.com/Emitents/novaposhta.html>
2. U.S.-Ukraine Foundation. In 2021, Nova Poshta delivered 372 million parcels and cargo. URL: <https://usukraine.org/organizations/nova-poshta>
3. The Odessa Journal. (2022). The company's network has about 10,000 branches throughout Ukraine. URL: <https://odessa-journal.com/nova-poshta-invested-eur-28-5-million-in-a-new-automated-terminal/>
4. D. Bugayko, Yu. Kharazishvili. Theoretical principles of strategic aviation safety management in the context of ensuring sustainable development of the national economy. Bulletin of Economic Science of Ukraine. 2020. № 1 (38). P. 166-175. –Link - file:///C:/Users/User/Downloads/1523-2961-1-SM.pdf
5. Kharazishvili Yu.M., Bugayko D.O., Lyashenko V.I. Sustainable development of aviation transport of Ukraine: strategic scenarios and institutional support: monograph / edited by Yu.M. Kharazishvili; NAS of Ukraine, Institute of Industrial Economics. Kyiv, 2022. 276 p.- Link - file:///C:/Users/User/Downloads/1502-2919-1-SM.pdf
6. Ovdiienko O., Hryhorak M., Marchuk V., Bugayko D. An assessment of the aviation industry's impact on air pollution from its emissions: worldwide and the Ukraine. Environmental & Socio-economic Studies. [Katowice]. 2021. Vol. 9. № 2. P. 1-10. -- Link - http://www.pjv.nuoua.od.ua/v2-5_2018/1/38.pdf
7. Bugayko D., Kharazishvili Yu., Antonova A., Zamiar Z. Identification of Air Transport Ecological Component Level in The Context of Ensuring Sustainable Development of the National Economy. Intellectualization of Logistics and Supply Chain Management: the electronic scientifically and practical journal. 2020. № 3. October. P. 38-53. URL: https://smart-scm.org/wp-content/uploads/3_20_titul_j_full.pdf
8. Dmytro Bugayko, Yuliya Ierkovska. Institutional Measures of Air Transport Safety Strategic Management at the Level of State Regulation. Intellectualization of Logistics and Supply Chain Management. The electronic scientifically and practical journal v.9 (2021). P.6 – 19. ISSN 2708 - 3195. <https://smart-scm.org>.
9. Dmytro Bugayko, Yuliya Ierkovska, Fariz Aliev, Mariia Bahrii. The Concept of National Integrated Risk Management of Aviation Transport of Ukraine. Intellectualization of Logistics and Supply Chain Management. The electronic scientifically and practical journal v.10 (2021). P.6 – 18. ISSN 2708-3195 <https://smart-scm.org>.
10. V. Marchenko, Dm. Bugayko, Yu. Yerkovska, D. Bugayko, Development of transport logistics in conditions of globalization: concept, key features and advantages. III International scientific and practical Internet conference "Business analytics: models, tools and technologies". K: NAU. C 71-75.

UDC 347.823.21

DOI: <https://doi.org/10.46783/smart-scm/2023-20-2>

JEL Classification: M12, O11

Received: 08 August 2023

Reznik V. V. Postgraduate Student, National Aviation University (Ukraine)

ORCID – 0009-0000-9497-5578

Researcher ID –

Scopus author id: –

Bugayko D.O. Doctor of Science (Economics), Professor, Corresponding Member of the Academy of Economic Sciences of Ukraine, Vice - Director of ES International Cooperation and Education Institute, Instructor of ICAO Institute, Professor of the Logistics Department, National Aviation University (Ukraine)

ORCID – 0000-0002-3240-2501

Researcher ID – ABF-5564-2021

Scopus author id: – 57216582348

COMPARATIVE ANALYSIS OF THE LEGISLATION OF UKRAINE AND INTERNATIONAL NORMS THAT REGULATE THE IMPLEMENTATION AND FORMATION OF AVIATION LOGISTICS SYSTEM

Volodymyr Reznik, Dmytro Bugayko. *"Comparative analysis of the legislation of Ukraine and international norms that regulate the implementation and formation of aviation logistics system".* Intermodal transportation plays an important role in the global economy. In light of the above, it is necessary to analyze the experience of aviation regulation in developed European countries. Aviation legislation in Ukraine is currently at the stage of development. It is important to analyze the experience of the development of aviation legislation and the regulation of personnel training in the aviation industry in European countries. It is important to study the organization of personnel training in the aviation industry. The issue of public administration has not been sufficiently analyzed in Ukrainian legislation. Active work on the realization of a joint aviation space is ongoing. Therefore, the creation of a common aviation space gives provision of mutual free access to the air transportation market. Mutual free access to the air transport market is based on equal conditions of competition and common rules, especially in the field of safety. In particular, common rules apply in the fields of aviation safety & security as well as air traffic management of Ukraine and the EU. It gives possibilities of further development of cooperation between the EU and the Ukrainian in sphere of aviation logistics.

Keywords: multimodal transportation, cargo transportation, normative documents, optimization processes, routs planning.

Володимир Резнік, Дмитро Бугайко «Порівняльний аналіз законодавства України та міжнародних норм, що регулюють впровадження та формування авіаційної логістичної системи». Інтермодальні перевезення відіграють важливу роль у світовій економіці. У світлі викладеного необхідно проаналізувати досвід авіаційного регулювання розвинутих європейських країн. Авіаційне законодавство в Україні знаходиться на стадії розвитку. Важливо проаналізувати

досвід розвитку авіаційного законодавства та регулювання підготовки кадрів в авіаційній галузі в країнах Європи. Актуальним є дослідження організації підготовки кадрів в авіаційній галузі. В українському законодавстві недостатньо проаналізовано питання державного управління. Триває активна робота над впровадженням Єдиного авіаційного простору в Україні. Тому створення єдиного авіаційного простору сприяє взаємному вільному доступу до ринку авіаперевезень, який базується на рівних умовах конкуренції та єдиних правилах, особливо у сфері безпеки. Зокрема, загальні правила застосовуються у сферах безпеки авіації, авіаційної безпеки та організації повітряного руху, що сприяє співробітництву між авіаційними галузями України та ЄС.

Ключові слова: транспортна система, вантажні перевезення, мультимодальні перевезення, процеси оптимізації, планування маршрутів

Introduction. The establishment of a system for the development of logistics activities is an integral part of a market economy. It is an integral part of the market economy. Globalization of the world economy It is an important element of integrating Ukraine into the modern international system. Economic ties. It also solves socio-economic problems and solving socio-economic problems and improve the quality of life of the population. The aviation industry is a sector of fundamental and strategic importance in Ukraine. Air transport is one of the least historic means of transportation.

Stable development of Ukraine today is impossible without the development of the aviation sector. Stable development of the state is impossible without the development of aviation. Important Administrative and legal regulation of civil activities Development of scientific, technical, commercial and intergovernmental relations in aviation activities It has been facilitated by technological progress, trade, interstate relations and the European integration process, It has been facilitated by the European integration process. To achieve this advanced aviation legal system is necessary, close to European standards. It is important to study the experience of the development of aviation. European countries' legislation in the aviation sector, training regulations is important to study. The issue of public administration is not sufficiently studied in the Ukrainian legislation. The problem of public administration persists.

Thus, the main objective of the article is to clear the advantages and disadvantages of legal regulation of logistics activities.

The issue of legal regulation in the field of civil aviation were reflected in the works of O. Radchuk O. and Sadikov O., Konstantinova V., Dikovskaia I., Kuzmenko L., Bordunov V., Mikhalchenko I. and many others.

Special attention should be paid to work of I. Bezludko D.I. Cargo transportation contract by air transport under the civil law of Ukraine.

A number of Ukrainian researchers such as Kharazishvili Y. [2, 7], Bugayko D. [1-2, 4-7, 32-33], Reznik V. [1], Griborak M., Ovdienko O., Marchuk V. [4] Logutova T. G., Poltoratskyi M. M [3] Hariesh Manaadiar [8-9] , David Simchi-Levi and Pierre Haren [11-13], Perkhun L.P.[16], F. Pérez-Galarce [17], Hryhorak M.Yu [19, 32] are devoted to the study of the problems of further development of intermodal transportation. The work of many researchers is devoted to the development of aviation logistics, including: Johnson R., Hegre H., Karlsen J., Nygård H. M., Strand H., Urdal H., Shallcross N. J., Ahner D. K., Bogachov S., Feldman N., Eiran E., Rubin A., Brown G., Langer A., Schirch L., Kaspersen A., Barth E., Shetler-Jones Ph., Shallcross N. J., Ahner D. K., et al.

Also, among domestic researchers of the mentioned issue, the works of such scientists as: Arefieva O[20]., Simkova T., Zhurakivskyi V., Kharizashvili Yu., Bugayko D., Lyashenko V., Solovyova O., Gerasimenko I., Pron S. should be noted., Kravchenko T., Vysotska I., Valko A.,

Volkovska G [21], Vysotska I [22], Voychenko T., Radchenko O. [23], Gura S [24]. and others.

Also, among the foreign researchers of the issue mentioned works are: Poliak M., Poliaková A., Mrníková M., Šimurková P., Jaśkiewicz M., Jurecki R., who researched the Competition and Regulation in the Provision of Local Transportation Services. Also, Glover, L. should be mentioned.

Dissertation studies sufficiently cover the issues of institutional support for the development of air transport in Ukraine, methodological aspects of increasing the efficiency of enterprises in the specified industry and legal aspects (Hura S. [24].), scientific justification for increasing the efficiency of managing logistics costs in the multimodal transportation (Kharchenko M.), the development of innovative activity of logistic companies (Tsymbalistova O.), management of the efficiency of logistics activities of e companies (V. Voytsekhovskiy) and others.

While highly appreciating the available scientific achievements of domestic researchers, we will nevertheless single out insufficiently covered scientific problems related to the development of logistics in the conditions of martial law and in the post-war period in Ukraine. The article was written to note the most important factors influencing the organizing of the multimodal transportation under martial law.

The purpose of the article is to provide research is to provide the theoretical foundations and problems of managing multimodal transportation and to develop article is to clear the advantages and disadvantages of legal regulation of logistics activities. It was also reviewed the main bottlenecks at the process of the legal regulation of transportation during the state of martial law". It was also reviewed on the example referred to the Transport Organization, including the data provided by LLC "Freight Transport Partner".

Presentation of the main results. It should be noted that Ukraine's aviation legislation is not similar to the EU's uniform

legislation. Ukraine's aviation legislation does not resemble the EU's Uniform Law or even the US legislation. It also does not resemble US law and in many cases diametrically opposed. On the other hand . Harmonization of Ukrainian and European aviation legislation is crucial for the interests of Ukraine and the EU countries. Harmonization of Ukrainian and European aviation legislation is very important for the interests of Ukraine and the EU countries, Harmonization of Ukrainian and European aviation legislation and development of aviation in the European region in the interests of Ukraine and EU countries. In the interests of Ukraine and the EU countries, it is very important that Ukraine and Europe cooperate together to harmonize aviation legislation and develop air transport in the European region. As a result of the analysis of international law, the following conclusions were reached Civil aviation needs international regulation should be addressed at the global and regional levels. Regional level. At the regional level, civil aviation conventions have the following consequences regulate matters within the territory (continent). Globally, these include the following agreements Regional includes agreements that regulate aviation-related matters without territorial restrictions. It is important to note what is happening today. This is the globalization of the international aviation sphere [29].

As Kharchenko V. P. and Bugayko D. O. note, the globalization of international air transport involves many things. There are many aspects of international air transportation. The globalization of international air transport involves many elements that are integral to modern air transport.

Development of a global security system is an integrate key international, regional, intergovernmental and non-state organizations; and Integrate international, regional, interstate and non-state organizations to increase security, efficiency

and economy Improving safety, efficiency and economy [30].

Facilitation of their activities:

- Coordination of actions on standardization and enlargement international activities related to air navigation services,
- the development of competition between airlines and a non-discriminatory

environment in international markets air transportation [30]

In order to clear the main normative documents on transportation the author provided the documents.

The activities of the transport sector of Ukraine are regulated by legislative documents of various hierarchical levels (Table 1)

Table 1. Hierarchical levels of regulation of multimodal and transportation

Level	Regulation of multimodal transportation	
International	First - international documents	The UN Convention on International Mixed Transportation of Goods, the provisions of which apply to all types of transport involved in mixed transportation, if the place of receipt or delivery of the cargo is in a country that is a member of the Convention. The United Nations Conference on Trade and Development, where rules were developed for four types of transport, which include intermodal, multimodal, segmented and combined transport. The project of the international convention on mixed transport "Tokyo Rules". About the forms of transport documents (FIATA and BIMCO) for registration of mixed shipments
	Second - Codes of Ukraine	Civil Code of Ukraine dated January 16, 2003 with changes and additions, Merchant Shipping Code of Ukraine dated May 23, 1995 with changes and additions, Tax Code of Ukraine dated December 2, 2010 with changes and additions
	Third - Laws of Ukraine	The Law of Ukraine "On Multimodal Transportation" and the draft Law of Ukraine "On Amendments to the Tax Code of Ukraine in connection with the adoption of the Law of Ukraine "On Multimodal Transportation"" regarding the legal and organizational foundations of multimodal transportation, aimed at creating conditions for their development and improvement , encouraging the use of more ecologically clean modes of transport to protect the environment, prevent climate change and excessive energy consumption, the Law of Ukraine "On Transport" dated November 10, 1994, the Law of Ukraine "On Cargo Transit" dated October 20, 1999, the Law of Ukraine "On Railway transport" dated July 4, 1996, which regulate the transportation of goods in direct mixed traffic.
National	Fourth - Transport statutes	The Statute of Railways of Ukraine, approved by the Decree of the CMU dated April 6, 1998, the Statute of Road Transport of the Ukrainian SSR, approved by the Decree of the Council of Ministers of the Ukrainian SSR dated June 27, 1969, the Statute of Inland Water Transport of the USSR, approved by the Decree of the Council of Ministers of the USSR dated October 15, 1955.
	Fifth - Rules of cargo transportation	Rules for the transportation of goods in direct mixed rail-water transport, approved by the Ministry of Transport of Ukraine dated May 28, 2002, Rules for the transportation of goods by road transport in Ukraine, approved by the Order of the Ministry of Transport of Ukraine dated October 14, 1997; Rules of air transportation of goods, approved by the Order of the State Service for Supervision of Aviation Safety dated March 14, 2006
	Sixth - Decisions of carrier companies	Decisions of business entities regarding the formation of a tariff policy for freight transportation

Developed by: Reznik Volodymyr, Dmytro Bugayko

According to the presented hierarchical levels of regulatory regulation of mixed transportation, the first level is headed by international documents. It should also be

noted that regulation is represented by the activities of international organizations. The main purpose of their activity is:

- promoting the development of political, economic and cultural cooperation between states, strengthening friendly relations between them;

- interests of end users, market participants, as well as society regarding effective regulation.

The second level of normative regulation is the Codes of Ukraine on the regulation of activities in the field of transport.

The third level, in accordance with the presented hierarchical levels of regulatory regulation, are the Laws of Ukraine on the regulation of activities related to the legal and organizational foundations of mixed transportation, aimed at creating conditions for their development and improvement.

Levels from the fourth to the sixth, according to the presented hierarchical levels of regulatory regulation, are presented as follows: Transport statutes, Rules of cargo transportation, Decisions of carrier companies. Any type of economic activity requires legal regulation. It is appropriate to consider the main laws and legal acts in the field of freight transportation. One of the documents is the Economic Code of Ukraine, which has chapter 32 Legal regulation of cargo transportation. In this Code, the transportation of goods is recognized as an economic activity related to the movement of products of industrial and technical purpose and consumer products by railways, roads, waterways and air, as well as the transportation of products by pipelines. Carriers, consignors and consignees are the subjects of cargo transportation relations. Cargo transportation is carried out by rail freight transport, road freight transport, sea freight transport and inland waterway freight transport, air freight transport, pipeline transport, space transport, other types of transport. General conditions of cargo transportation, as well as special conditions of transportation of certain types of cargo (explosives, weapons, poisonous, flammable, radioactive and other dangerous substances, etc.) are determined by this Code and the codes, laws, transport statutes and other

regulatory legal acts issued in accordance with it.

The Code contains the following articles:

- Cargo transportation contract;
- Acceptance of cargo for transportation;
- Change of conditions of transportation;
- Receiving the cargo at the destination;
- Fee for cargo transportation;
- Liability of the carrier for delay in cargo delivery;
- Carrier's responsibility for loss, shortage, damage to cargo;
- The procedure for resolving disputes regarding transportation;
- Transport-forwarding contract.

Also in the Code there is such an article as the Contract of Multimodal Transportation. In accordance with this article, under the contract of multimodal transportation, transportation is carried out by two or more modes of transport on the basis of a document of multimodal transportation of goods under the responsibility of the operator of multimodal transportation. The contract of multimodal transportation is concluded between the operator of multimodal transportation and the customer of the multimodal transportation service in accordance with the Law of Ukraine "On Multimodal Transportation". Agreement on international multimodal transportation can be represented as the kind of external economic agreement between two states on especial terms, which were earlier confirmed. International conventions help to solve the main argued questions between the participants and sub-contractors. In other cases, INCOTERMS and state legal regulations are used. Conception of mixed transportation was approved by FIATA document, that is called Combined transport bill of lading. Tokyo rules are the basis of this documents. This rules were adopted in 1969 on International Conference on Multimodal Transportation in Tokyo. How to improve the

current legislation of Ukraine? In order to improve the current legislation of Ukraine, it is important to study and analyze the foreign experience of regulating transportation. It is important to study and analyze Ukrainian legislation in the field of aviation. The transport sector in Ukraine today The transport sector is a priority in Ukraine. However, it should be noted that Ukraine does not pay enough attention at the legislative level. Insufficient attention is paid to the development of the aviation sector. Therefore, it is necessary to do the following Analyze foreign experience. Compare with Ukrainian legislation. Compare with Ukrainian legislation. Based on the above analysis Based on the analysis, the following recommendations can be made Improvement of administrative and legal support of civil aviation activities in Ukraine. As a result of the analysis of local legislation. Regarding the key issues in the development of the aviation sector in Ukraine, the following conclusions were reached Airports and aviation activities in Ukraine today include transportation, flight performance and performance regulation Unmanned aircraft flights, training of aviation specialists There is the training of aviation specialists. Transportation safety Existence of institutions and mechanisms to ensure transportation safety in foreign countries (especially developed countries in the EU)

Institutions and mechanisms for ensuring transport safety are well developed in other countries (especially in developed countries of the EU and the USA). In Ukraine, relevant institutions and mechanisms are widespread. Therefore, it was decided to introduce and compare foreign systems. Ukraine's experience in civil aviation administrative and legal regulation. Therefore, it was decided to introduce and compare foreign experience of civil aviation administrative and legal regulation. So, there are a lot of another convention and agreements that are used depending on the kind of transport. For example, in automobile transport, CMR (car movement regulation) is used.

During Air Transportation, the rules and documents approved by Montreal Convention are used. The main documents are AirWay Bill, Cargo consignment. Later, the International Trade Association handled and developed this rules for documental accompanying of the multimodal transportation process. This adopted regulations had not satisfied the United Nations organization. The new convention of United Nations on mixed cargo transportation had been adopted in 1980. But during the process of transferring the cargo from one mode of transport to another, the cargo also transferred from one sphere of influence to another there was not one general document accompanying the multimodal transportation.

In November 2021, the Verkhovna Rada of Ukraine adopted the Law of Ukraine on Multimodal Transportation for issues of climate change and excessive energy consumption.

The law provides for the implementation of Council Directive 92/106/EEC of December 7, 1992 on the establishment of common rules for certain types of combined transportation of goods between member states (in accordance with Annex XXXII to Chapter 7 "Transport" of Chapter V "Economic and sectoral cooperation" of the Agreement on association Ukraine - EU). The law introduced the concept of multimodal and combined transportation of goods, multimodal terminal, document of multimodal transportation, operator and customer of multimodal transportation, definition of multimodal transportation contract, its essential conditions, rights and obligations of its parties, basic principles of state regulation and state assistance regarding this type of transportation. The law enshrines the right of participants in multimodal transportation to transport cargo based on the conclusion of a single contract (contract of multimodal transportation) for all stages of transportation, regardless of the change in modes of transportation, and to carry out transportation of cargo under one

transportation document (document of multimodal transportation), on which the parties have reached an agreement. The law provides that during the provision of multimodal cargo transportation services, the responsibility of the multimodal transportation operator for the cargo to the customer of the service covers the period from the moment of acceptance of the cargo to the multimodal transportation and until the moment of delivery of the cargo. Also, relations in the field of multimodal transportation are regulated by the Civil Code of Ukraine, the Code of Merchant Shipping of Ukraine, the Customs Code of Ukraine, the laws of Ukraine "On Transport", "On Railway Transport", "On Road Transport", "On Cargo Transit", "On foreign economic activity", "On transport and forwarding activities", "On state aid to business entities", this Law, other laws, as well as other normative legal acts adopted in accordance with them. Air transportation is carried out in accordance with the

requirements of the Convention for the Unification of Certain Rules of International Air Transportation (Montreal, May 28, 1999), as well as the norms of the Civil Code of Ukraine, the Economic Code of Ukraine, and the Air Code of Ukraine. They are regulated by the Order of the Ministry of Transport No. 793 dated 14.10.2003 "On the approval of the Rules for Air Cargo Transportation" (registered at the Ministry of Justice of Ukraine on 07.11.03 under No. 1023/8344) by the Order of the Ministry of Transport No. 568 of 25.07.2003 "On the Approval of the Rules of Air Transportation of passengers and baggage" (registered in the Ministry of Justice of Ukraine on 29.08.03 under No. 755/8076) and other normative acts, and general provisions on transportation and rules of transportation and provision of services. Today, there are more than 3,000 bilateral agreements regulating international air transport. Bilateral agreements exist.

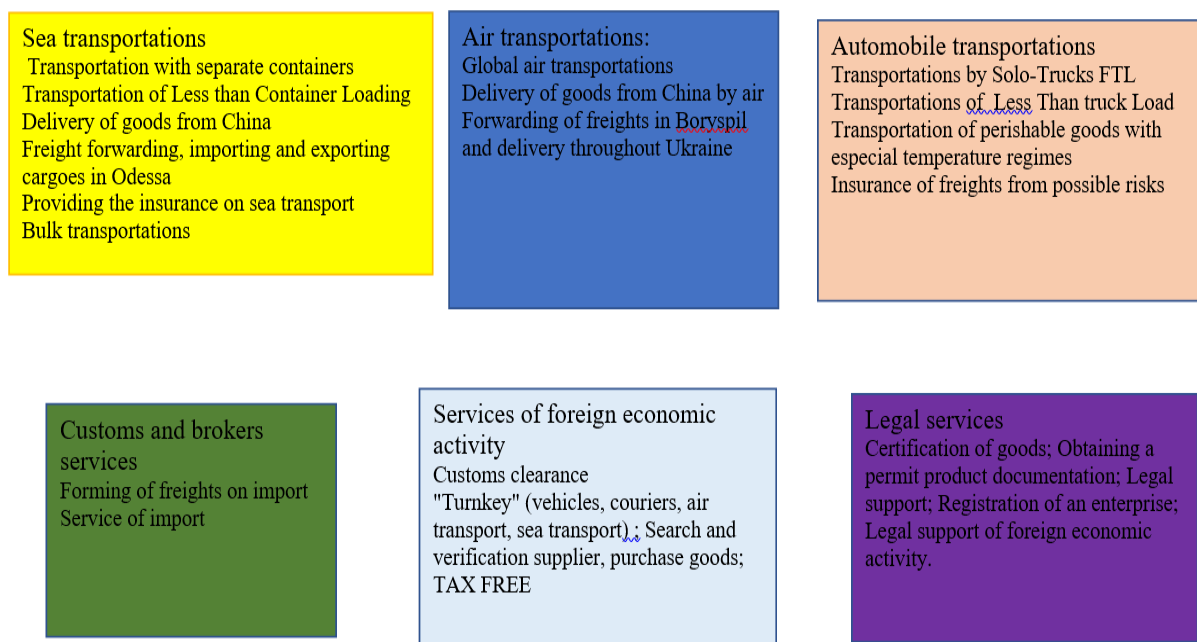


Figure 1 – Legal Multimodal Transportation Services by Transport Operator Freight Transport Company
 Developed by: Reznik Volodymyr, Dmytro Bugayko

These agreements determine the number of airlines that each Contracting State may designate. The number of airlines that

each Contracting State may designate Overhead lines are identified and maximum frequencies are determined flights and share

restrictions are established. Limitations on the share of foreign investments in the ownership structure of airlines and a tariff regime are established. According to I. Bezludko, the tariff system is also defined. He cites the example of deepening cooperation for Ukraine's integration into the European and world community. This is deepening cooperation for the integration of Ukraine into the European and world community. This to increases responsibility of air transport operators, gives the possibility of concluding bilateral and multilateral agreements on air transportation, opens prospects for conclusion of bilateral and multilateral agreements on air transportation [32]. All these factors are taken into account while providing services at Freight Transport Partner organization multimodal transportation services.

In addition, the field of intermodal transportation is regulated by the Civil Code of Ukraine, the Commercial Shipping Code of Ukraine, the Customs Code of Ukraine, the Law of Ukraine "On Transport", "Railway Transport", "Road Transport", "Freight Transport", "Foreign Economic Activities", "Transportation and Freight Forwarding Activities", "State aid to legal entities 'Railway transport', 'Road transport', 'Freight transport', 'Foreign economic activities', 'Transport and transport activities', 'State aid to organizations' are regulated by this Law, other laws and other normative legal acts adopted in accordance with them. Air transport is carried out in accordance with the requirements of the norms of the 'Convention on the Unification of Certain Rules of International Air Transport' (Montreal, 28 May 1999), the Civil Code of Ukraine, the Economic Code of Ukraine and the Air Code of Ukraine. These rules are regulated by the Decree of the Ministry of Transport No. 793 of October 14, 2003 'On Approval of the Rules of Air Cargo Transportation' (Register of the Ministry of Justice of Ukraine No. 1023/8344 of November 7, 2003) and the Decree of the Ministry of Transport No. 568 of July 25, 2003. . Decree of the Ministry of Transport 'On

Approval of the Rules of Air Transportation of Passengers and Baggage' dated July 25, 2003 No. 568 (Register of the Ministry of Justice of Ukraine dated August 29, 2003 No. 755/8076) and other normative acts, as well as transport rules and general provisions on the provision of transport and services.

Conclusions. In today's unstable situation of institutional functioning, it is important to create a logical chain that forms an effective organizational and economic mechanism for innovative development of the transport sector in the intermodal transport system. So, legal regulations of multimodal transportations plays a huge role in the whole process.

The objectives of innovative activities of transport enterprises are:

- Ensuring the quality of transportation services;
- Responsiveness to orders and timeliness of transportation;
- Ensuring the safety of freight transportation;
- Implementation of up-to-date information systems;
- Use of energy-saving technologies;
- Increasing the environmental compatibility of transport services .

The priority direction of state regulation of the economy is the stimulation of innovative activities, which requires the establishment of an effective innovation and innovative processes management system to ensure the exit of the transport sector from the crisis situation and the development of an intermodal transport system. The main reasons hindering the innovative development of the transport sector in the intermodal transport system are:

- Incomplete legal basis for the implementation of intermodal transportation of goods;
- Incompatibility of regulations on the transportation of dangerous goods with EU norms;
- Lack of conditions for the establishment and operation of national intermodal

transport operators; - Incomplete customs policy in transport;

- High risks for intermodal operators when organizing long-distance transport involving multiple means of transport;

- Technological backwardness of transport and infrastructure; low level of implementation of modern technologies and innovative policies in the transport sector;

- Disproportion between the level of development of railway infrastructure capacities and cargo handling capacities of ports;

- Existence of 'bottlenecks' in the infrastructure for transit transport by rail; - low level of development of railway infrastructure capacity and port cargo handling capacity;

- Slow adoption of new information technologies;

- Lack of compensation mechanisms for investments in strategic transport facilities;

- Lack of a transparent accounting system for transport costs and effective control mechanisms for the provision and use of funds for the repair, reconstruction and construction of transport infrastructure;

- Lack of specialized and experienced professionals in the field of intermodal transport; etc.

Taking into account the experience of intermodal transport in Europe, the creation and development of this type of transport in Ukraine is of great importance and requires solving a number of issues related to the organization of transport on existing and new routes, in particular, through adaptation to the norms of the European Union. Due to the complex geopolitical situation, road and rail transport directs transport flows westward. It is clear that the work of the transport complex reflects the state of the domestic economy, which is currently not in the best condition.

In order to make the most of Ukraine's transport potential, especially as a transit country, it is necessary to create a customer-oriented transport service system, to ensure effective organization of the country's transport and road complexes, to ensure effective organization of all types of transport

potential and capacities on the basis of partnership and competition in transport. Measures should be taken to achieve synergies from the combination of the two

The prerequisites for the formation of intermodal transport routes on the market under modern conditions were analyzed. The pre-war conditions of the transportation market were analyzed: Until February 2022, the market had a heterogeneous development structure, as the global downturn following the coronavirus pandemic had a significant impact on the market. At the same time, it should be noted that total transportation volumes in 2020 increased compared to 2019. This increase was mainly due to road transport. Other types of transport remained at the same level (water transport, air) or decreased (rail). The beginning of the large-scale occupation had a significant impact on Ukraine's transport infrastructure, many railway and road routes were destroyed, air routes were completely closed, and sea ports were almost completely blockaded. The increase in passenger and freight traffic to the West has highlighted problems with border infrastructure Logistics companies, like many commercial enterprises, had to rebuild their operations with the start of the war and develop new operational plans under martial law conditions. Therefore, companies, having experienced the destruction of many transportation schemes, had to find ways to build new routes. Mixed air transport will be taken to airports in Poland and Germany, from where it will be transported by road to Ukraine. Transportation is a key complex activity related to the movement of material resources, work-in-progress or finished products by a certain means of transport in the logistics chain. The development of the multimodal cargo transportation system contributes to the solution of the region's economic issues; ensures coordination and organizational-technological interaction of all links of the cargo delivery chain; ensures the development of the transport services market infrastructure. The development of the

country's transport complex under martial law is a very important task for supporting the country's economy. On the one hand, the need to restore many kilometers of destroyed roads will require huge investments, and on the other hand, it gives an opportunity to immediately build a modern transport infrastructure that meets all global quality requirements. At the enterprise level, it is

necessary to solve the tasks of restructuring one's own business processes or modernizing existing ones to adapt to external circumstances. Thus, due to the cancellation of air transportation and the blockade of sea ports, the company should focus to rebuild its multimodal routes. Delivery by air transport will be carried out to the airports of European countries.

References

- 1) Bugayko D.O., Reznik V.V., Borysiuk A.V., Bugayko D.D. (2023) "Transformation of the organization of multimodal transportation under martial law" – Intellectualization of logistics and Supply Chain Management. [Online], vol.17, pp.6-22, available at: <https://smart-scm.org/en/journal-17-2023/transformation-of-the-organization-of-multimodal-transportation-under-martial-law/>. DOI: <https://doi.org/10.46783/smart-scm/2023-17-1>
- 2) Kharazishvili, Y., Bugayko, D., Liashenko, V., & Kwilinski, A. (2021). Systemic approach to determining the safety of sustainable development of air transport: indicators, level, threats. *Journal of European Economy*, 20(1), 146-182.
- 3) Logutova T. G., Poltoratskyi M. M. The current state of the transport infrastructure of Ukraine. Theoretical and practical aspects of economics and intellectual property. 2015. Issue 2(12). T. 2. P. 8-14
- 4) Ovdiienko, O., Hryhorak, M., Marchuk, V., & Bugayko, D. (2021). An assessment of the aviation industry's impact on air pollution from its emissions: worldwide and the Ukraine. *Environmental & Socio-economic Studies*, 9(2), 1-10.
- 5) Bugayko, D., Leshchynskyi, O., Sokolova, N., Isaienko, V., & Zamiar, Z. (2019). Analysis of the Aviation Safety Management System by Fractal and Statistical Tools. *Logistics and Transport*, 44, 41-60.
- 6) Dmytro Bugayko, Yuliya Ierkovska. Institutional Measures of Air Transport Safety Strategic Management at the Level of State Regulation. *Intellectualization of Logistics and Supply Chain Management*. The electronic scientifically and practical journal v.9 (2021). P.6 – 19. ISSN 2708 - 3195. <https://smart-scm.org>.
- 7) Bugayko D., Kharazishvili Yu., Antonova A., Zamiar Z. Identification of Air Transport Ecological Component Level in The Context of Ensuring Sustainable Development of the National Economy. *Intellectualization of Logistics and Supply Chain Management: the electronic scientifically and practical journal*. 2020. № 3. October. P. 38-53. URL: https://smart-scm.org/wp-content/uploads/3_20_titul_j_full.pdf
- 8) Hariesh Manaadiar. (2013). Understanding the difference between Intermodal and Multimodal transport. *Shipping and Freight Resource*. URL: <https://www.shippingandfreightresource.com/difference-between-intermodal-and-multimodal-transport/>
- 9) Hariesh Manaadiar. (2013). Understanding the difference between Intermodal and Multimodal transport. *Shipping and Freight Resource*. URL: <https://www.shippingandfreightresource.com/difference-between-intermodal-and-multimodal-transport/>

- 10) The Recalculation of the Weights of Criteria in MCDM Methods Using the Bayes Approach-[Electronic source]-Link-
https://www.researchgate.net/publication/325648841_The_Recalculation_of_the_Weights_of_Criteria_in_MCDM_Methods_Using_the_Bayes_Approach
- 11) David Simchi-Levi and Pierre Haren [Electronic source] – Access Link -
<https://hbr.org/2022/03/how-the-war-in-ukraine-is-further-disrupting-global-supply-chains>
- 12) Criteria for decision making [Electronic source] – Link-
<https://studfile.net/preview/6267450/> P:17
- 13) Mokhova Yu.L. Significance of the transport gallery in the system of the national economy of Ukraine. Manager. 2015. No. 1 (69). P. 88-96. 8 Mokhova Yu.L. Significance of the transport gallery in the system of the national economy of Ukraine. Manager. 2015. No. 1 (69). P. 88-96.
- 14) Hariesh Manaadiar. (2013). Understanding the difference between Intermodal and Multimodal transport. Shipping and Freight Resource. URL:
<https://www.shippingandfreightresource.com/difference-between-intermodal-and-multimodal-transport/>
- 15) Ovchar P.A., Golubka S.M. Strategy for the development of the motor transport system: change and special molding. Economic Bulletin. 2018. No. 1. S. 102-108.
- 16) Perkhun L.P., Bratushka S.M., Sinyavska O.O. K13 Stability of dynamic systems with an invariable hour: heading guide / V.A. Kadievsky, L.P. Perkhun, S.M. Brother, O.O. Sinyavska. – Sumi: Vidavnistvo: PP Vinnichenko M.D., FOP Litovchenko Y.B., 2014. – 120. p. 18 -
<https://core.ac.uk/download/pdf/141455028.pdf>
- 17) F. P´erez-Galarce, E. Alvarez-Miranda, A. Candia, and P.Toth“On exact solutions for the Minmax Regret spanning tree problem. Computer Operation Research, 2014, P.2. -
<https://www.ijsr.net/archive/v9i2/ART20204447.pdf>
- 18) The Recalculation of the Weights of Criteria in MCDM Methods Using the Bayes Approach-[Electronic source] - Link-
https://www.researchgate.net/publication/325648841_The_Recalculation_of_the_Weights_of_Criteria_in_MCDM_Methods_Using_the_Bayes_Approach
- 19) Logistics of supply, production and distribution. Hryhorak M.Yu., Katerna O.K., Karpun O.V. Tutorial. - K.: NAU, 2017. – P.- 75-84
- 20) Arefieva, O., Simkova, T., & Zhurakivskyi, V. (2022). STRATEGIC DEVELOPMENT OF AIR TRANSPORT ENTERPRISES IN COMPETITIVE CONDITIONS. Economy and society, (44).
<https://doi.org/10.32782/2524-0072/2022-44-101>
- 21) A. Valko, O. Soloviova, G. Volkovska, I. Herasymenko Konstrukting a system of aviation safety as a key element of airport service quality // Eastern-European Journal of Enterprise Technologies. - Kharkiv,– 2021. – P. 38-50
- 22) Soloviova O., Herasymenko I., Pron S., Kravchenko T., Vysotska I. Directions of communication relations development in the agricultural aviation works market // Financial and credit activity: problems of theory and practice. -. Kharkiv, 2022. - P. 238–247.
- 23) Voichenko T., Radchenko O. Peculiarities of managing the marketing of transport services. URL:
<http://projects.dune-hd.com/bitstream/handle/2010/36667/21-5695.pdf?sequence=1&isAllowed=y#page=277>

24) Hura S.M. (2021). Institutional and economic mechanisms for regulating the development of aviation transport. URL:https://nau.edu.ua/site/variables/news/2021/12/%D0%93%D1%83%D1%80%D0%B0_%D0%A1_%D0%9C_%D0%B0%D0%B2%D1%82%D0%BE%D1%80%D0%B5%D1%84%D0%B5%D1%80%D0%B0%D1%82.pdf

25) Yurii Vovk, Oleh Karyy. Innovation Process Management in Ukraine: Problems in Commercialization Of Scientific and Technical Developments/ Monography/p.8-10 URL: file:///C:/Users/User/Downloads/Innovation%20Process%20_%20Monograph%20_%202018.pdf

26) Electronic source [Link] - <https://dia.dp.gov.ua/en/the-cargo-turnover-of-ukrainian-seaports-will-decrease-by-three-times-in-2022/>

27) Electronic source [Link] - <https://gmk.center/en/news/ukrainian-railways-has-transported-1-million-tons-of-iron-ore-since-the-beginning-of-june/>

28) National Transport Strategy of Ukraine 2030 Electronic source p. 9-14 [Link] https://mtu.gov.ua/files/for_investors/230118/National%20Transport%20Strategy%20of%20Ukraine.pdf

29) Moskalenko S. I. State regulation of civil activity Aviation in Ukraine: Monograph. Kropyvnytskyi: LA NAU. 2018. 328 p.

30) Kharchenko V. P., Bugayko D. O. Security and efficiency of the civil aviation industry in the conditions of globalization of the world air transport market.

31) Bezlyudko I. O. Cargo transportation contract by air transport under the civil law of Ukraine: autoref. thesis for obtaining sciences. candidate degree law Sciences: special 12.00.03 "Civil law and civil process; family 321 rights; international private law" / I. O. Bezlyudko. - K., 2005. – 20 p.

32) Wang Bo, M.Grigorak and D.Bugayko.(2018). "Assessment of the national economy through the application of logistics costs." Economic Thought 3 (2018): 68-82.

33) Dmytro, Bugayko., Yuliya, Ierkovska., Fariz, Aliev., & Mariia, Bahrii. (2021). The concept of national integrated risk management of aviation transport of Ukraine. Intellectualization of logistics and Supply Chain Management, (10), 6-18.

UDC 658.11

DOI: <https://doi.org/10.46783/smart-scm/2023-20-3>

JEL Classification: L12, Q10

Received: 14 August 2023

Gurina G.S. Doctor of Economics, Professor, Professor of department of management of foreign economic activity of enterprises of National Aviation University (Ukraine)

ORCID – 0000-0002-1419-4956

Researcher ID – HJB-1226-2022

Scopus author id: – 57209992238

Podrieza S.M. Doctor of Economics, Professor, Professor of department of management of foreign economic activity of enterprises of National Aviation University (Ukraine)

ORCID – 0000-0003-2396-9570

Researcher ID –

Scopus author id: –

But V.A. Candidate of Public Administration National Aviation University (Ukraine)

ORCID – 0000-0003-0447-2905

Researcher ID –

Scopus author id: –

ENVIRONMENTAL TRENDS IN THE DEVELOPMENT OF AVIATION MANAGEMENT

Ganna Gurina, Serhii Podrieza, Volodymyr But. *"Environmental trends in the development of aviation management". The article considers the role of the ecological factor as a global trend in the current conditions of doing business and its impact on the competitiveness of the aviation complex. The peculiarities of the formation of competitive advantages depending on the ecological component in aviation activity are determined. The components and processes that have a direct impact on the development of the export potential of the aviation complex are analyzed. It is revealed that the issue of ecology as a factor of competitiveness of aviation enterprises remains out of the question. The purpose of the article is to determine the impact on the formation of the competitiveness of aviation complex of such a factor as ecologization. At the present stage, processes of ecologization of transport infrastructure are irreversible, and in the conditions of high non-environmental aviation transport they will have an impact on the subjects of the aviation complex market. Innovative and ecological activity in the conditions of the modern economy plays an important role in the timeliness and professionalism of making economic and ecological decisions for the development of the enterprise, the region, and the state. Limited resources, highly qualified personnel, uncertainty in the economy, changes in the market, all this has a huge impact on innovative design, but if we consider the design problem from a methodological point of view, then one of the important and defining problems is the inconsistency of the basic design models of the industry. Therefore, in each specific case, it is necessary to determine the model and adapt it according to the results of the analysis of the industry and the enterprise.*

Keywords: aviation enterprises, ecology, competitive advantage, export potential, world development trends, management..

Ганна Гуріна, Сергій Подреза, Володимир Бут. «Екологічні тенденції розвитку авіаційного менеджменту». В статті розглянуто роль екологічного чинника як світового тренда в сучасних умовах менеджменту та його впливу на конкурентоспроможність авіаційних підприємств. Визначено особливості формування конкурентних переваг в залежності від екологічного складника в діяльності авіації. Проаналізовані складові та процеси, які мають безпосередній вплив на розвиток експортного потенціалу авіаційних підприємств. Виявлено, що поза увагою залишається питання екології як чинника конкурентоспроможності авіаційних підприємств. Метою статті є визначення впливу на формування конкурентоспроможності авіаційних підприємств такого чинника, як екологізація. На сучасному етапі процеси екологізації транспортної інфраструктури є пріоритетними, а в умовах високої неекологічності авіаційного транспорту - матимуть вплив на суб'єктів ринку авіаційного комплексу. Інноваційно-екологічна діяльність в умовах сучасної економіки відіграє важливу роль у своєчасності та професійності прийняття економіко-екологічних рішень розвитку підприємства, регіону, держави. Обмеженість ресурсів, висококваліфікованих кадрів, невизначеність в економіці, зміна ринку, все це має величезний вплив на інноваційне проектування діяльності авіапідприємств, але якщо розглянути проблему проектування з методичної точки зору, то однією з важливих і визначальних проблем є невідповідність базових моделей проектування галузевих особливостей. Тому в кожному конкретному випадку необхідно визначити модель і адаптувати за результатами аналізу галузі та підприємства.

Ключові слова: авіаційні підприємства, екологія, конкурентна перевага, експортний потенціал, тенденції світового розвитку, менеджмент

Introduction. Effective management of the competitiveness of modern aviation complex should include a solution to the issue of environmental logistics. It should be noted that management the competitiveness of the aviation complex is a certain aspect of its management, aimed at the formation, development and implementation of competitive advantages, ensuring the viability of the industry as a subject of economic competition, and should be based on the chosen competitive strategy in view of the harmonization of rules with the European Union.

Separately, it is necessary to highlight the ecological component, the importance and importance of which in the formation of the competitiveness of the aviation complex has increased recently. This is explained by the fact that in the context of the environmental crisis, countries have begun to search for an optimal combination of effective environmental and economic regulators aimed at improving the use of nature and reducing the negative impact on the

environment. An ecological approach is characteristic of all areas of socio-economic development of the modern world. Consequently, an important factor in the development of the aviation complex is the ecological optimization of the logistic flows of the enterprise, passing through the spheres of supply, production, sales, including integration processes with suppliers of raw materials, and consumers of end products.

Modern trends in world development are the widespread introduction of advances in advanced scientific and technological developments, which impetus the structural shift in the economy, stimulating the production of new high-tech high-tech products. The conditions of the global market environment and integration into the world economic space dictate the need to intensify international cooperation of Ukraine, in particular with the European Union, as one of the effective ways to increase the country's competitiveness and its further development on an intensive basis. Exports, as a result of achieving the competitiveness of the goods in

the foreign market, suggests simultaneously about the effective work of the company, both from the point of view of its counterparties, and from the point of view of the external environment.

The multitude of economic and legal changes force enterprises to quickly adapt to new conditions and rules for conducting their own activities. All changes are due to the processes of globalization and integration taking place in the world today. The effectiveness of economic activity depends on the speed of reaction to often radical transformations in the economy, which requires the introduction of corrections not only to the forms and rules of company management, but also the formation of new priorities in the minds of personnel in the direction of optimizing interaction in the "nature-human" system. Therefore, the development of environmental management as a new worldview economic and legal system is relevant for Ukrainian enterprises seeking to expand their capabilities. From the point of view of long-term prospects, Ukraine is certainly of interest to foreign investors. This factor is determined both by the general scope of the scope of foreign investment and by positive developments in market transformations, but it is still hindered by the factor of political instability. As evidenced by the practice of modern management, the mentioned problems to one degree or another take place at all levels of enterprise management - intra-production, branch, regional, state, international. Therefore, management decisions and solving issues require joint actions of each link of business activity, the formation of an appropriate development strategy and an effective management system on the part of state bodies using modern approaches to the transformation of the economy. Components that establish a certain level of competitiveness consist of such components as production and production potential, resources, marketing, management, finance, research and innovation activities. Consequently, the development of Ukrainian

industry in recent years has been chaotic, without defining and observing state priorities, in the absence of a well-thought-out state industrial policy. These years can be called a period of trial and error, when the transition to market relations was carried out through accelerated liberalization of both internal and external economic relations. Neglecting the peculiarities of the state of the national market and the mechanical use of various inconsistent measures in macroeconomic policy led to collapse inflation, a sharp decline in production and loss of control over economic activity in the country.

Presentation of the main results.

Factors of the competitiveness of the aviation enterprise, such as the legal environment, natural resource potential of the country, the state of development of commodity markets, affect individual components of competitiveness and can influence the overall results. Separately, it is necessary to highlight the environmental component, the importance and importance of which in the formation of the competitiveness of the aviation complex has increased recently. This is explained by the fact that in the conditions of the environmental crisis, countries began to search for an optimal combination of effective ecological and economic regulators, aimed at improving the use of nature and reducing the negative impact on the environment. The ecological approach is characteristic of all directions of socio-economic development of the modern world. Therefore, an important factor in the development of the aviation complex is the ecological optimization of the logistics flows of the enterprise passing through the spheres of supply, production, and sales, including integration processes with suppliers of raw materials and consumers of final products [5]. Ukraine is one of the few countries that has complete technology for the creation of aviation equipment, and occupies a leading place in the world market, which has been proven more than once in both civil and military aviation. In terms of the level of

development of aircraft construction, Ukraine is one of the most developed countries. Domestic aviation equipment has certain competitive advantages compared to foreign counterparts. The restoration of aviation equipment for the needs of the army testifies to the significant potential of the aircraft repair industry as a component of the aviation complex of Ukraine. Aircraft construction is one of the most profitable, involved in international economic relations, and, at the same time, the most capital-intensive branches of engineering, and we can also talk about the budget-forming function of the aviation industry in general. The implementation of the European integration vector of the foreign economic policy of Ukraine in particular requires new approaches and a comprehensive strategic program of qualitative improvement of both the commodity and geographical structure of exports, as well as state measures to support and stimulate it. Therefore, determining the main directions and specific prospective measures in the field of promoting the effective realization of Ukraine's export potential remains an urgent task. The development of export potential is a priority component of the country's foreign economic development, its basis is the formation of competitive advantages of the branches of the national economy. Ukraine has significant natural advantages: a sufficient number of labor force, advantageous geographical position, rich natural resources, but these are only possible potential advantages that still need to be developed and implemented. In the conditions of inefficient use of natural resources and competitive advantages that Ukraine possesses, it becomes obvious the need to study the problems of implementing the domestic policy of export promotion, development and realization of export potential [3]. It should also be noted that certain shifts and changes in legislation and the implementation of industry development programs play not the least role in building the potential of aviation companies. The most effective use and combination of science and

production is a goal that will help establish cooperation in the industry, enter international markets with competitive products. Under the potential should be understood also established cooperation with partners from other countries. To realize this strategically important goal, humanity needs to implement a whole set of global measures, which can be called "environmental policy". Environmental policy provides for the optimal structure of production, the pace of development, which ensures the reproduction of the environment and guarantees the economic prosperity of society. In order to develop a truly high-quality strategy at the national level, it is necessary to include the main postulates of the concept of sustainable development, the priority of which is the optimization of human life in conditions of environmental safety and conflict-free relations within society.

The introduction of ecologically safe, resource- and energy-saving technologies, the development of renewable energy sources, non-material nature management are happening unsystematically and too slowly. In the conditions of rising gas prices, it is necessary to take significant systemic measures aimed at increasing energy efficiency, decarbonization of the energy sector, and development of renewable energy sources.

In the field of security and defense, the issue of access to the facilities of the military-defense industrial complex must be resolved in order to carry out appropriate supervision and control over compliance with environmental legislation at these facilities, prevention of pollution of surface and ground water by oil products, destruction of natural landscapes, etc. in order to minimize consequences of activities at these facilities, which will contribute to security and defense reforms and the implementation of NATO standards.

The introduction of international standards of environmental management systems at enterprises and companies will contribute to the development of the

environmental management system and the implementation of international environmental protection initiatives in Ukraine.

Implementation of the ecosystem approach in industry policy and improvement of the system of integrated environmental management, integration of environmental policy into other policies, mandatory consideration of the environmental component during the development and approval of state planning documents and in the process of decision-making on the implementation of economic activities that may have a significant impact on the environment, in particular the ecological modernization of industrial enterprises by reducing the environmental tax rate or in the form of a fixed annual amount of compensation (tax refund), in combination with improving the environmental characteristics of products, is the way to a modern systemic environmental policy implemented in the member states of the European Union.

Implementation of the environmental risk management system in all spheres of the national economy will contribute to the prevention of man-made and environmental disasters.

The results. At the current stage of the "reboot" and development of the aviation industry, there is a question of abandoning traditional approaches both in the production sphere and in supporting modern trends of environmentalization of logistics processes. All these factors should not harm the further search for partners in other countries, because entering new markets has a certain set of uncertainties and risks. The study of modern ways of forming the strategy of the export potential of the aviation complex, which has a strong platform for development, singles out the main reasons for the slowdown in the pace of development - the reduction of technological developments and intellectual resources, as well as the lack of active international cooperation with strategic partner countries. As a result, today

the Ukrainian aviation market is not yet fully ready to work in the conditions of "open skies", and the regulations adapted to European standards do not take into account the state of the aviation services market in Ukraine. All these are integral components of the industry's export potential, and their consideration should be comprehensive and promote development in all areas of cooperation. The age structure of the personnel potential of the industry is deteriorating, which threatens its prospects. In addition, it is necessary to take into account such a large market for aviation enterprises as the EU countries, where there are very strict environmental requirements. Currently, every EU institution (European Commission, European Parliament, European Council, European Environment Agency) deals with environmental issues to one degree or another. Numerous EU directives on environmental protection (currently more than 90 of them) relate to the Union's general policy in the field of water and air quality control, waste disposal, as well as reduction of industrial emissions, biotechnological safety, noise reduction [3]. The member states of the EU accept these directives for mandatory implementation, and therefore, all environmental requirements and norms must be taken into account by aviation companies entering the European sales markets. At the session of the Economic European Commission (within the framework of the strategy for changes in transport in the EU, the reduction of dependence on oil and the fight against climate change by accelerating the transition of transport to alternative types of energy with a low level of emissions, such as advanced types of biofuels [2] are stated among the goals. Directive of the Commission 63/EC supplements Directive 98/70/EC of the European Parliament and of the Council on the quality of petrol and diesel fuel in order to harmonize with technical progress and makes additions concerning the requirements for bioethanol to bring them into line with the Directive. In the long term, companies must reduce emissions Directive No. 101/EU

provides a system of fines for airlines that refuse to comply with its provisions [2].

Conclusions. The current trends in world development are the wide implementation of the achievements of advanced scientific and technological developments, which gives impetus to structural shifts in the economy, stimulating the production of new science-intensive high-tech products. The conditions of the global market environment and integration into the world economic space dictate the need to intensify Ukraine's international cooperation, in particular with the European Union, as one of the effective ways of increasing the country's competitiveness and its further development on an intensive basis. The realization of export, as a result of achieving the competitiveness of the product on the foreign

market, simultaneously testifies to the efficient operation of the enterprise both from the point of view of its counterparties and from the point of view of the external environment. This is the duality of export from the standpoint of its participation in ensuring the effective operation of the enterprise: it simultaneously acts as a factor and as a result of the effective work and management of the enterprise. Export, as a result of the company's effective foreign economic activity, becomes possible only if the company's products are competitive on world markets, provided that all modern trends are taken into account. In Ukraine, it is necessary to implement the tools of reaching the modern level of the production and technological base and implement the mechanisms of encouraging innovative activity.

References

1. J.D. Harrington, K. Barnstorff, F. Dambowsky, NASA study confirms biofuels reduce jet engine pollution / URL: <http://www.nasa.gov/aero>. (in English)
2. The project "Strategies for the development of high-tech industries until 2025". Department of Innovation Development and Intellectual Property. URL: <http://www.me.gov.ua/Documents/Detail?lang=uk-UA&id=c3081991-45fb-47dfabc659822e854a99&title=ProektstrategiiRozvitkuVisokotekhnologichnikhGaluzeiDo2025-Roku>
3. Honcharuk S. R. Ecological trends in the development of production management / Sofia Romanivna Honcharuk; of science manager Oksana Ivanivna Prodius // Modern information. technologies and telecommunication networks: theses add. of the 58th Science. conf. young researchers of master's students of "Odesa Polytechnic". - Odesa, 2023. - P. 102-104.
4. International Energy Agency. Summary 2022. URL: <https://www.iea.org>. (in English)
5. O. Sytnyk. Greening of transport logistics as a factor of aviation enterprise competitiveness, Economic Bulletin of the Zaporizhzhya State Engineering Academy, Issue 1 (13) / 2018.
6. Gurina G.S., Podrieza S.M. (2023) "Globalization challenges of strategic management of the export potential of aviation complex enterprises". – Intellectualization of logistics and Supply Chain Management. [Online], vol.19, pp.19-23, available at: <https://smart-scm.org/en/journal-19-2023/globalization-challenges-of-strategic-management-of-the-export-potential-of-aviation-complex-enterprises/>. DOI: <https://doi.org/10.46783/smart-scm/2023-19-23>

7. Kyrylenko O.M., Novak V.O., Podrieza M.S. (2023) "The place of organizational culture in the management system of aviation enterprises". – Intellectualization of logistics and Supply Chain Management. [Online], vol.19, pp.45-50, available at: <https://smart-scm.org/en/journal-19-2023/the-place-of-organizational-culture-in-the-management-system-of-aviation-enterprises/>. DOI: <https://doi.org/10.46783/smart-scm/2023-19-4>

UDC 656.7.086

DOI: <https://doi.org/10.46783/smart-scm/2023-20-4>

JEL Classification: L82, M15

Received: 15 August 2023

Kyrylenko O.M. Doctor of Economics, Professor, Head of the Department of Foreign Economic Activity of Enterprises of National Aviation University (Ukraine)

ORCID – 0000-0003-2406-7050

Researcher ID –

Scopus author id: –

Novak V.O. PhD (Economics), Professor, Professor of the Department of Foreign Economic Activity Management of National Aviation University (Ukraine)

ORCID – 0000-0001-6899-2016

Researcher ID –

Scopus author id: –

Podrieza M.S. Graduate student of the Department of Management foreign economic activity of enterprises of National Aviation University (Ukraine)

ORCID –

Researcher ID –

Scopus author id: –

KEY ASPECTS OF CORPORATE RESPONSIBILITY OF AVIATION ENTERPRISES

Oksana Kyrylenko, Valentyna Novak, Mykhailo Podrieza. "Key aspects of corporate responsibility of aviation enterprises". *This scientific article is devoted to the study of corporate responsibility of aviation enterprises and their impact on the general social space. The growing attention to environmental issues puts the reputation of aviation companies at risk and forces them to improve their corporate responsibility. This article proposes to analyze various aspects of corporate responsibility of aviation enterprises and considers prospects for their further development. In conditions of increased awareness of investors and financial institutions, the latter prefer more sustainable business from the point of view of financial, social and economic indicators. In this regard, the importance of intangible factors of economic growth of the enterprise, such as the development of labor potential, promotion of employment, compliance with social protection standards and human rights, implementation of environmental aspects of activity, is increasing. In such conditions, the analysis of the company's social policy, which is implemented by the mechanism of corporate social responsibility, becomes relevant. Under modern conditions of increasing global instability, enterprises are interested in increasing the level of predictability of the process of social and economic development, the institutional environment, the achievement of political and economic stability from local to global levels, the sustainable development of social and labor relations, the absence of social conflicts and economic crises, which is necessary for effective activity. Therefore, the formation of a strategy of corporate social responsibility in the*

practice of domestic enterprises at the level of modern business entities is of great importance, which will ensure their sustainable development.

Keywords: corporate social responsibility, aviation enterprises, business sustainability, airline reputation, leadership and innovation in business.

Оксана Кириленко, Валентина Новак, Михайло Подреза. *«Ключові аспекти корпоративної відповідальності авіаційних підприємств».* Ця наукова стаття присвячена дослідженню корпоративної відповідальності авіаційних підприємств і їхнього впливу на загальний соціальний простір. Зростаюча увага до екологічних проблем ставить під загрозу репутацію авіаційних компаній та змушує їх вдосконалювати свою корпоративну відповідальність. Ця стаття пропонує аналізувати різні аспекти корпоративної відповідальності авіаційних підприємств та розглядає перспективи для їхнього подальшого розвитку. В умовах підвищення рівня інформованості інвесторів та фінансових інститутів, останні надають перевагу більш стійкому бізнесу з точки зору фінансових, соціальних та економічних показників. У зв'язку з цим зростає значущість нематеріальних чинників економічного зростання підприємства, таких як розвиток трудового потенціалу, сприяння зайнятості, дотримання стандартів соціального захисту та прав людини, реалізація екологічних аспектів діяльності. У таких умовах актуальності набуває аналіз соціальної політики підприємства, що реалізується механізмом корпоративної соціальної відповідальності. За сучасних умов підвищення глобальної нестабільності підприємства зацікавлені у збільшенні рівня передбачуваності процесу розвитку суспільства та економіки, інституційного середовища, досягнення політичної та економічної стабільності від локального до глобального рівнів, стійкого розвитку соціально-трудова відносин, відсутності соціальних конфліктів та економічних криз, що необхідно для ефективної діяльності. Тому великого значення набуває формування на рівні сучасних суб'єктів господарювання стратегії корпоративної соціальної відповідальності у практиці вітчизняних підприємств, що забезпечуватиме їх сталий розвиток.

Ключові слова: корпоративна соціальна відповідальність, авіаційні підприємства, стійкість бізнесу, репутація авіапідприємств, лідерство та інновації в бізнесі

Introduction. In today's world, aviation plays an important role in the global economy and provides efficient transportation of passengers and cargo. However, along with their advantages, aviation enterprises also face challenges related to the preservation of the environment. That is why there is a need to consider the corporate responsibility of aviation companies. For the development of civilized social relations, it is important to form a parity of interests of the main participants in economic relations - state and local authorities, corporate structures, public organizations, and citizens. The mechanism of social responsibility acts as an important tool for building partnerships between these subjects when solving urgent issues.

Presentation of the main results. The reasons for the growing interest in the

corporate responsibility of aviation enterprises are revealed by the following theses. Growing awareness of climate change and the challenges of environmental pollution is putting the reputation of airline companies at risk. Consumers, investors and other stakeholders are becoming more and more aware and demanding regarding the environmental performance of enterprises. Therefore, aviation companies are forced to pay attention to their corporate responsibility. And top management should pay attention to the following aspects:

– modern international and national paradigms of forming norms of business ethics and leadership in society, cross-cultural and international aspects of business ethics and leadership;

– honesty, transparency, standards, trust, reputation, fairness and ethics in business, trade, management, marketing, public communications, finance, public administration and international economic relations;

– leadership and innovation in business, trade, management, marketing, public communications, finance, public administration and international economic relations in different countries [3];

– corporate social responsibility and social entrepreneurship;

– introduction of ethical standards and modern democratic practices in socio-economic processes to ensure social justice, gender and social equality, protection of corporate and personal rights and freedoms throughout the world;

– behavioral economics, coordination of stakeholders' interests, public-private and intersectoral business partnership;

– effective and ethical business communications and public relations, social and ethical marketing;

– professional ethics and standards of financial institutions and regulators; trust and reputation in financial relations; behavioral finance; non-financial corporate reporting; transparency of finances, accounting and taxation; international experience and standards for preventing unethical, unscrupulous and non-transparent financial relations;

– human capital management, management, psychology of leadership, organizational culture, motivation, professional ethics;

– client-oriented business management, quality of services, protection of consumer interests in different countries.

Environmental responsibility. The aviation industry has a significant impact on climate change and the environment through greenhouse gas emissions, noise pollution and the use of natural resources. The corporate responsibility of aviation enterprises includes efforts to minimize the

impact on the environment through the introduction of new technologies, the use of biofuels, rational consumption of resources and other measures.[1]

Social responsibility. Aviation enterprises must also take into account the social aspects of their activities. This includes ensuring the safety and comfort of passengers, creating jobs, ensuring equal opportunities and promoting the development of local communities.

Economic responsibility. Corporate responsibility of aviation enterprises also covers economic sustainability. Enterprises must act in accordance with economic principles, ensure financial stability, effective management of resources and promote economic development.

The prospects for the development of corporate responsibility of aviation enterprises are in the following positions. Innovative technologies. One of the key directions in the development of corporate responsibility of aviation enterprises is the introduction of new technologies aimed at reducing the negative impact on the environment. For example, the development and use of environmentally friendly fuels, smart energy efficiency management systems and efficient use of resources can help aviation companies reduce their environmental footprints.

Cooperation with interested parties. Aviation enterprises have to interact more and more with stakeholders, such as government bodies, public organizations, scientific institutions and consumers [4]. This will facilitate the exchange of information, joint projects and implementation of best practices in the field of corporate responsibility. Cooperation may include joint initiatives to reduce greenhouse gas emissions, use renewable energy sources, and improve working conditions. Social responsibility, regardless of the level and scale of research, is defined at the global, national, regional and industrial levels. The global level reveals the content of social responsibility by identifying the problems and conditions of

existence of humanity and finding ways to solve them through the spread of social integration aimed at ensuring sustainable development regardless of place of residence and racial affiliation. The question of the expediency of introducing the principles of social responsibility into the business practice of domestic enterprises should not cause doubt. However, at present, a purely declarative approach to this issue prevails in the Ukrainian business environment. Although most companies declare themselves to be socially responsible, clear and systematic work in this direction is carried out by units. Social responsibility is one of those factors that affects the overall economic efficiency of enterprises. However, this is achieved only under the condition of constant activity in the field of corporate social responsibility. Awareness of this fact will undoubtedly lead to increased attention of business units to issues that reflect work towards increasing the overall level of response to the demands of stakeholders (interested persons). Social responsibility of business in Ukraine is developing spontaneously. There are no clearly written state or balanced corporate decisions for its implementation, in most cases those directions of business socialization that can ensure maximum return are not defined [6]. Social responsibility arises as an objective need not only of society, but also of enterprises themselves, which strive to find their place in a competitive environment, their consumers, to interest national and foreign partners, highly qualified specialists in cooperation.

Implementation of standards and certification. Standards and certification systems aimed at defining and measuring the corporate responsibility of aviation enterprises are an important tool for promoting the development of this industry. The implementation of such standards, for example, the International Reporting Standard GRI (Global Reporting Initiative) or ISO 14001 standards (environmental management systems), will allow aviation

companies to more systematically define their goals and results in the field of corporate responsibility.

Ethical practices and transparency. Ethical practices, such as setting high safety and quality standards, displaying information about environmental impact and social initiatives in reports and communications, play an important role in building the trust of consumers and other stakeholders. Transparency and openness about one's actions and efforts is an important step in ensuring corporate responsibility.

Corporate responsibility of aviation enterprises is of great importance in the context of sustainable development and environmental protection. Growing attention to environmental issues, changing consumer demands and a strengthening regulatory environment are challenging businesses to step up their corporate responsibility efforts. Implementation of innovative technologies, cooperation with interested parties, use of standards and certification, as well as ethical practices and transparency are key directions for further development of this field.

Aviation corporate responsibility research should continue to identify best practices, develop new strategies, and raise awareness of business ethics.

The role of government bodies and regulation. Government bodies have an important role in regulating the corporate responsibility of aviation enterprises. By establishing strict regulatory requirements, creating an environmentally oriented regulatory framework and providing financial incentives, governments can promote the growth of corporate responsibility in the aviation industry. It is also important that governments promote research and development aimed at improving the environmental performance of aviation technology.

Challenges and obstacles. Despite the growing interest in aviation corporate responsibility, there are some challenges and obstacles that need to be considered. These include the high costs of implementing new

technologies and green initiatives, technological limitations, the instability of market conditions, and the lack of uniform standards and methodologies for measuring environmental impact. To overcome these obstacles, it is necessary to promote innovation, investment in research and development of technology, as well as to promote cooperation and exchange of best practices between aviation companies.

Impact on business and public perception. Improving the corporate responsibility of aviation companies can have a significant impact on their business performance and public perception. Companies that pay attention to environmental and social responsibility can have an advantage over competitors, gain the support of consumers and investors, and preserve their reputation in the event of environmental incidents or scandalous situations. However, it must be noted that corporate responsibility must be honest and convincing, not just a marketing tool. [2]

Corporate responsibility of aviation enterprises is an important factor for ensuring the sustainable development of the industry and preservation of the environment. The growing attention to environmental problems and the demands of stakeholders put companies in front of the need to change and actively work to reduce their negative impact. Innovative technologies, collaboration with stakeholders, the use of standards and certifications, as well as ethical practices and transparency are key factors in achieving corporate responsibility goals. It is important that airlines continue to work hard to improve their practices and ensure that they strike the right balance between the social, environmental and economic aspects of their operations.

After the end of the war, Ukraine must face the challenge of restoring its aviation potential, which could have been damaged during the armed conflict. Ukraine's aviation industry has always been important to the country, and after the war it has great

potential for development and is a key element of economic revival.

One of the main tasks is the restructuring of aviation enterprises and their return to full activity. This may require investment and governance reform. In addition, the preservation and attraction of highly qualified specialists in the industry is an important factor for the successful revival of aviation.

Aircraft development and modernization of existing aircraft can also provide a positive market impact. Ukraine has rich experience in aircraft construction and development of aviation equipment, and focusing efforts in this field can help to become competitive in the international market.[4]

In addition, an important step is to ensure the safety of the aviation space. The end of the war may lead to the need to review and update safety norms and standards, which will help avoid incidents and ensure passenger comfort and trust in Ukrainian aviation.

To a large extent, the development of the aviation sector will be facilitated by the stimulation of tourist traffic to Ukraine. Creating new routes and increasing the frequency of flights to popular tourist destinations will help attract foreign tourists and support domestic tourism.

In addition to internal efforts, it is also important to establish partnerships with international airlines and resume international flights. This will help integrate the Ukrainian aviation market into the global system and increase its competitiveness.

Overall, reviving Ukraine's aviation potential after the end of the war will require a concerted effort by government, business and other stakeholders. This is possible thanks to responsible planning, investment in technology and human resource development. I am sure that with appropriate efforts, Ukraine will be able to return to the international arena as a strong player in the field of aviation.

One of the key factors in restoring Ukraine's aviation potential is the attraction of foreign investments. Foreign investment can

be used to modernize existing aviation infrastructure, purchase new equipment and aircraft, and improve technological processes in the industry. The government should create a favorable investment climate and ensure transparency in regulation, which will help attract foreign companies and support their participation in the development of Ukrainian aviation.

Development of regional aviation. In addition to stimulating international tourism, the development of regional aviation also has great potential for supporting the socio-economic development of Ukraine's regions. The launch of regular flights between cities and regions will help reduce the remoteness of territories, improve the availability of medical and educational services, attract investments and ensure the growth of regional economies. The government can promote the development of regional aviation by providing financial support, incentivizing investors and providing advantages for airlines operating flights to less developed regions.

Training and development of personnel. One of the important aspects of the successful development of the aviation industry is the provision of adequate training and development of personnel. Continuous training of pilots, aviation technicians, air traffic controllers and other personnel will help ensure the safety of air travel and the efficient functioning of the aviation sector. In addition, it is necessary to stimulate young people to choose professions in aviation, in particular, by creating favorable conditions for training and providing prospects for career development.

Environmental sustainability. The increase in aviation potential should be accompanied by paying attention to the environmental aspect. Reducing emissions of harmful substances into the air, efficient use of fuel and the development of biofuels can contribute to reducing the negative impact of aviation on the environment. The government can support scientific research in the field of environmental sustainability of

aviation, as well as provide benefits and support to airlines that actively implement environmentally friendly technologies.

International cooperation. Ensuring the effective development of the aviation potential also requires international cooperation. The Government of Ukraine should actively interact with international aviation organizations and other states in order to jointly solve problems, create a favorable international legal field for air transportation, and attract external expertise and support.[8]

Conclusions. After the end of the war, Ukraine will face great challenges in restoring its aviation potential. Investments in the modernization and development of infrastructure, stimulation of regional aviation, training and development of personnel, environmental sustainability and international cooperation are key factors for the successful development of the aviation sector. With appropriate efforts by government, business and other stakeholders, Ukraine can revive its aviation industry and return to the world stage as a strong aviation player. The development of corporate social responsibility at Ukrainian enterprises is possible only if there are interests of society, the state and other stakeholders. This becomes an important moment for the promotion of this concept not only on a global scale, but also in Ukraine as a whole. This can be used to prove the relevance of implementing the concept of corporate social responsibility in the system of strategic development of enterprises. The creation of corporate social responsible government and business is directly related to the implementation of the concept of sustainable development. Corporate social responsibility of business is a subsystem of corporate social responsibility of the general system of social interaction, as well as a means of guaranteeing and protecting social relations, which are established by certain subjects and guaranteed by certain means in order to respect human rights, is a manifestation of the culture of society, the

realization of its public interests and regulated by social norms, controlled by sanctions. This phenomenon represents the elements of the superstructure of society, which depend on the level of development of economic, political and social relations; develops and transforms together with social relations; is a voluntary initiative of organizations (companies) to comply with ethical norms in the field of social interaction and to assume responsibility for the impact on the environment, partners, consumers, employees and communities. World practice shows that the concept of socially responsible business is successfully developing and is in the process of constant changes and improvements. The study made it possible to conclude that the mechanisms of the system of corporate social responsibility have not yet received appropriate distribution at domestic enterprises. Statistics show that only every third company owner in our country knows

about the term and concept of corporate social responsibility, and standards and rules for Ukrainian business have not yet been created. The principles of corporate social responsibility reveal the main provisions that show the enterprise in its entirety, its essence and work activity as a whole and whether it is related to the implementation of corporate social responsibility. If you do not observe at least one of the principles of corporate social responsibility, which are created at the expense of public expectations, then its essence is falsified. The conducted research showed that the Ukrainian economic system has not yet passed all the necessary stages of development and formation, which abroad have already shown the importance of corporate social responsibility and the results of its work as a whole. There are still a large number of problems within our country that hinder implementation processes in the field of corporate social responsibility.

References

1. Brecharia S. G. Stages of the formation of corporate and social responsibility of Ukrainian business [Electronic resource] - 2018. - Resource access mode: https://ipiend.gov.ua/wp-content/uploads/2018/07/brecharia_etapy.pdf
2. Bocharova N. A. Environmental aspect of corporate social responsibility of enterprises - 2020. - No. 35. – P. 34–43.
3. Information on the UN Global Compact [Electronic resource] - Access to the resource <https://globalcompact.org.ua/pro-nas/gd-oon-v-ukraini/>
4. Classification of forms and types of corporate social responsibility [Electronic resource] - Resource access mode https://pidru4niki.com/91751/sotsiologiya/klasifikatsiya_form_vidiv_sotsialnoyi_vidpovidalnosti
5. Mazurenko V. P. Modern concept of corporate social responsibility in international business [Electronic resource] – Access to the resource: <http://www.economy.nayka.com.ua/?op=1&z=1199>.
6. Mints O. Yu. Implementation of international standards in the field of corporate social responsibility at industrial enterprises of Ukraine [Electronic resource] - 2019. - Access to the resource: http://www.economy.nayka.com.ua/pdf/9_2019/7.pdf
7. Hurina G.S. Implementation of the concept of public-private partnership as a key to the development and competitiveness of the export potential of the country's aviation complex. IV International Conference "Science and Modernity: Challenges of Globalization". Kyiv. Center for scientific publications. pp. 26-29. 2018.

8. Gurina G.S., Podrieza S.M. (2023) "Globalization challenges of strategic management of the export potential of aviation complex enterprises". – Intellectualization of logistics and Supply Chain Management. [Online], vol.19, pp.19-23, available at: <https://smart-scm.org/en/journal-19-2023/globalization-challenges-of-strategic-management-of-the-export-potential-of-aviation-complex-enterprises/>. DOI: <https://doi.org/10.46783/smart-scm/2023-19-23>

9. Kyrylenko O.M., Novak V.O., Podrieza M.S. (2023) "The place of organizational culture in the management system of aviation enterprises". – Intellectualization of logistics and Supply Chain Management. [Online], vol.19, pp.45-50, available at: <https://smart-scm.org/en/journal-19-2023/the-place-of-organizational-culture-in-the-management-system-of-aviation-enterprises/>. DOI: <https://doi.org/10.46783/smart-scm/2023-19-4>

UDC 656.7

DOI: <https://doi.org/10.46783/smart-scm/2023-20-5>

JEL Classification: C38, H56, L93, O33

Received: 17 August 2023

Grytsenko S.I. Doctor of Economics, Professor, Professor of Logistics Department of National Aviation University (Ukraine)

ORCID – 0000-0002-3322-3986

Researcher ID – N-4298-2018

Scopus author id: – 57783729900

Ninich V.Z master student of Logistics Department of National Aviation University (Ukraine)

ORCID –

Researcher ID –

Scopus author id: –

CLUSTERING OF LOGISTICS SUPPLY CHAINS IN THE PROCESS OF UKRAINE'S EUROINTEGRATION

Sergiy Grytsenko, Veronika Ninich. *"Clustering of logistics supply chains in the process of Ukraine's eurointegration". This article delves into the concept of clusters within the nation's economy, the role of logistics management in effective cluster operation, and avenues for its enhancement.*

The research focuses on the socio-economic processes that facilitate the clustering of logistics supply chains for the company "PAPIR SERVICE SK" - one of Ukraine's largest companies involved in the procurement and distribution of paper and cardboard in rolls.

The subject of investigation encompasses a comprehensive range of scientific, methodological, and practical aspects related to the establishment of a mechanism for forming cluster entities within the context of Ukraine's integration with Europe.

Particular attention is devoted to defining the concept of an economic cluster, exploring the role of logistics management for cluster participants, examining prospects for logistics companies to become integral parts of a cluster, analyzing contemporary trends in the development of logistics management for supply chains. An arsenal of simulation modeling tools is proposed for designing supply chains within the market of printing services in Ukraine.

The feasibility of proposing necessary alterations to the functioning of logistical systems and enterprises within an economic cluster is demonstrated.

Implementing the results obtained expedites the processes of creating cluster entities within Ukraine's transportation and logistics sector, facilitating the formulation of strategies for their activities based on the application of scientific tools.

Keywords: economic cluster, enterprise logistics activity, logistics management, supply chain, logistics innovations, cluster organizational structure.

Сергій Гриценко, Вероніка Нініч. «Кластеризація логістичних ланцюгів постачання в процесі євроінтеграції України». У статті розглянуто кластери в економіці держави, місце логістичного управління в ефективному функціонуванні кластеру та шляхи його покращення.

Об'єктом дослідження є соціально-економічні процеси забезпечення кластеризації логістичних ланцюгів постачання компанії ТОВ «ПАПІР СЕРВІС СК» - однієї з найбільших в Україні компаній із закупівлі та збуту паперу та картону у рулонах.

Предметом дослідження є сукупність науково-методичних та практичних аспектів формування механізму створення кластерних утворень в процесі євроінтеграції України.

Особлива увага надається визначенню поняття економічного кластеру, дослідженню ролі логістичного управління для учасників кластеру, розгляду перспектив для логістичних компаній, що можуть стати частиною кластеру, аналізу сучасних тенденцій в розвитку логістичного управління ланцюгів постачання. Запропоновано інструментарій імітаційного моделювання для проектування ланцюгів постачання на ринку поліграфічних послуг України.

Показана доцільність пропозиції щодо необхідних змін в функціонуванні логістичних систем та підприємств економічного кластеру.

Впровадження одержаних результатів дозволяє прискорити процеси створення кластерних утворень у транспортно-логістичних перевезеннях України та формування стратегії їх діяльності на основі використання наукового інструментарію

Ключові слова: економічний кластер, логістична діяльність підприємства, управління логістичною діяльністю, ланцюг постачання, інновації в логістиці, організаційна структура кластеру

Introduction. The development of the global economy throughout the 21st century has been characterized by the expansion and deepening of global and regional connections, leading to the formation of a global market for capital, goods, and labor. Additionally, the creation of a unified information space has emerged as a direction within the globalization of international economic and social relations. One of the pathways to stimulate industrial production and regional development involves the establishment of cluster formations in locally integrated technological sectors, particularly in the production of office materials. This approach aims to enhance competition in the domestic market and activate foreign economic activities among participating cluster enterprises.

Research Objective and Tasks: The theory of cluster formations has influenced the principles of forming production-territorial complexes within Ukraine's economy. However, the scientific and practical framework for addressing this issue is still in the development and testing stage.

The aim of this work is to refine the theoretical and methodological foundations for creating territorial transport-logistics clusters and develop scientific-practical recommendations for forming a cluster of logistics supply chains.

Presentation of the main results. In the context of societal globalization, significant changes are taking place in the organization of production at both the national and international levels. Advanced territorial-industry and integration associations known as clusters are forming. Clusters represent a combination of competition and cooperation, where collaborations in certain areas aid competitive success in others. The article [1] is dedicated to ensuring a country's competitiveness within the framework of innovation and industrial modernization strategies based on cooperative alliances. Successful cluster and cooperation association functioning depend on their activities in research and development, among other factors.

The development of Ukraine's regions, taking into account competitive advantages

through rational resource utilization within transport-logistics clusters, is explored in sections of the monograph [2]. The monograph [3] delves into the theoretical foundations of cluster formation and development at the global and regional levels by synthesizing theoretical advances in identifying trends and the regional development of the global economy on innovative grounds. It also elucidates the essence of cluster formations, modern concepts of their development, and theoretical approaches to formulating strategies for the foreign economic activities of cluster formations. The technology of forming and operating transport-logistics clusters is detailed in a section of the monograph [4].

For Ukraine, territorial clustering stands as an ideal approach to bolstering its economy and sustaining a competitive stance within the global economic framework. Cluster schemes offer the ability to pinpoint sectors in which the country can exhibit competitiveness.

The creation of a territorial transport-logistics cluster is the outcome of the collective efforts of enterprises whose products require delivery across various segments of the global market. The geographical distribution of these enterprises defines an area of attraction towards an inter-industry and inter-regional center, such as a zonal airport within the territorial business cluster. This center would possess all the facilities necessary for executing aviation export-import services at a contemporary international level, with minimal expenditure.

Among the proposals, the establishment of a transport-logistics system for printing enterprises within a territorial cluster can be considered. This system would further localize within a transport-logistics cluster encompassed by a geographically concentrated business cluster. Given the prioritized parameter of swift international passenger and cargo delivery, each territorial business cluster should be incentivized to create and foster its own carriers – pivotal

elements of a territorial transport-logistics cluster geared towards expanding export activities.

The establishment and growth of a market-based economic system in Ukraine necessitate fundamentally new approaches to organizing entrepreneurial activities. In this regard, strategic development management based on a cluster approach holds particular significance. The success, outcomes, and long-term viability of any enterprise are contingent upon the consistent logical decisions made by its leaders. Each of these decisions ultimately entails economic repercussions based on the enterprise's activities.

In today's landscape, enterprise leaders are compelled to make economic decisions within conditions of uncertainty and heightened risk. This stems from a lack of comprehensive knowledge regarding consumer behavior, competitive stances, appropriate partnership selection, and dependable sources of commercial and other information. Moreover, most domestic enterprise managers focus their efforts on addressing immediate tasks, operating at an operational level, and consequently, planning on a short-term horizon. Issues pertaining to prospective, primarily Euro-centric, development often find themselves on the periphery of managerial activities. However, the clustering of logistics supply chains within the scope of Ukraine's evolving integration process is an indispensable necessity, destined to become an integral facet. The external environment transforms so rapidly that relying solely on operational measures from higher management for enterprise adaptation to new realities is insufficient.

In many cases, the inefficiency of supply chain functioning, characterized by failures, delayed order execution, substantial time and cost losses, can be attributed to inadequate supply chain design during the preparation phase. The primary channel through which products are obtained from suppliers by "PAPIR SERVICE SC" LLC is through deliveries from Germany. "PAPIR SERVICE SC" LLC is one

of the largest companies in Ukraine engaged in the procurement and distribution of paper and cardboard in rolls. It was founded on October 24, 2016, with its headquarters located in Kyiv. The primary type of economic activity according to the Classification of Economic Activities (CED) is 17.12 - Manufacture of paper and paperboard [5].

Interest in the ecological aspects of cellulose, paper, and cardboard production varies among different users. Producers of cellulose, paper, and cardboard often receive inquiries from clients regarding product quality and its impact on the environment.

During the selection of raw materials, it is important to consider that different products possess varying ecological characteristics based on the employed production processes. Local environmental conditions at the production site also represent another crucial aspect that needs to be taken into account.

Currently, the company serves over 20 regular clients throughout Ukraine, engaged in the production of corrugated packaging from corrugated cardboard and paper, as well as Ukrainian printing houses. Among them are companies like "ECOPRES VV" LLC, "TORGHTEKHNIKA KPK" LLC, "EL'GRAF" LLC, "ZARORISHPOLIMERTARA" LLC, "GRINKAR COMPANY" LLC, "ELIA PROMO" LLC, "ZHYTOMYR CARDBOARD PLANT" LLC, "DBK-AGRO" LLC, "MEGA-POLIGRAF" LLC, "POLIPRINT" LLC, and others.

Paper and cardboard for these clients are supplied directly from European plants or are transhipped at the company's own warehouse. Among the suppliers of raw materials are LEIPA Georg Leinfelder GmbH (Schwedt, Germany), Julius Schulte Söhne GmbH & Co KG (Trebzen, Germany) [6], UPM Communication Papers (Augsburg, Germany) [7], COLOMBIER INTERNATIONAL BV (Meindrecht, Netherlands) [8], Baltijos Brasta (Kaunas, Lithuania), Profil Papiervertriebs GmbH & Co KG (Hamburg, Germany) [9].

Supply is conducted by road transportation, which incurs substantial costs. Additionally, there are significant risks

associated with delays due to customs clearance and transportation within Ukraine.

As per the contract terms, transportation of a 20-foot container from the port of Hamburg (Germany) to the central warehouse in Kyiv (Ukraine) is conducted. The cargo must be delivered and unloaded in Kyiv within 13 days, as each day of delay results in a penalty of 300 USD.

The analysis of calculation results indicates that for transporting a 20-foot container, the most attractive delivery route would be:

- For the "time" parameter: by road transportation, customs clearance in Kyiv by a customs broker.

- For the "cost" and "total cost" parameters: by railway, customs clearance in Kyiv using the company's resources.

For further analysis to determine the optimal route considering cost and time characteristics, it's necessary to normalize the time, transportation cost, and total cost into relative values.

Subsequently, using decision criteria (Laplace, Wald, Savage, Hurwicz) under conditions of uncertainty, the optimal delivery route should be selected.

Starting from the 20th century, paper production became a highly mechanized industry. Engineers continuously work on developing new specialized types of paper and improving production technology to reduce harmful emissions and increase the amount of finished products [10].

In the printing industry, offset printing is in high demand for producing over 70% of the printed products. A noticeable trend in the market is the implementation of combined printing machines that integrate various technologies, such as offset and flexography. There's also a growing demand for multi-color printed products. Despite the overall increase in the turnover of printing companies, their profitability is decreasing due to several reasons. Firstly, the development of the printing industry in Ukraine is restrained by the high cost of typographic equipment.

Another significant barrier to entering the market is the shortage of skilled specialists.

Designing supply chains in the Ukrainian printing services market can benefit from simulation modeling.

Simulation modeling is a method that allows constructing models that describe processes as they would occur in reality [11]. Such a model can be simulated over time for a single trial or numerous trials. The results are determined by the random nature of the processes, providing statistically robust data.

Simulation modeling is a research method in which the studied system is replaced by a model that accurately describes the real system. Experiments are conducted with this model to gather information about the actual system [12]. Experimenting with the model is called simulation, and it enables understanding the essence of a phenomenon without conducting experiments on the real object.

The goal of simulation modeling is to replicate the behavior of the studied system based on the analysis of the most significant relationships between its elements, creating a simulator for various experiments [13].

Simulation modeling allows for the imitation of a system's behavior over time.

Moreover, the time aspect can be controlled in the model, slowing down processes with rapid changes and speeding up processes with slow variability.

For conducting simulation modeling, let's consider a production scenario. For instance, a shipper contacts a transport and forwarding company on Tuesdays and Sundays, requesting express delivery of cargo from Kremenchuk (Ukraine) to Frankfurt Oder (Germany).

The shipper's primary condition is precise delivery by 9:00 am the next day. In this direction, the transportation is handled by airlines "WizzAir" and "Lufthansa." However, according to the data in Table 1, "Lufthansa" flights do not allow timely delivery.

Let's also analyze the availability of possible transit flights for cargo delivery by 9:00 am on Monday (Table 2).

Taking all possible tasks into account within this supply chain, the following transport-technological scheme can be formed:

1. Receiving the shipment.
2. Weighing the cargo.

Table 1 - Flight Schedule for the Borispol-Frankfurt Route (direct flights)

No.	Airline	Days	Schedule	Time of transportation of the PS
1	2	3	4	5
1	LUFTHANZA	1.3....	11.00-13.00	2.55
2	WizzAir	1234..7	05.30-07.30	2.50
3	LUFTHANZA	1.3...	14.10-16.05	2.55

3. Processing the request.
4. Labeling the shipment and preparing accompanying documents.
5. Sorting the cargo by direction to Kremenchuk - Borispol airport.
6. Loading onto the transport and forwarding company's vehicle.
7. Transportation to Borispol Airport (average time - 4 hours and 5 minutes).

8. Unloading the vehicle of the transport and forwarding company.
9. Processing at the warehouse of the transport and forwarding company or another company.
10. Customs clearance of the shipment.
11. Processing at the Borispol Airport warehouse.
12. Loading into the aircraft (AC).

Table 2 - Schedule of Transit Flights for Cargo Delivery at 09:00 on Monday

№	Airline	The day of loading into the PS	Schedule	Time of transportation of the PS
1	2	3	4	5
1	LOT	7	KBP 14:30 WAW 15:05	1 h. 35 min.
			WAW 18:20 FRA 20:10	1 h. 50 min.
			total	6.40
2	WizzAir	7	LHR 17:25 KBP 15:55	3 h. 30 min.
			LHR 19:10 FRA 21:55	1 h. 45 min.
			total	8.30
3	LUFTHANZA	7	KBP 15:55 DUS 17:40	2 h. 45 min.
			DUS 18:15 FRA 19:10	0 h. 55 min.
			total	4.35
4	LUFTHANZA	7	KBP 17:15 MUC 18:40	2 h. 25 min.
			MUC 19:50 FRA 20:55	1 h. 05 min.
			total	4.40

13. Transportation of the aircraft (AC).

14. Unloading cargo from the aircraft, processing at the airport warehouse.

15. Customs clearance of the shipment.

16. Loading onto the transport and forwarding company's vehicle.

17. Transportation to the recipient of the shipment.

The summarized transport-technological delivery scheme will look as follows:

- Steps 1-5: Receipt and processing of the shipment.

- Steps 6-8: Delivery within Ukraine by road transport.

- Steps 9-15: International transportation of the aircraft (Ukraine-Germany).

- Steps 16-17: Delivery to the recipient in Germany.

Based on the market analysis and the work of transportation companies, statistical data regarding the time parameters of

international express delivery were obtained (Table 3).

Let's perform an imitational modeling of on-time delivery with a probability of 85% for the cycle of international express delivery to evaluate the reliability of delivering by 9:00 am every Monday and Wednesday.

Let's determine the probability distribution laws of the random variables representing the time of performing operations within the express delivery cycle. We will select the distribution law based on the coefficient of variation (defined as the ratio of the standard deviation to the mean value) – table 4-5.

Table 3 - Statistical Parameters for International Express Delivery

№ n/n	International express delivery cycle operation	h, min.			
		min	max	average value	among. square. deviation, minute
1	2	3	4	5	6
1	Reception and registration of the parcel	5	15	10	5,07
2	Delivery by road within Ukraine	300	360	330	34,56
3	International transportation	210	240	225	15,98
4	Delivery to consignee	30	60	45	15,21

Table 4 – Laws of distribution of random non-negative values depending on the coefficient of variation

Limits of changes in coefficients of variation	The law of distribution of a random variable
1	2
$\nu = 0,3$	Normal
$0,3 < \nu < 0,4$	Gamma distribution
$0,4 \leq \nu < 1$	Weibull
$\nu = 1$	Exponential

Table 5 – Selection of distribution law

No.	International delivery cycle operation	Coefficient of variation	Law of distribution
1	2	3	4
1	Reception and registration of the parcel	0,507	Weibull
2	Delivery by road within Ukraine	0,1047273	Normal
3	International transportation	0,0710222	Normal
4	Delivery to consignee	0,338	Gamma distribution

Formulas for simulating random variables following distribution laws are provided in Table 6.

Table 6 - Formulas for Simulating Random Variables

No.	Law of distribution, parameters	Distribution density $f(x)$	Calculation formula
1	2	3	4
1	Normal, \bar{x}, σ	$\frac{1}{\sigma\sqrt{2\pi}} \exp\left[-\frac{(x-\bar{x})^2}{2\sigma^2}\right]$	$x_i = \bar{x} + \sigma\xi_i$
2	Weibull, m, x_0	$\frac{mx^{m-1}}{x_0^m} \exp\left[-\left(\frac{x}{x_0}\right)^m\right]$	$x_i = x_0\sqrt[m]{-\ln \xi_i}$
3	Exponential, λ	$\lambda e^{-\lambda x}$	$x_i = -\frac{\ln \xi_i}{\lambda}$
4	Gamma distribution (η - integer values), η, λ	$\frac{\lambda^\eta}{r(\eta)} e^{-\lambda x} \times x^{\eta-1}$	$x_i = -\frac{1}{\lambda} \sum_{j=1}^{\eta} \ln(1 - \xi_j)$
5	Even, b, a	$\frac{1}{b-a}$	$x_i = a + (b-a)\xi_i$

We determine the parameters of the distribution of random variables.

For the normal distribution, the parameters are the mean value and the standard deviation.

For the Weibull distribution, parameter x_0 - the ratio of the mean value to the

coefficient b_m and parameter m can be determined using Table 7.

For the gamma distribution, the parameters can be found using the formulas 1 ta 2:

$$\lambda = \frac{\bar{x}}{\sigma^2} \quad (1)$$

$$\eta = \frac{\left(\frac{\bar{x}}{\sigma}\right)^2}{\sigma^2} \quad (2)$$

Table 7 - Coefficients for calculating the parameters of the Weibull distribution

Coefficient of variation	Coefficient b_m	Parameter m
1	2	3
1,000	1,000	1,0
0,910	0,965	1,1
0,837	0,941	1,2
0,775	0,924	1,3
0,723	0,911	1,4
0,681	0,903	1,5
0,640	0,897	1,6

End of table 7

1	2	3
0,605	0,892	1,7
0,575	0,889	1,8
0,547	0,887	1,9
0,523	0,887	2,0
0,499	0,886	2,1
0,480	0,886	2,2
0,461	0,886	2,3
0,444	0,886	2,4
0,428	0,887	2,5

Next, we will calculate the coefficients according to the points of the transport and technological cycle:

1. Reception and registration of the parcel.

From the table 5, we take the coefficient of variation (0.507) and from table. 7 we find the closest to it - 0.499, then

$$b_m = 0.886,$$

$$m = 2.1.$$

In accordance

$$x_0 = \frac{\bar{x}}{b_m} = \frac{10}{0,886} = 11,29$$

2. Delivery by motor vehicle within Ukraine.

Parameters for normal distribution:

$$\bar{x} = 330; \sigma = 34,56$$

3. International transportation.

Parameters for normal distribution:

$$\bar{x} = 225; \sigma = 15,98$$

4. Delivery to consignee

Parameters for gamma distribution:

$$\lambda = \frac{\bar{x}}{\sigma^2} = \frac{45}{15,21^2} = 0,2$$

$$\eta = \frac{(\bar{x})^2}{\sigma^2} = \frac{45^2}{15,21^2} = 9$$

Modeling a normal distribution can be performed using the built-in random number generator in MS Excel. For example, to model "Delivery by road transport within Ukraine," you need to set: the number of variables - 1 (each operation of the logistics cycle is modeled separately); the number of random numbers - 50; distribution - normal; parameters: mean - 330 and standard deviation - 34.56. Similarly, for modeling "International transportation," you need to set: the number of variables - 1, the number of random numbers - 50; distribution - normal; parameters: mean - 225 and standard deviation - 15.98.

For modeling a random variable distributed according to the Weibull distribution, you first need to generate a column of random numbers that are uniformly distributed in the interval (0;1). To do this, in the "Random Number Generation" dialog box, specify a uniform distribution of numbers between 0 and 1. Then, the random values are substituted into the formula (Table 6).

$$x_1 = 11,29 \times \sqrt[2]{-\ln 0,543} = 8,908;$$

$$x_2 = 11,29 \times \sqrt[2]{-\ln 0,552} = 8,811 \text{ } \mu\omega\omega\omega. \text{ etc.}$$

For random values distributed according to the gamma distribution law, the parameter $h = 9$, accordingly, you should first derive a column of 9 random values evenly distributed in the interval (0;1), and then substitute the

random values into the corresponding formula of the table. 6. For example, let's define the first realization of the time for delivery to the consignee:

$$x_1 = -\frac{1}{0,2} \times (\ln(1 - 0,594) + \ln(1 - 0,448) + \ln(1 - 0,87) + \ln(1 - 0,329) + \ln(1 - 0,239) + \ln(1 - 0,762) + \ln(1 - 0,597) + \ln(1 - 0,898) + \ln(1 - 0,03)) = 44,36$$

The modeled values of the operation cycle execution time will be divided into several intervals using the built-in Excel tool called "Histogram." First, determine the frequency (the ratio of the number of values falling into an interval to the total number of realizations) and the cumulative frequency (sum of frequencies up to a certain interval). The results are provided in Table 8 and Figur 1.

To calculate the time, you need to first separately calculate the time for points 1 and 2 (reception and processing of the parcel, and delivery by road within Ukraine), then find the lower and upper limits based on the sum of these times. Subtract the departure time of the aircraft (05:30) to determine the start time of receiving and processing the parcel.

Table 8 – Determining the frequency of values falling into time interval intervals for the logistics cycle

The time interval for the delivery of the parcel to the destination, hours. min.	The number of cycle time values in the interval	Frequency	Frequency with increasing total
(6.30-7.20)	3	0,06	0,06
(7.20-8.10)	13	0,26	0,32
(8.10-9.00)	25	0,50	0,82
(9.00-9.50)	7	0,14	0,96
(9.50-10.40)	2	0,04	1,00

Thus, the probability of delivering the parcel to the recipient by 9 a.m. is 0.82.

uncertainty, where all parameters are equally important. This choice is just a tool for achieving the goal of supply chain clustering within the context of European integration, where the strategy of improving service and maximizing customer satisfaction organically allows for both strategic and economic gains.

Choosing the optimal delivery scheme among the possible options is proposed to be based on criteria of time and cost, as well as using selection criteria under conditions of

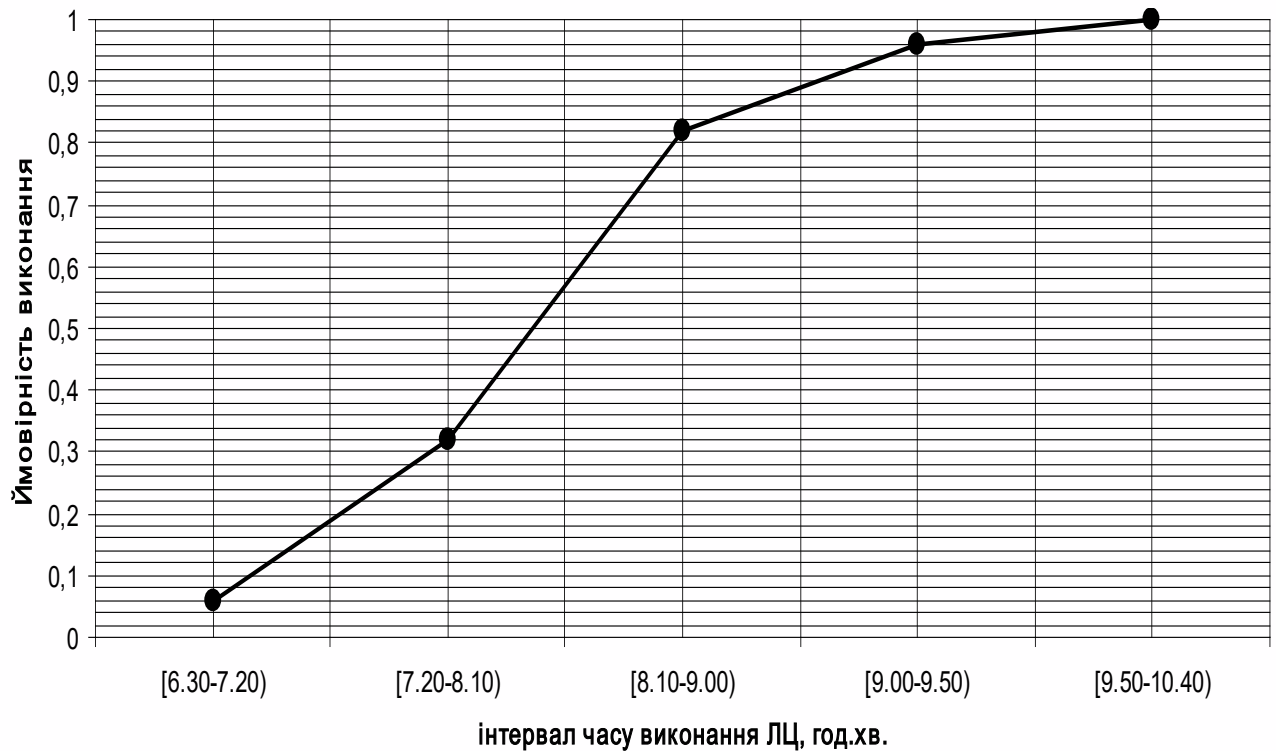


Figure 1. - Logistics cycle time distribution function

The very idea of transport and logistics clusters encourages enterprises to adopt innovative logistics strategies even in "traditional" supply chains. This applies particularly to printing companies and the paper industry, where road transportation is more common, but other forms of transportation, including aviation, are also utilized.

The purpose of evaluating the effectiveness of cluster development is to determine the factors that encourage enterprises to form such structures for the optimization of supply chains.

Clusters are a symbiosis of differentiation and cooperation, an intermediate link between interaction and merging. The stability of cluster formations is due to the fact that partners provide goods, services, and work that are significant and indispensable to each other. This ensures a synergistic effect of such interaction, as the partnership of interconnected economic entities has a potential that exceeds the simple sum of their individual potentials. The underlying

principle of this development is the distribution (differentiation) of economic activities and then their integration (cooperation) into complex systems based on mutual interest and benefit. Such interactions increase the chances of all partners to survive in a dynamic economic environment, especially under conditions of intense competition [14].

Motivational mechanisms for implementing aviation clusters in supply chains of paper industry enterprises include goals that contribute to increasing the level of economic development not only for the enterprises within the transport and logistics cluster but also for the region and the country as a whole.

Optimization of transportation (proper distribution of transport and reduction of idle time) has allowed for a reduction in the number of hired transport vehicles and an increase in the accuracy of customer service for "PAPIR SERVICE SK" LLC.

Conclusions. The formation of a logistics development strategy based on clustering principles within the framework of European integration processes in Ukraine (especially in the context of Russian aggression) for the printing enterprise "PAPIR SERVICE SK" LLC will contribute to: minimizing overall logistical costs; improving the quality of logistics services; investing in logistical infrastructure.

In the conducted study on the clustering of logistics supply chains in the process of Ukraine's European integration, the creation of a territorial cluster's own transport and logistics system for printing enterprises is proposed, which in turn is localized within a transport and logistics cluster within a geographically concentrated business cluster..

References

1. Grytsenko S.I. Ensuring the Competitiveness of the Country in the Context of the Innovation and Industrial Modernization Strategy Based on Cooperation Alliances. Bulletin of Economic Science of Ukraine. Scientific Journal, No. 2 (33) 2017. P. 22-27.
2. Grytsenko S.I. Regional Development of Ukraine Considering Competitive Advantages of Rational Resource Use within Transport and Logistics Clusters. Strategic Management: Global Trends and National Peculiarities. Collective Monograph. Poland: Publishing House "Baltija Publishing," 2019. 712 p. (P 267-280).
3. Grytsenko S.I., Taranych A.V. Strategy of International Economic Activities of Cluster Formations in the Information Economy: Monograph. – Donetsk: DonNU, 2010. 227 p.
4. Hrytsenko S.I. Technology of Formation and Functioning of Transport and Logistics Clusters. Clusters in the Economy of Ukraine: Collective Monograph / Ed. by Dr. of Econ. Sci., Prof. M.P. Voynarenko. Khmelnytsky: KhNU, FOP Melnyk A.A., 2014. 1085 p. (P. 914-931).
5. LLC "PAPIR SERVIS SK". URL: <https://opendatabot.ua/c/40910576>
6. Julius Schulte Söhne GmbH&Co KG. URL: <https://www.schulte-duesseldorf.de/de/>
7. UPM Communication Papers. URL: <https://www.upmpaper.com/>
8. COLOMBIER INTERNATIONAL BV. URL: <https://colombier.com/>
9. DUNAPACK PACKAGIND. URL: <https://www.dunapack-packaging.com/en/main/>
10. Kantsmayster. URL: https://kancmaster.com.ua/ru/news_all/blog/paper_industry
11. Chukhrai N.I. Problems of Marketing and Logistics Adaptation to the Domestic Market Conditions. Bulletin of the Lviv Polytechnic National University, No. 416. Lviv: Lviv Polytechnic University Publishing House, 2000. P. 110-118.
12. Chukhrai N., Hirna O. Formation of Supply Chains: Theoretical and Practical Issues. Lviv, Intellect-Zahid, 2007. P. 153-287.
13. Chuzhykov V. Clusters as an Object of State Regulation. Bulletin of UADU. 2001. No. 4. P. 160-167.
14. Grytsenko S. Transport and logistics clusters are a vector of regional development. Economic and law paradigm of modern society – Journal published by Scientific Consulting Community .r.o. «OpenEurope» - Banska Bystrica. 2016. № 1. p. 39-43.

UDC 338.984

DOI: <https://doi.org/10.46783/smart-scm/2023-20-6>

JEL Classification: M2, M5, M15, D82

Received: 20 August 2023

Zahorodnia A.S. Postgraduate of Department of Management named after Professor Yosyp S. Zavadsky, National university of life and environmental science of Ukraine (Ukraine)

ORCID – 0000-0003-2741-1953

Researcher ID –

Scopus author id: – 57822517200

FORMATION OF THE ECONOMIC SECURITY MANAGEMENT STRATEGY OF THE ENTERPRISE

Alona Zahorodnia. "Formation of the economic security management strategy of the enterprise"..

The article is devoted to the disclosure of theoretical aspects regarding the development, formation and improvement of the strategy of domestic enterprises. Different interpretations of the concept of "strategy" are considered. The essence of the company's development strategy has been clarified. The principles of strategy development have been determined. It has been studied that the development of the company's strategy is carried out in stages. It is considered that in the process of substantiating the prospective directions of the enterprise's operation, various types of strategies can be formed, which can be classified according to certain characteristics.

The essence of the enterprise's economic security management strategy is determined and it is stated that this strategy aims to protect the enterprise from various economic risks and threats, maintain stability and achieve long-term success. The main components of the economic security management strategy of the enterprise are analyzed. It is summarized that the strategy of managing the economic security of the enterprise should be flexible and adaptable to changes in the economic environment. It should focus on long-term success and consider not only current needs, but also future challenges and opportunities.

Keywords: strategy, enterprise, strategy formation, strategy development, development strategy, management strategy, management of economic security of enterprises, risks, threats.

Альона Загородня. «Формування стратегії управління економічною безпекою підприємства». Стаття присвячена розкриттю теоретичних та прикладних аспектів щодо розробки, формування та вдосконалення стратегії управління вітчизняних підприємств. Розглянуто різні трактування поняття «стратегія». Уточнено сутність стратегії розвитку підприємства. Визначено, принципи розробки стратегії. Досліджено, що розробка стратегії підприємства здійснюється поетапно. Розглянуто, що в процесі обґрунтування перспективних напрямків функціонування підприємства можуть формуватися різноманітні типи стратегій, які можна класифікувати за визначеними ознаками.

Визначено сутність стратегії управління економічною безпекою підприємства і зазначено, що ця стратегія має на меті захистити підприємство від різних економічних ризиків і загроз, зберегти стабільність і досягти довгострокового успіху. Проаналізовано основні складові стратегії управління економічною безпекою підприємства. Узагальнено, що стратегія управління економічною безпекою підприємства повинна бути гнучкою та адаптивною до змін в економічному середовищі.

Вона має орієнтуватися на довгостроковий успіх і враховувати не тільки поточні потреби, але й майбутні виклики та можливості.

Ключові слова: стратегія, підприємство, формування стратегії, розробка стратегії, стратегія розвитку, стратегія управління, управління економічною безпекою підприємств, ризики, загрози.

Introduction. The formation of a management strategy is a rather unique process, since only one standard cannot be applied to all enterprises, because there are a large number of different forms, methods, and factors play an important role.

The choice of strategy requires a well-founded analysis of all aspects and sides of the company's activity in the future, and its implementation is primarily related to technological updating, therefore, the company's competitiveness on the market, namely in the future, directly depends on the choice and formation of the strategy.

Analysis of recent research and publications. The study of issues of formation, selection, application of the strategy of managing the economic security of enterprises is reflected in many works of leading scientists, such as Artemenko L. P., Huk O. V., Boychenko K. S., Butynets F.F., Denysiuk I., Honcharov Yu. V., Horielov D.O., Bolshenko S.F., Horielov D.O., Bolshenko S.F., Khatser M. V., Klymenko S. M., Makedon V. V., Pohorelov Yu. S., Tur O. V. It should be noted that the study of these issues has not yet received a single solution.

The formulation of the goals of the article. is to study approaches to the formation of an enterprise management strategy in view of the influencing factors, its implementation and the unstable economic situation in the country, the analysis of management decision-making directions, which ensure optimal and at the same time effective functioning. The development of such a strategy is designed to ensure the reliability and sustainability of the enterprise's economic activity, reduce vulnerability to risks and help achieve sustainable financial success in the long term.

Presentation of the main results. Despite the large number of approaches to interpretations of the concept of "strategy", there is no single definition, so we have considered several definitions in the table. 1. The definitions considered by us complement each other, therefore scientists have developed a large number of approaches to strategy formation and its development, but not all of them are successful during application.

Table 1. Interpretation of the terms "strategy", "development strategy"

Researcher	Definition
1	2
Butynets F.F.	Strategy is a broad general concept of the company's activities, which is a general program of actions that includes the allocation of resources to achieve final goals, the selection of main tasks and courses of action.
Horelov T.O., Bolshenko S.F.	Strategy is understood as a constant change of the enterprise or its regular adaptation to possible changes in the environment on the way to achieving the goal.
Honcharov Yu. V., Lapchuk Yu. Yu.	Strategy is a long-term program aimed at achieving a goal that is constantly monitored, evaluated and adjusted during its implementation.
Denysiuk I.	Development strategy – this integrated concept, which combines strategic directions of development (alternatives) and functional management strategies, constitutes a set of norms, guidelines, directions, spheres, methods and rules of activity established for a long period of time, which ensure the sure movement of the enterprise, its growth and high competitiveness, which strengthens positions in the market, increases the ability to survive in the market.

End of Table 1

1	2
Klymenko S. M.	Development strategy – this is a long-term, qualitatively determined direction of the enterprise's development, which concerns the scope, means and form of its activity, the system of relationships within the enterprise, as well as its position in the environment, which leads the enterprise to the specified goals.
Makedon V. V.	Strategy – the main direction of the company's activity, the plan developed by the company's management in the form of strategic goals, objectives and directions of the company's activity to achieve effective performance indicators and the desired result.
Pohorelov Yu. S.	Development strategy – a continuous process that takes place according to an artificially developed or natural program as a change in the state of the enterprise, each of which is qualitatively different from the previous one, due to which the enterprise as a complex system has new properties, qualities and characteristics, new ones are revealed and can be implemented opportunities.
Khatser M. V.	Development strategy – a general comprehensive program of actions, expressed in both quantitative and qualitative form, which give a clear idea of the future parameters of the development of economic entities, taking into account the set goals and resources necessary for their achievement.
Tur O. V.	Strategy – a complex of management decisions (systems of management measures, a set of target programs, development plans) aimed at forming positive perspectives, priorities and directions of development of the socio-economic system of the economic entity, as a result of ensuring the dynamic and sustainable development of the enterprise.

Source: based on [3], [4], [7], [8], [9], [10], [11], [12], [13].

A business strategy is a long-term plan that defines the goals, directions, and methods of a company's development with the aim of achieving competitive advantages and stable financial success. The strategy outlines how a company plans to utilize its resources, how it intends to respond to changes in the external environment, and how to achieve its long-term objectives [13].

In order to achieve continuous growth in the volume of activity, the enterprise must form its own development strategy.

Enterprise strategy is the process of forming the general long-term direction of the enterprise's development based on the definition of qualitatively new goals, the coordination of the enterprise's internal capabilities with the conditions of the external environment, and the development of a set of measures that ensure their achievement [15].

Principles of strategy development:

1. Orientation to the long-term global goals of the enterprise as an economic system and the economic interests of its owners.

2. The variety of possible directions of development, which is due to the dynamism of the enterprise's external environment.

3. Continuity of strategy development, constant adaptation to changes occurring in the internal and external environment.

4. Complexity of strategy development, consistency of strategic decisions for individual areas of enterprise activity, types of resources, functions, etc.

In the process of substantiating the prospective directions of the enterprise's operation, various types of strategies can be formed, which can be classified according to the following characteristics:

1. Depending on the scale of development:

- general (general) strategy;
- auxiliary (supporting) strategies.

2. The following types of auxiliary strategies are developed according to the areas of activity: marketing, production (operational), financial, investment, strategies for the implementation of other areas and types of activities.

3. Depending on the type of resources that are managed, auxiliary strategies for the

formation and use of labor resources, fixed assets and the material and technical base, the formation of own capital, the attraction of loan capital and other resources necessary for the enterprise are developed.

4. Depending on the pace of development, strategies are distinguished:

- the strategy of accelerated growth - involves a significant increase in the level of short- and long-term goals above the achieved indicators. Such a strategy is typical for developing enterprises and is associated with high risk;

- a strategy of limited growth - a characteristic setting of goals from what has been achieved. Such a strategy is characteristic of enterprises that are mostly satisfied with their position, profitable and efficient;

- the strategy of maintaining the position - focused on ensuring the stable position of the enterprise on the market, strengthening its market positions. The performance indicators of the enterprise are determined based on the forecasted rates and the nature of changes in the market of the enterprise's activity;

- reduction strategy – is adopted when the company's performance indicators continue to deteriorate, during an economic downturn and when there is a threat of bankruptcy. Within this strategy, the following alternatives are possible:

- liquidation of the enterprise;
- "cutting off excess", i.e. reorganization or liquidation of individual units of the enterprise;

- reducing the volume of activity and its reorientation (diversification).

5. Depending on the methods of ensuring development, the following types of strategies are distinguished:

- the strategy of concentrated development – the further development of the enterprise is ensured by the improvement of activities within the limits of the mastered market of functioning (market niche);

- the strategy of diversified development - due to the diversification of activities and development of new sales markets;

- the strategy of integrated development - due to the formation of new structural units, the development of new types of activities, the use of various forms of integration with its counterparties [1].

The development of the strategy of the enterprise is carried out in stages:

- Stage 1 – awareness of the company's mission. Under the mission of the enterprise, it is customary to understand the general global goal (reason, motive) of the creation and operation of the enterprise (from the point of view of its owners).

- Stage 2 – study of the state of the external environment and the degree of its influence on the company's activities.

- Stage 3 – assessment of the strengths and weaknesses of the enterprise (analysis of the efficiency of economic activity, assessment of the competitiveness of the enterprise, determination of competitive status.

- Stage 4 is the formation of a system of strategic goals for the development of the enterprise.

The process of forming goals consists of two interrelated stages of work:

- qualitative definition of goals (for example, conquering the market, achieving a sufficient increase in profit to finance the company's activities or entering new areas, etc.);

- clarification, agreement, concretization and quantification of the set goals in the form of a system of the most important indicators of economic activity, which the enterprise seeks to achieve in a certain period of time.

- Stage 5 – development of strategic alternatives for enterprise development and their evaluation (selection).

The evaluation of the developed strategic alternatives and the selection of the most

expedient for implementation is carried out according to the following main parameters:

- coherence of the strategy with the external environment;
 - internal balance of the strategy;
 - implementation of the strategy taking into account the existing resource potential of the enterprise;
 - acceptability of the level of risks associated with the implementation of the strategy;
 - effectiveness of the strategy.
- Stage 6 – implementation of measures aimed at implementing the developed enterprise development strategy:
- development of a system of supporting (functional) strategies;
 - formation of the company's policy in certain most important areas of activity;
 - development of a system of tactical plans for conducting economic and financial activities.
- Stage 7 – monitoring the progress of strategy implementation and assessing the need for its adjustment [6].

After defining the theoretical approaches to the company's development strategy, let's move on to the important issue of our research on the formation of the company's economic security management strategy.

The strategy for managing the economic security of an enterprise is a document that outlines the action plan and approaches that the enterprise takes to ensure its economic security. This strategy aims to protect the enterprise from various economic risks and threats, maintain stability, and achieve long-term success [2].

The main components of the strategy for managing the economic security of an enterprise include:

1. Analysis of Threats and Risks. Identifying the key threats and risks that can impact the economic security of the enterprise, including financial risks, production risks, market risks, and others.

2. Defining Purpose and Objectives. Establishing specific objectives that the enterprise aims to achieve in the realm of economic security. These objectives should be clear, measurable, achievable, relevant, and time-bound (SMART).

3. Strategy Formulation. Developing strategies and approaches that will help the enterprise achieve its economic security objectives. This may involve diversifying the business, financial planning, optimizing business processes, and much more.

4. Implementation and Monitoring. Implementing the strategies and action plans developed to achieve economic security objectives. Constantly monitoring and controlling the execution of strategies.

5. Evaluation and Adjustment. Continuously assessing the effectiveness of the strategy and responding to changes in the economic environment. Adjusting the strategy if necessary.

6. Involvement of Personnel. Involving personnel in the implementation of the economic security strategy and ensuring their roles in its execution.

7. Ethical and Social Aspects: Considering ethical and social aspects of economic security management, such as compliance with laws, business conduct standards, and responsible corporate behavior [5].

The strategy for managing the economic security of an enterprise should be flexible and adaptive to changes in the economic environment. It should be oriented towards long-term success and take into account not only current needs but also future challenges and opportunities [14].

The strategy for managing economic security is an important tool for ensuring the stability and resilience of the enterprise in a competitive environment. It helps prevent economic crises, reduce risks, and ensure the planned development of the organization.

Conclusions. Thus, despite the large number of approaches to interpretations of the concept of "strategy", there is no single definition. The definitions considered by us

complement each other, therefore, scientists have developed a large number of approaches to the formation of strategy and its development, but not all of them are successful during application.

The strategy for managing the economic security of an enterprise should be flexible and adaptive to changes in the economic environment. It should be oriented towards

long-term success and take into account not only current needs but also future challenges and opportunities.

The strategy for managing economic security is an important tool for ensuring the stability and resilience of the enterprise in a competitive environment. It helps prevent economic crises, reduce risks, and ensure the planned development of the organization.

References

1. Artemenko L. P., Huk O. V., Zhyhalkevych Zh. M. Realizatsiia stratehii rozvytku pidpriumstva: synerhichni pidkhid. Investytsiyi: praktyka i dosvid. 2009. Vyp. 19. S. 12-14.
2. Boychenko K. S. Identyfikatsiya stratehichnykh namiriv na osnovi yikh klasyfikatsiynoyi arkhitektoniky. Formuvannya rynkovoyi ekonomiky : zb. nauk. pr. Vyp. № 25. K. : KNEU. 2011. S. 73–81.
3. Butynets F.F., Shyhun M.M. Modeli i metody pryiniattia rishen v analizi ta audyti Zhytomyr : ZhDTU. 2004. S. 352.
4. Denysiuk I. Stratehiia rozvytku pidpriumstva kharchovoi promyslovosti: ekonomichna sutnist. Ekonomichnyy analiz. 2003. Vyp. 12 (3), S. 112-115. URL: [http://nbuv.gov.ua/UJRN/ecan_2013_12\(3\)_25](http://nbuv.gov.ua/UJRN/ecan_2013_12(3)_25)
5. Didyk, A. M., Ekonomichna bezpeka pidpriumstv. navch. posib. Lviv: NU "Lviv Polytechnica", 2019. 624 p.
6. Dykan V.L. Stratehichne upravlinnya: navch. posib. Kyiv: Tsentr uchbovoyi literatury, 2013. S. 272.
7. Honcharov Yu.V., Lapchuk Yu.Yu. Udoskonalennya stratehii rozvytku pidpriumstva. Visnyk KNUTD. 2014. № 1. S. 193–199. URL: http://nbuv.gov.ua/UJRN/Vknutd_2014_1_30
8. Horyelov D.O., Bolshenko S.F. Stratehiya pidpriumstva: navch.-metod. posibnyk. Kharkiv : KHNADU, 2011. S. 133.
9. Khatser M.V. Stratehiya rozvytku pidpriumstva v umovakh nestabilnosti ekonomiky derzhavy. TDAU (ekonomichni nauky). 2014. № 3. S. 109–112. URL: http://nbuv.gov.ua/UJRN/znptdau_2014_3_24
10. Klymenko S.M. Formuvannya stratehii rozvytku pidpriumstva z urakhuvanniam ryzkyv. Biznes Inform. 2013. № 8. S. 343–347
11. Makedon V.V. Rozrobka stratehii rozvytku promyslovoho pidpriumstva. Teoretychni i praktychni aspekty ekonomiky ta intelektualnoyi vlasnosti. 2013. Vyp. 1(1). S. 369–373. URL: http://nbuv.gov.ua/UJRN/Tpaeiv_2013_1_1_81
12. Pohorelov Yu.S. Sposoby rozvytku pidpriumstva: umovy ta rezultyvnyy vykorystannya. Ekonomichnyy zhurnal OPU. 2017. № 1. S. 76–84. URL: http://nbuv.gov.ua/UJRN/ejopu_2017_1_15
13. Tur O.V. Formuvannya ponyattya stratehiya rozvytku pidpriumstva. Intelekt KHKHI. 2015. № 4. S. 38–45.

14. Zahorodnia, A. S., Reznik, N. P., Chornenka, L. M. (2021). Generalization of the influence of foreign experience of the digitalization process on the economic security of enterprises. *International Journal of Innovative Technologies in Economy*. Vol. 4 №36. Pp.71-77. Retrieved from : https://doi.org/10.31435/rsglobal_ijite/30122021/7744.

15. Zahorodnia, A. S., Reznik, N. P., Neklyudova, T. (2021), The influence of the digital economy on the development of the domestic economy. *International Journal of Innovative Technologies in Economy*. Vol. 3. № 35. Pp. 61-65. Retrieved from : https://doi.org/10.31435/rsglobal_ijite/30092021/7667.

Scientific publication

INTELLECTUALIZATION OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

The electronic scientifically and practical journal

Electronic scientifically and practical journal “Intellectualization of logistics and Supply Chain Management” included in the list of scientific publications of Ukraine in the field of economic sciences (category "B"): **Order of the Ministry of Education and Culture of Ukraine dated October 10, 2022 No. 894 (Appendix 2)**

Field of science: Economic.

Specialties: 051 – Economics; 073 – Management

ISSN 2708-3195

DOI: <https://doi.org/10.46783/smart-scm/2023-20>

The electronic magazine is included in the international scientometric databases:
Index Copernicus, Google Scholar

№ 20 (2023)

August 2023

ISSN 2708-3195

DOI: <https://doi.org/10.46783/smart-scm/2023-20>



This work is licensed under a Creative Commons Attribution 4.0 International License