

IMPORTANT PROBLEMS OF DIGITALIZATION OF LOGISTICS
ACTIVITY

ВАЖНЫЕ ПРОБЛЕМЫ ЦИФРОВИЗАЦИИ ЛОГИСТИЧЕСКОЙ
ДЕЯТЕЛЬНОСТИ

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Abstract: This article is devoted to the analysis of current problems of digitalization of the logistics sector. In it, the technological, economic and organizational problems that arise in the process of digitalization of logistics activities are considered in detail. In particular, special attention is paid to the introduction of automated systems, information security, personnel training, development of technological infrastructure and legal frameworks. The article also analyzes the possibilities of using international experience and advanced technologies. The results of the research offer practical recommendations that help to effectively organize the process of digitalization of the logistics sector.

Аннотация: Данная статья посвящена анализу актуальных проблем цифровизации логистической сферы. В ней подробно рассмотрены технологические, экономические и организационные проблемы, возникающие в процессе цифровизации логистической деятельности. В частности, особое внимание уделяется внедрению автоматизированных систем, информационной безопасности, подготовке кадров, развитию технологической инфраструктуры и

законодательной базы. Также в статье анализируются возможности использования международного опыта и передовых технологий. По результатам исследования предложены практические рекомендации, которые помогают эффективно организовать процесс цифровизации логистической сферы.

Keywords: Logistics, digitization, technological problems, data security, infrastructure, automation, innovative solutions, personnel training, legal bases, international experience.

Ключевые слова: Логистика, цифровизация, технологические проблемы, безопасность данных, инфраструктура, автоматизация, инновационные решения, подготовка кадров, правовые основы, международный опыт.

Introduction.

The role of the logistics sector in the modern economy is increasing. The efficiency of the management of the processes of delivery of products and services from the producer to the consumer has a direct impact on the success of the entire economic system. Especially in the conditions of globalization, logistics activity is an important factor in ensuring competitiveness. At the same time, the introduction of digital technologies allows to significantly increase the quality and efficiency of logistics systems.

But the process of digitization of the logistics sector creates a number of pressing problems. These challenges include insufficient technological capabilities, gaps in training, data security and reliability, as well as economic and legal challenges. Solving these problems is important not only for the development of the logistics industry, but also for improving the efficiency of the entire economic system.

This article analyzes the problems encountered in the process of digitization of logistics activities and develops practical recommendations for their solution. Promising directions for improving the efficiency of digital logistics systems will be shown through the use of international experience and advanced technologies.

The main part.

Digitization of logistics activities is one of the urgent issues of today, and many scientific researches are being carried out in this field. During the analysis of the literature, it was found that the authors researching the digitization of logistics systems paid attention to several main directions.

Firstly, the topic of automation and optimization of logistics

processes has been widely studied. In particular, researchers such as K. Christopher[1] and M. Holweg[4] covered the issues of increasing the efficiency of supply chains using digital technologies. Their research shows the advantages of using IoT (Internet of Things), blockchain technologies and artificial intelligence in the field of logistics.

Secondly, many studies have been carried out on the issue of data security. P. Kotler[3] and others emphasized the effectiveness of analyzing big data (Big Data) in the field of logistics, while raising the issues of ensuring confidentiality and security of data. He also noted the importance of legal and technological foundations of transparency in data exchange.

Thirdly, the analysis of the literature on staff training and infrastructure issues in digitization shows that researchers have paid special attention to the development of digital skills in the field of logistics. For example, R. Bowersox[2] and D.J. Closs[2] emphasizes the need to train qualified personnel for the introduction of modern digital technologies in the management of logistics activities.

Fourthly, the study of international experience and the problems of technological innovation is noteworthy. The experience of countries such as China, Germany and the USA in the field of logistics digitization has been demonstrated in many studies. In particular, the projects implemented within the framework of the concept of "Industry 4.0"[6] in the European Union countries demonstrate new possibilities of digitization.

The analysis of the above literature shows that digitalization of logistics activities requires a systematic approach, taking into account technological development and economic factors. At the same time, the issues of the development of legal frameworks and the introduction of international standards have not been sufficiently explored in research. This shows the need for further research on this topic.

Digitization of logistics activities is one of the important requirements of the modern economic environment. Studies show that the main problems encountered in the process of digitalization are embodied in technological, economic, personnel and legal directions. An effective solution to these problems is necessary to increase the competitiveness of the logistics industry.

Technological problems appear as factors slowing down the widespread introduction of automated systems in logistics processes. In particular, the high cost of artificial intelligence, IoT and blockchain technologies and the insufficient development of the existing infrastructure pose a challenge for many organizations. At the same time, international

experiences in the use of advanced technologies help to define effective directions in finding solutions to these problems.

Economic problems are related to the limited financial resources needed for the digitization of logistics activities. In the process of introducing digital technologies, enterprises often face difficulties in making initial investments. However, international experience shows that these costs provide significant income in the long term and increase the efficiency of logistics systems.

The issue of personnel training is also of urgent importance. In the process of digitization in the field of logistics, the demand for highly qualified specialists in managing modern technologies is increasing. However, in many countries, the education system does not adequately meet this demand. Therefore, it is necessary to expand the measures for personnel training and retraining based on special programs.

Inadequate development of the legal framework also slows down the digitization process. The issues of ensuring the security and confidentiality of information in logistics systems, as well as the legal regulation of electronic document circulation, are still waiting for a solution. Also, the processes of development of international cooperation and harmonization of standards are lagging behind[5].

The discussed issues show that a comprehensive approach is necessary to achieve success in the digitization of logistics activities. In this process, together with the development of technologies, personnel training, economic support and legal regulation are of great importance. Digital logistics systems not only increase economic efficiency, but also serve to ensure global competitiveness.

This study was focused on identifying the main problems encountered in the process of digitalization of logistics activities and developing scientific and practical recommendations for their solution. Analyzes show that the digitization process provides an opportunity to increase efficiency, optimize costs and speed up processes in the field of logistics. However, there are a number of obstacles in the implementation of this process, which are manifested in technological, economic, personnel and legal directions.

As a result of the research, the following main conclusions were drawn:

1. The need for technological development: For the effective introduction of artificial intelligence, IoT and blockchain technologies, it is necessary to strengthen national and international cooperation in the

development of existing infrastructure and the application of technological solutions.

2. Economic support: It is necessary to develop cooperation between the state and private sector and create financial incentive mechanisms for initial investments aimed at digitalization of logistics activities.

3. Training of skilled personnel: It is important to introduce special training programs and organize retraining of existing personnel to train specialists with digital skills in the field of logistics.

4. Strengthening the legal framework: It is necessary to develop the legal framework for ensuring data security, electronic document exchange and the introduction of international standards.

On this basis, the implementation of the digitalization process on the basis of a comprehensive approach will make it possible to increase the competitiveness of logistics systems and make a significant contribution to the overall development of the economy. By implementing these recommendations, it is possible to accelerate digitization processes in the logistics sector and effectively use global experience.

Conclusion.

Digitization of logistics activities is an urgent requirement of today, and its successful implementation plays an important role in increasing the competitiveness of the economy. The results of this study showed that in the process of digitization of logistics processes, it is necessary to jointly solve the issues of technological development, economic support, training of qualified personnel and improvement of the legal environment.

The main advantages of digitization in the field of logistics are:

1. Improving the efficiency of processes: Through digital technologies, the speed and accuracy of logistics processes are significantly improved.

2. Cost optimization: Automated systems ensure cost reduction and efficient use of resources.

3. Data security: Data security and transparency can be ensured through blockchain and other advanced technologies.

4. Global integration: digital systems operating on the basis of international standards ensure global integration of logistics activities.

However, it is important not to ignore existing problems in the process of digitalization of logistics activities. Improving the technological infrastructure, strengthening cooperation between the state and private sector, increasing the potential of personnel and solving legal problems are the main conditions for the development of this industry.

In short, the digitization of logistics activities is an integral part of the modern economy, and the measures implemented in this direction serve not only economic, but also social interests. Strategic approaches in this area serve to ensure the sustainable development of logistics systems and open new technological opportunities.

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