

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

#18 (2023)
April '23



WWW.SMART-SCM.ORG

ISSN 2708-3195

DOI.ORG/10.46783/SMART-SCM/2023-18

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/2023-18>

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

Released 6 times a year

№ 18 (2023)

April 2023

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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)**

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DOI: <https://doi.org/10.46783/smart-scm/2023-18>
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Contents

INTRODUCTION	5
PEREDERII N.M. PhD in Economics, Vice-Dean Faculty of Management, Transport and Logistics, Professor (Associate) of the Department of Air Transportation Management National Aviation University (Ukraine), OVDIENKO O.V. PhD Student of the Management of Foreign Economic Activity of Enterprises Department National Aviation University (Ukraine), MARCHUK V.Ye. Doctor of Engineering, Professor, Professor of Logistics Department National Aviation University (Ukraine)	
IMPLEMENTATION OF THE LOGISTICS CONTROLLING CONCEPT IN THE MANAGEMENT OF TRANSPORT ENTERPRISES	6 – 18
KARPUN O.V. PhD in Economics, Associate Professor, Associate Professor of Logistics Department, National Aviation University (Ukraine), KISERA T.O. Bachelor`s degree student of Logistics Department, National Aviation University (Ukraine), SOLOVIOVA D.A. Bachelor's degree student of Logistics Department, National Aviation University (Ukraine)	
<i>PROSPECTS OF USING CRM SYSTEMS IN UKRAINE UNDER MODERN CONDITIONS</i>	19 – 30
GRYTSENKO S.I. Doctor of Economics, Professor, Professor of Logistics Department, National Aviation University (Ukraine), TEMCHENKO A.A. Bachelor degree student, National Aviation University (Ukraine), POLISHCHUK A.V. Bachelor degree student, National Aviation University (Ukraine)	
<i>MODERN TRENDS IN GLOBAL SUPPLY CHAINS</i>	31 – 38
BOYARINOVA K. O Doctor of Economics, Professor, Head of the Department of Economic Cybernetics National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute» (Ukraine), KNYZHNYK K.I. PhD student National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute» (Ukraine), ZAHARCHUK A.P. Assistant of Logistics Department National Aviation University (Ukraine)	
<i>GENESIS OF COMPETITIVE DEVELOPMENT OF INDUSTRIAL ENTERPRISES</i>	39 – 46
HRYHORAK M.Yu. Doctor of Economics, Associate Professor, Senior Research Fellow in Institute of Cybernetics of the National Academy of Sciences of Ukraine (Ukraine), HARMASH O.M. PhD (Economics), Associate Professor, Associate Professor of Logistics Department National Aviation University (Ukraine), TRUSHKINA N.V. PhD (Economics), Senior Research, Doctoral Student, Research Centre of Industrial Problems of Development of NAS of Ukraine (Ukraine)	
CONCEPTUAL PRINCIPLES FOR FORMATION OF THE SUPPLY CHAINS' DECARBONIZATION STRATEGIES	47 – 64



UDC 332.1

DOI: <https://doi.org/10.46783/smart-scm/2023-18-3>

JEL Classification: C51, F63, L92, O33, R58.

Received: 25 March 2023

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MODERN TRENDS IN GLOBAL SUPPLY CHAINS

Sergiy Grytsenko, Anna Temchenko, Anastasia Polishchuk. *"Modern trends in global supply chains". The article examines the existing global supply chains, which are an element of the world economy and allow companies to determine the most optimal ways of supplying and producing goods in different countries of the world. The features and problems of formation and functioning of global supply chains are identified. The factors that influenced global supply chains in Ukraine during the war are identified. The analysis of global supply chains reveals their sustainability and dependence on various factors, such as the economic and political situation in the participating countries, changes in technology and innovation, crisis situations such as the COVID-19 pandemic and military conflicts. It is proved that the priority of developing clusters and global supply chains is recognized as the most effective tools for the development of national economies.*

Keywords: Global supply chains, formation of supply chains, clusters, problems of global supply chains functioning.

Сергій Гриценко, Анна Темченко, Анастасія Поліщук. *«Сучасні тенденції глобальних ланцюжків постачання». У статті розглянуто існуючі глобальні ланцюги постачання, які є елементом світової економіки, що дозволяють компаніям визначати найбільш оптимальні шляхи постачання та виробництва товарів у різних країнах світу. Визначено особливості, проблеми формування та функціонування глобальних ланцюгів постачання. Виявлено фактори, що вплинули на глобальні ланцюги постачання в Україні під час війни. Проведений аналіз глобальних ланцюгів постачання дозволяє виявити їх стійкість та залежність від різних факторів, таких як економічна та політична ситуація в країнах-учасницях, зміни технологій та інновацій, кризові ситуації, такі як*

пандемія COVID-19 та конфлікти військового характеру. Доведено, що саме пріоритетність розвитку кластерів та глобальних ланцюгів постачання визнані найефективнішими інструментами становлення національних економік.

Ключові слова: Глобальні ланцюги постачання, формування ланцюгів постачання, кластери, проблематика функціонування глобальних ланцюгів постачання.

Introduction. Today, the formation of global supply chains is an integral part of business. Global supply chains are a system of interaction between businesses that supply various goods and services to the end user. These chains can span several countries and include manufacturers, intermediaries, logistics companies and other organizations.

The company's global strategy is based primarily on the perception of the world as a whole, i.e., the recognition that there are more similarities than differences in the system of consumer preferences of each country. Based on these references, providing the consumer with standardized goods of adequate price and quality carries competitive advantages that often exceed those obtained by highly adapted local companies [1, p. 67; 2]. The economy that is being formed at the present stage is focused on the priority development of clusters and global supply chains, which are recognized as the most effective systems.

Analysis of recent research and publications. Global economic shifts that characterize the current stage of development of the world economy actualize the study of objective dynamic processes of qualitative and quantitative nature that occur in global supply chains, which led to the choice of the research topic, its purpose and content focus. Actual problems of formation and implementation of international economic activity of cluster formations and global supply chains are covered in works [1-14]. To solve the tasks set in this paper, the methods of comprehensive analysis and synthesis were used.

The article is aimed at identifying current trends in global supply chains.

Main material and research results. Global supply chains are a necessary component in the modern economy,

especially in the context of growing international trade and globalization, so it is worth considering the peculiarities of their formation for the better functioning of logistics supply chains. The features of formation include:

- Geographical distribution: Global supply chains can span several countries and continents. Communication between partners and the need to coordinate multiple processes can be problematic.

- Dependence on foreign suppliers: Global supply chains typically rely on many suppliers in different countries. This leads to an increased risk of supply disruptions due to political, economic, or social changes in those countries.

- The possibility of a standardization process: Processes and protocols must be standardized for global networks to work well. This is important to ensure consistent product quality and interoperability between chain members.

- Use of the latest technology: We use a variety of advanced technologies, such as automation, the Internet of Things (IoT) and artificial intelligence (AI), to streamline and optimize global supply chain processes.

- Security risk: Global supply chains can be subject to cyber attacks, loss of confidential information, terrorist attacks, etc. This requires additional security measures to protect against such risks.

- Environmental responsibility: Global supply chains can have a negative impact on the environment, so companies that form global supply chains should be responsible for environmental issues and develop environmental measures [3].

Thus, the formation of global supply chains has its own peculiarities that require additional attention to ensure their efficiency and sustainability. It is important to pay

attention to the geographical distance between chain participants, which can lead to delays in deliveries and increased costs for transportation and storage of goods.

Additionally, it is important to ensure that cultural and religious differences between chain participants are addressed, which can affect cooperation and understanding between them. Since global supply chains are a key element in the global economy, it is important to understand their specifics when forming and managing them.

Global supply chains are the backbone of the global economy, enabling companies to ensure continuous access to resources and markets around the world. However, the growing complexity and risks associated with managing global supply chains pose a number of challenges for companies operating in this sector. The most common problems of global supply chains today include the following:

- The COVID-19 pandemic. The pandemic has significantly complicated global supply chains. Restrictions on the movement of goods and people, interruptions in production and services, changes in demand for goods and services have all caused supply chain disruptions and disruptions in the supply of goods.

- The war in Ukraine. The war has created supply chain disruptions and reduced supply of goods for global supply chains. Almost every stage of the chain, including raw material extraction, production, transportation, and distribution, has been affected by the war. For example, the fighting has affected transportation routes, halted production and deteriorated infrastructure. The war has also led to a shift in the geography of supply chains and a reduction in the role of individual countries in them. Thus, as a result of the war in Ukraine, some countries may refuse to cooperate with Ukrainian companies, which may lead to the transfer of production to other countries that do not have military conflicts [4].

- Uneven distribution of risks. In global supply chains, risk guarantees are distributed

among all participants. However, in the end, most of the risks are mostly borne by less powerful participants, such as small and medium-sized enterprises. This can increase the uneven distribution of costs and risks in the system.

- Insufficient digital transformation. Many participants in global supply chains have not yet fully transitioned to digital technologies and processes. This can lead to insufficient automation and optimization of processes, difficulties in tracking supplies and interacting with stakeholders.

- Over-reliance on a few key suppliers. Many industries are highly dependent on a few key suppliers of raw materials or components, which can lead to the risk of production downtime and supply chain disruption in the event of a problem with suppliers.

All the above-mentioned supply chain challenges caused by the COVID-19 pandemic, port congestion during the pandemic recovery period, the Suez Canal blockade, and Russia's invasion of Ukraine have exposed inherent vulnerabilities in supply chains, causing a reshuffling of the global chain. Disruptions are commonplace and a major source of uncertainty for companies and investors [5].

To better understand the challenges faced by companies due to the COVID-19 pandemic and Russia's invasion of Ukraine, the European Bank for Reconstruction and Development (EBRD) conducted a short telephone survey between May and July 2022, interviewing 815 companies that are direct exporters and importers from 15 countries: Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Lithuania, Morocco, Poland, Romania, Serbia, Slovakia, Slovenia, Tunisia, and Turkey (Figure 1) [5].

Sanctions, the war in Ukraine, COVID-19 disruptions with suppliers, etc., have become a serious challenge for global supply chains today. These factors have resulted in supply chain disruptions and reduced supply of goods, changes in the geography of supply

chains and a reduced role of individual countries in them. They also affected the consumption of products and caused changes in global economic processes.

As a result, companies began to look for new ways to supply and produce goods, as well as to increase their redundancy and flexibility to meet the changes in the global environment.

Specifically, the formation of global supply chains allows companies to access new markets and increase their sales. Such supply chains allow companies to utilize resources and knowledge from different countries to improve the quality and efficiency of their products and services.

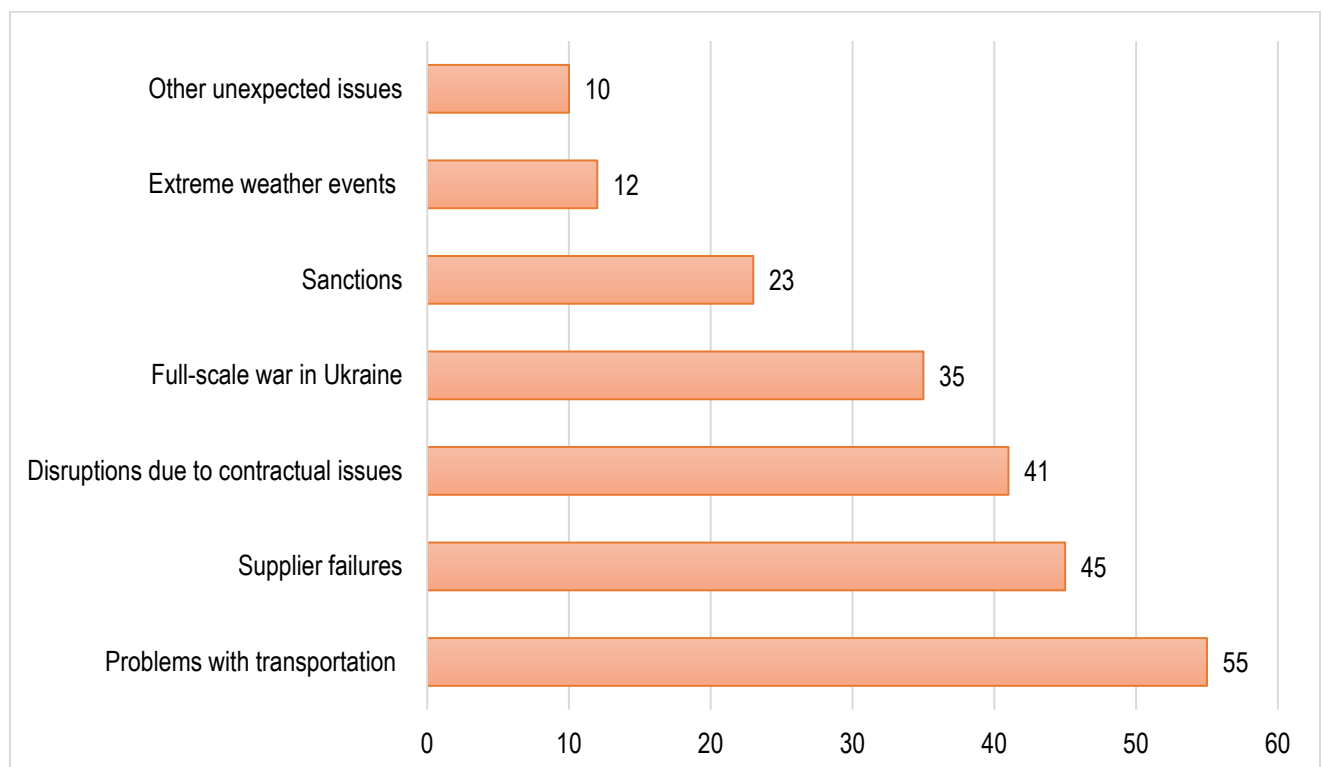


Figure 1 – Challenges in global supply chains

However, the formation of global supply chains can also have negative consequences. For example, companies' dependence on suppliers from other countries can make them vulnerable to changes in the economic, political and social environment. In addition, the formation of global supply chains can lead to deterioration of labor and production conditions in producing countries where low standards of social relations and environmental requirements are set.

Today, the situation in Ukraine and in the world is unstable due to the war and other factors. Ukraine is currently facing a number of challenges in forming global supply chains, including the following:

- Low level of technological development. Ukrainian companies often do not possess modern technologies and do not have enough skilled labor to use them. This creates barriers to entry into global supply chains, as they require companies to use advanced technologies and processes [6].

- Insufficient infrastructure. An efficient logistics infrastructure is an important condition for successful entry into global supply chains. Ukraine faces problems with the transportation of goods due to the insufficient development of roads, railways, and seaports [6].

- Instability of the political and economic situation. The instability of the political and

economic situation in Ukraine may become an obstacle for global business and the formation of supply chains. Exchange rate volatility, political conflicts, and lack of investment can pose risks to foreign investors and business partners [7].

- Low level of competitiveness. Ukrainian companies are not always able to compete with other companies in the world in terms of product quality and price. Insufficient innovation and production efficiency, as well as high energy and resource costs, reduce competitiveness.

Ukraine is currently at war, which has a significant impact on the formation of global supply chains in the country. One of the biggest impacts of the war on global supply chains in Ukraine is that the conflict has led to changes in international trade. Ukraine lost control over certain territories, which led to changes in transportation corridors and international logistics routes. In addition, sanctions were imposed that restricted exports and imports of a number of goods, which affected global supply chains in the country [8].

The war also led to a significant decrease in foreign investment, which affected local companies and manufacturers. Many companies were forced to stop production, which led to job losses and a decrease in the country's production capacity.

The war in Ukraine has had a significant impact on global supply chains, particularly on their logistics component. The conflict has changed the country's geopolitical context, leading to changes in international trade relations and transportation routes. Several factors that affected global supply chains in Ukraine during the war:

Changes in transportation corridors: The war led to a change in transportation routes in Ukraine. In addition, the blockade of the territory occupied by Russia has led to a decrease in traffic flows in the country, which has affected global supply chains [9].

Complexity of the logistics infrastructure: The war also led to a decline in the quality of logistics infrastructure in Ukraine. For

example, many bridges and roads were destroyed, which changed transportation routes and complicated the logistics process [9].

Changes in legislation: The war also led to changes in legislation that affected global supply chains in Ukraine. For example, new import and export control regimes were introduced, which changed trade relations and complicated the logistics process.

Reduced economic activity: The war in Ukraine also led to a decrease in economic activity in the country. This led to a decrease in demand for goods and services, which affected global supply chains in Ukraine. Many companies have stopped their operations or reduced production, which has led to changes in the supply of goods and services [9].

To summarize, the war in Ukraine has had a significant impact on global supply chains, in particular on their logistics component. Changes in transportation routes, the complexity of logistics infrastructure, changes in legislation, and reduced economic activity have all affected global supply chains in Ukraine and globally.

The following steps can be taken to improve global supply chains in Ukraine:

Reconstruction of logistics infrastructure: Ukraine's logistics infrastructure, such as roads, bridges, and other highways, should be rebuilt and improved. This will help reduce the time of delivery of goods, increase traffic flows, and facilitate the logistics process [9].

Expansion of transportation networks: Ukraine's transportation networks need to be expanded, including new highways, railways, and ports. This will help increase transportation volumes and facilitate the delivery of goods [9].

Development of e-commerce: E-commerce is an important component of global supply chains. Ukraine can take steps to improve its Internet infrastructure and increase the volume of e-commerce. This will help companies enter global markets more easily and provide access to goods for consumers around the world.

Improving the business climate: The business climate in Ukraine needs to be improved, in particular by simplifying registration and taxation procedures, reducing bureaucracy and corruption. This will make Ukraine more attractive to foreign investors and help attract new businesses to the country.

Improving the skills of employees: Efficient global supply chains require highly skilled workers who can understand complex logistics processes and respond quickly to unforeseen situations. Ukraine needs to develop a system of professional training and retraining of logistics and customs workers.

Technology development: The use of modern technologies, such as the Internet of Things (IoT), blockchain, and artificial intelligence (AI), can significantly improve the efficiency of global supply chains. Ukraine should facilitate the implementation of these technologies and the development of relevant solutions and programs [10].

One way to improve global supply chains in Ukraine during the war is to create cluster associations.

Cluster associations are a group of companies that work together to improve their competitiveness and efficiency by using shared resources and expertise. Agreements between companies within a cluster can help improve the quality and efficiency of the supply of goods and services [11].

To improve global supply chains in Ukraine during wartime, cluster associations can be introduced at different stages of the supply of goods and services. For example, companies could come together to share procurement, production, logistics, and marketing. This will allow companies to shorten delivery times, reduce procurement and distribution costs, and improve the quality of products and services.

Cluster associations can also help to improve the links between supply chain participants and ensure mutually beneficial terms of cooperation. Companies can interact not only with each other, but also with government agencies, the public, and

research institutions, which can provide additional benefits in supply chain management [12, 13].

For cluster associations to function successfully, certain conditions must be met. First of all, participants must have common goals and interests in improving the supply chain. Second, it is necessary to have sufficiently qualified personnel who can implement cluster association projects. Third, it is important to have support from the government and other organizations that can facilitate interaction and cooperation among cluster members [12, 14].

In general, the creation of cluster associations can improve global supply chains in Ukraine during wartime. This can create favorable conditions for economic development and ensure resilience in case of emergencies.

One possible example of a cluster association that could improve global supply chains in Ukraine and help the Armed Forces of Ukraine (AFU) is the creation of a cluster in the production of military equipment and machinery.

This cluster could bring together manufacturers of military equipment, suppliers of components and materials, research institutes, logistics companies, financial institutions, and other organizations working in the sector.

The creation of such a cluster can help solve the problems that arise in global supply chains of military equipment and supplies due to war and other factors. The cluster can provide interaction between supply chain participants, promote the development of new technologies and innovations, increase production volumes and reduce production costs.

In addition, the creation of the cluster can help the Armed Forces of Ukraine in providing the necessary military equipment and machinery, which is an important condition for maintaining national security. Also, the creation of a cluster can help attract investment in Ukraine's military-industrial

complex and increase its competitiveness in the global market.

Thus, the creation of a cluster association in the field of military equipment and machinery production can be an effective tool for improving global supply chains.

In general, the formation of global supply chains is an important element of modern business, which can lead to significant economic growth and development. However, it is important to ensure compliance with high standards of social responsibility and sustainable development in order to reduce the negative impact on the economic, social and environmental environment [11, 12].

Conclusions. Global supply chains are an important part of the global economy and trade. They allow companies to access different markets and meet demand for products from around the world.

However, global supply chains are also facing a number of challenges that have arisen during the COVID-19 pandemic, war and other events. These include changes in transportation corridors, complexity of logistics infrastructure, uneven distribution of risks, insufficient digital transformation, unstable political and economic situation, insufficient infrastructure, low level of technological development, and others.

Ways to solve these problems may include the use of modern technologies, such as artificial intelligence, to automate supply chain management processes, expanding transportation networks, developing e-commerce, improving employee skills, maintaining an open dialogue with all chain participants, and creating cluster associations.

Thus, global supply chains are an important element of the global economy, but their problems require improvement and the use of modern technologies to ensure stable and continuous development..

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