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Innovative Technologies and Methods of Freight Transportation are Used to Improve Logistics in Uzbekistan

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ABSTRACT

This article analyzes the methods of using innovative technologies in the development of the digital logistics system in Uzbekistan, identifies the efficiency parameters of managing the activities of the logistics system. In particular, scientific proposals and practical recommendations for improving the management of the activities of the digital logistics system are developed.

Keywords: digital economy, logistics, digital technologies, globalization, digital transformation, efficiency, digital logistics, strategy, digital technologies, competition, transport system, digital platform, concept.

In recent years, our country has been paying great attention to accelerating the comprehensive digitalization of the economy, including the transport and logistics sectors. In this regard, the Decree of our President Sh.M. Mirziyoyev “On approval of the strategy “Digital Uzbekistan - 2030” [Decree of our President Sh.M. Mirziyoyev “On approval of the strategy “Digital Uzbekistan -2030” and measures for its effective implementation” No. 6079] is of great importance. As is known, the Digital Economy is rapidly entering the economies of many countries of the world today. The rapid development of digital technologies has led to the acceleration of the processes of globalization of the economy.

Their effective use in all aspects of the economy is becoming a requirement of today. Digital transformation is the main tool for today's rapidly changing world. In addition, it is possible to achieve rapid economic development in the country based on the development of digital logistics.

In our country, comprehensive measures are being implemented to actively develop the digital economy and widely introduce modern information and communication technologies in all sectors and areas, primarily in economic areas.

Indeed, a number of decrees and resolutions are being adopted in our republic to form a digital economy. Examples of these include the Decrees of the President of the Republic of Uzbekistan

dated February 19, 2018 “On measures to further improve the sphere of information technologies and communications” [Decree of the President of the Republic of Uzbekistan dated February 19, 2018 “On measures to further improve the sphere of information technologies and communications”] and the Decree of the President of the Republic of Uzbekistan dated March 2, 2020 “On the State Program for the Implementation of the Strategy of Actions in Five Priority Areas of Development of the Republic of Uzbekistan in 2017-2021 in the “Year of Science, Education and Development of the Digital Economy”].

In particular, in accordance with the Decree on approval of the “Digital Uzbekistan -2030” strategy and measures for its effective implementation, which has been carried out in our country in recent years, it is planned to carry out extensive work on the active development of the digital economy in our country. Currently, logistics is one of the digital sectors both in the world and in Uzbekistan, which is reflected in foreign sources studying logistics. Most of the new trends in the logistics sector cannot be realized without innovations in the development of digital technologies in the logistics sector. At the same time, the use of modern digital technologies in the logistics sector is a targeted factor in increasing the country's economic competitiveness.

At the current stage of our country's development, innovation is becoming the main factor in human progress and economic growth.

The continuous development of the digital economy in the process of globalization is having a significant impact on the transformation of humanity and social life. Modern equipment and technologies have a significant impact on production and the modernization of all sectors. Effective economic activity determines not only the production strategy, but also the strengthening of the country's economic potential. In particular, in the logistics sector, the movement of material and information flows is being ensured more intensively based on innovations. In addition, modern digitalized and automated means are being widely used in the transport sector, which helps organize international cargo turnover. The development of transport relations between states has long been one of the main means of uniting peoples, developing the economy and enriching cultures. Since ancient times, transport routes have been one of the main sources of state income. Over time, transport has become an integral part of our lives. Now we cannot imagine a single moment of our lives without logistics and transport.

The lack of widespread use of modern software tools and digital technologies in the logistics and transport system in our country, the continued existence of outdated systems, the suboptimal organization of the supply process, and the underdevelopment of the logistics tracking system. The reasons for almost all of these and the solutions and proposals for them are the main issues addressed in this article.

Digital logistics and its specific features, the use of digital technologies in logistics have been studied by a number of foreign economists and are currently one of the hot topics among world scientists. In particular, Uzbek scientists have also expressed many valuable ideas.

Although the scientific research of the above authors is to one extent or another related to the topic chosen for research, none of them has set and studied the issues of developing logistics and transport at the national level as an object of research.

In an era when the world economy and innovations are developing day by day, it is necessary to radically reform all sectors under the slogan "New Ideas, New Uzbekistan", and in particular, to introduce innovations in the field of logistics and transport. For example, in the delivery of goods, using various modern intelligent technological achievements, to create a holistic online shell that can fully, timely, and based on appropriate algorithms control the condition and quality of the goods to the destination.

Analysis of relevant literature

Digital logistics and its specific features, the application of digital technologies in logistics have

been studied by a number of foreign economists and are currently one of the hot topics among world scientists. In particular, our country's scientists have also expressed many of their views. Digitalization plays an increasingly strategic role in the logistics and supply chain system; the ability to collect and analyze big data, together with a physical network with fast and reliable delivery capabilities, improved data visibility and connectivity have a significant impact on logistics productivity and supply chain networks.

Deconstructing the emergence, adoption and manifestation of digitalization in the logistics and supply chain system provides a broader understanding of institutional and industrial processes and changes.

Logistics has become increasingly important as a result of globalization, trade growth, and the worldwide regulation of transportation. Today, many companies are outsourcing their logistics services to logistics firms so that they can focus on their core business and take advantage of the opportunities for cost reduction and improved flexibility. From an economic perspective, two macro factors are driving the trend toward globalization (Frankel, 2000). The first is the reduction in barriers to the flow of goods, services, and capital that have occurred. The second factor is technological change, primarily the dramatic changes in communication, information processing, and transportation technologies in recent years.

Müller, (2004), argues that the most important link is the creation of a global information system, a global network of IT connections using the Internet. The information technology system is supported by the fixed and mobile telephone networks and satellite communications.

According to Lianguang and Hertz (2017), "The logistics industry is constantly growing due to the growth of logistics firms and market consolidation. Some logistics firms are even among the largest firms in the world today." (p. 1004). This shows that the Internet is one of the main factors in the development of digital logistics.

According to the article by European scholars Flint, Larsson, Gammelgaard and Mentzer (2011), one of the main reasons why the logistics industry is considered to be lagging behind is that "logistics research, innovation, and modern concepts have been almost completely ignored." (p.113) The global market, which continues to undergo technological renewal, has forced enterprises to look for new ways to innovate. From a strategic point of view, organizations (more precisely, logistics organizations) need to learn better and faster than their competitors by properly coordinating with the environment. As the concept of industry has evolved, the concept of logistics has also evolved. The logistics industry has emphasized the development of the main features of "constantly increasing demands of manufacturers for high efficiency and constantly increasing demands of customers for high-level service" (Maslaric, Nikolicic, Mircetic 2016, p.511). It is necessary to develop a new concept of logistics organizations that will face current and future industrial practice. The solution may lie in a new operational, organizational and management standard – the Internet. These ideas are the main idea of Benalt Montreville (Academician of Economics at Laval University in Canada). This theory shows that logistics organizations need to digitize their business models. Digitizing business models can allow logistics companies to work in tandem to achieve their mutual goals.

Transport, indeed, plays a crucial role in connecting different import and export markets, as well as connecting the operations of organizations spread across the globe. In recent times, the world economy has changed significantly;

it is becoming increasingly clear that globalization is transforming into a new logistics "Digital Logistics". Globalization has not only created opportunities for connecting with new markets, but has also affected the competitors of established players who are struggling to gain the trust of those customers.

Today, carriers are forced to change the appearance of their businesses beyond the borders of their countries and regulate their costs in order to survive the fierce competition. Transport has

been an important activity of humanity throughout history, whose prosperity largely depends on international and interregional trade. In fact, transport has been called one of the four foundations of globalization, along with communication, international standardization and trade liberalization (Kumar and Hoffmann, 2011).

Logistics refers to the integration and storage of goods, which are related to the flow of information from the beginning to the end of the supply chain. There are many foundations in logistics, such as the collection, storage and retrieval of goods, materials management, processing strategy planning and similar information, and a reliable and economically viable transportation system, integrated logistics.

There are transparent ways for firms to integrate into transport and distribution systems to improve their efficiency in a globally competitive environment. However, transport logistics systems vary depending on the environmental and production types of markets for raw materials, components and finished products, and different strategies have a common goal. The common goal is to deliver the right product to the right place at the right time, thereby reducing storage costs.

Economic globalization means that employment and financial markets are becoming increasingly integrated around the world. From an economic perspective, two macro factors are emerging that drive the trend of globalization (Frankel, 2000). The first is the reduction of barriers to the flow of goods, services and capital. The second factor is technological change, mainly in recent years, dramatic changes in communication, information processing and transport technologies. Müller, (2014), emphasizes that the most important link is the creation of a global information system, the global IT network using the Internet. The information technology system is supported by a regular and mobile telephone network.

In the annual global digital competitiveness ranking published by the Institute for Management Development (IMD World Competitiveness Center3), the top ten countries in 2020 are the USA, Singapore, Denmark, Sweden, Hong Kong, Switzerland, the Netherlands, South Korea, the United Arab Emirates, Norway and Finland. Of the Central Asian countries, only the Republic of Kazakhstan participated in the ranking, taking 35th place in 2022.

In recent years, a number of measures have been implemented in our country to widely introduce and develop the digital economy. It is worth noting that the Resolution of the President of the Republic of Uzbekistan No. PQ-3832 “On measures to develop the digital economy in the Republic of Uzbekistan” dated July 3, 2018 became the “foundation stone” for the development of the digital economy in our country. The resolution sets out a number of important tasks for the development of the digital economy in our republic, of which "ensuring close cooperation between government bodies and business entities in the field of introducing innovative ideas, technologies and developments for the further development of the digital economy" 8 remains one of the most urgent issues today.

Digital technologies are also widely used in the transport sector, which is considered an important sector of the economy. Although the main focus is on the digitalization of processes such as service provision and equipment management in the transport and logistics sector, customer service, in practice, it is becoming clear that digital technologies are not sufficient to assess the activities of enterprises operating in the transport sector through in-depth analysis of their financial condition, creditworthiness, and performance indicators.

In order to finance projects to further develop the transport sector in 2021-2023, it is planned to absorb a total of 5759.9 million dollars in investments, of which 311.8 million dollars will be loans from commercial banks. The timely and high-quality implementation of these processes depends on the financial stability of economic entities operating in the sector and the ability to repay loans on time. In addition, the further development of the activities of a number of economic entities providing transport and logistics services and ensuring high growth rates also depends on the amount of loans allocated to them. In particular, the fact that in 2020, 4336.4

billion soums of loans were allocated to the transport and communications sector by commercial banks of our republic requires the introduction of modern methods for assessing the creditworthiness of enterprises in this sector. The role of the banking system, which is an important sector of our national economy, in the development of the digital economy is enormous. After all, bank loans also play an important role in the development of all sectors and branches of the economy in our republic.

Research methodology

The article reviews existing scientific research on the digital economy and digital logistics. In this process, grouping, dynamic, comparative, deductive, logical, analytical, economic analysis and other methods were widely used.

Analysis and results Today, companies in every industry are adopting digital technologies and reshaping their models based on new trends in digital transformation. Companies continue to offer new processes or change existing ones. In addition, creating new company cultures and even introducing new customer experiences to meet the changing needs of consumers and the market, customer demands. In particular, digital transformation in the logistics and transport sector helps network companies use new technologies and remain competitive in an ever-expanding market.

In recent years, companies have undergone significant changes in the tools and technologies for managing logistics and supply chains. Companies have begun to automate corporate information systems on a large scale and have become participants in e-commerce platforms and e-commerce services, forming their own virtual databases.

Many American scientists consider innovation to be of great importance in the digitalization of the transport and logistics sector. However, according to analysts from the well-known international management consulting company Mc Kinsey4, information is the main element in the digitalization of the logistics sector, and the ability to use it reflects the level of digitalization of companies.

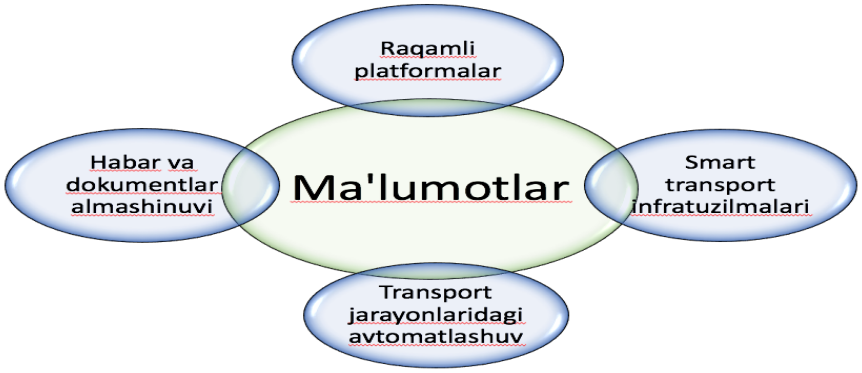

Figure 1. Key factors in the digitalization of logistics

Digital innovations allow logistics players to increase efficiency and reduce costs, as well as explore new business opportunities. This transformation leads to a new paradigm called "Logistics 4.0", based on four key trends.

Taking the United States logistics market as an example, it is no exaggeration to say that this market is currently witnessing a huge digitalization. For example, large suppliers such as Amazon, JB Hunt and Ch. Robinson use digital technologies, drones and cloud technologies in their activities. It is no secret that it is financing large projects. All these are efforts aimed at meeting consumer demand. The logistics industry is a huge market with a revenue of more than $ 4 trillion worldwide, affecting various business sectors from e-commerce to manufacturing and high technology. Currently, the introduction of a number of modern technologies in the digitalization of logistics is of urgent importance.

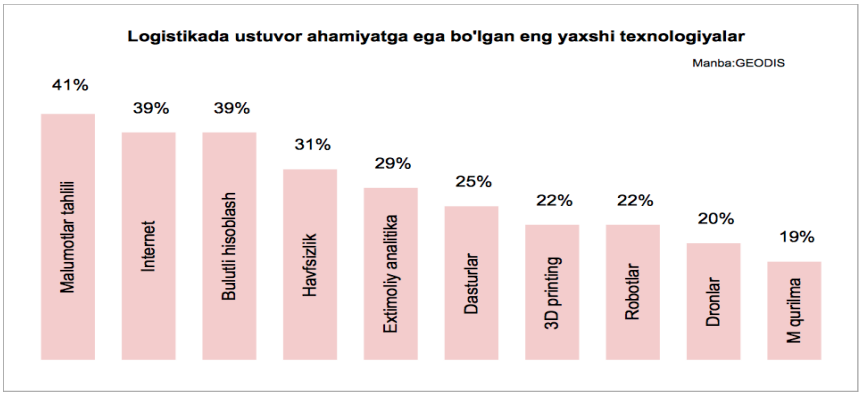

Figure 2. Top technologies that are a priority in logistics.

The above diagram shows that the logistics system is considered a complex integrated system formed by a number of modern technologies and a complex database formed by the flow of information. It should be noted that the main sources of digitalization of logistics are economic data analysis and special programs developed by its Internet providers. In addition, in order to further improve the quality of service to consumers, for example, to ensure the delivery of goods in a high-quality, timely, reliable, and within the specified period, various programs, robotics, and drones are widely used. Automation. Automation of production and services requires one of the main solutions for the digitalization of the transport sector.

Mobility as a Service (MaaS5) combines different forms of transport services into a single mobility service that can be used on demand. The MaaS operator facilitates a diverse menu of transport options to meet the customer's needs. MaaS creates the best service for users by meeting their mobility needs and helping to solve the inconveniences of individual trips and the entire system of mobility services. In other words, many actors in the transport sector interact in different processes. For example: When a customer orders, buys or arranges for delivery of goods online, they simultaneously communicate with different entities. This communication is ensured by digital platforms, integrated applications and communication technologies. The figure below illustrates such digitally integrated mobility.

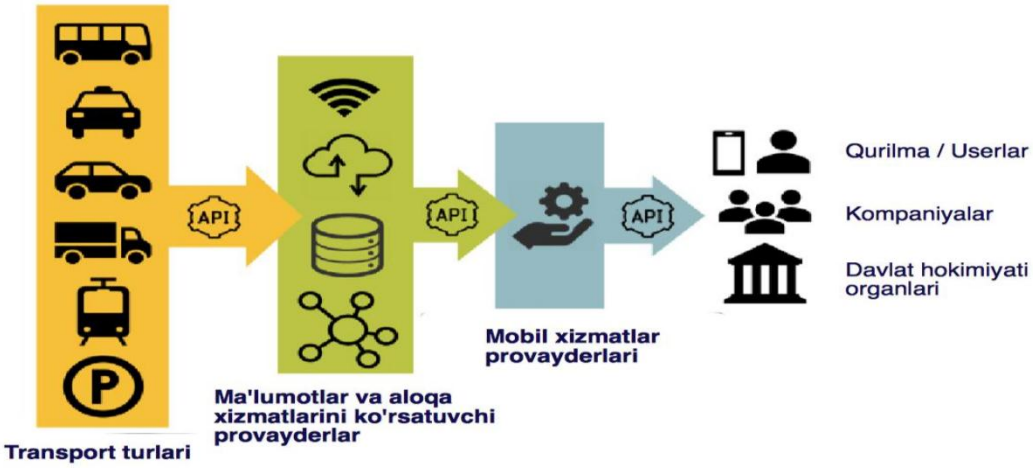

Figure 3. Modern mobility integration

In addition, it is no exaggeration to say that the digitalization process is currently in full swing in all economic sectors in developed countries. A vivid example of this is the port of Rotterdam in the Netherlands. This port is called "the most advanced port in the world" because the port is a leader in the adoption of modern technologies. The port's fully automated container terminals use computer-programmed cranes to unload cargo, increasing production capacity, improving processing performance, and reducing labor costs. According to the Wall Street Journal, automation allows the Dutch port to increase overall productivity by 30 percent.

Conclusions and suggestions

The conclusion of the article presents proposals and general conclusions on the fundamental reform of the logistics and transport system of our country, digitization based on modern techniques and technologies, innovative ideas, and recommendations on the stages of its implementation.

The logistics and transport sector is currently undergoing serious changes due to digitization. The level of digitization largely determines the speed, accuracy of operations and provides opportunities for developing the flexibility and adaptability of the supply chain. This leads to new prospects for companies and their customers:

In our country, it is proposed to carry out phased work on the formation of innovative transport and logistics systems based on a single digital platform. These stages of work are being studied by the authors of the article as a basis for creating an innovative transport and logistics system based on modern digital technologies.

In our opinion, the following work should be carried out to study the digital platform in the transport and logistics system of our country:

- creation of a single entry point for digital platforms in the supply chain in the framework of innovative transport and logistics cooperation;
- support for the effective exchange of transport and logistics data between supply chain participants;
- common standards required for joint innovative research in the field of transport and logistics, allowing participants to use external distributed systems for storing and processing the necessary data;
- integration with external information systems, including foreign systems, to identify supply chain participants and ensure their interaction;
- ensuring the management of mutual settlements on transport and logistics operations, joint use of infrastructure in the study of the transport and logistics sector between digital platform participants;
- implementation of technological interfaces for interaction with digital platforms of supply chain participants and leading logistics centers.

If we look at developed foreign countries, we can see that the above processes were fully implemented several decades ago. In particular, in the USA, Germany, France, England, Turkey, Singapore, UAE, China, Malaysia, Korea, Japan and other countries, the transport sector is fully automated. As a result, we can see that the transport sector has been developing in all respects over the years, and processes are being implemented through digital technologies. Currently, we can see that these countries are moving to a new stage using artificial intelligence based on the "Smart City" concept.

So, if we want to put our country among the developed countries, first of all, we can solve problems and achieve the set goals only by developing each sector separately. It is worth noting the following problems associated with the introduction of digitalization in the transport sector:

- The fact that the main passenger and freight locomotives in our republic are not digitized in almost all regions;
- lack of digitization of the public transport system serving the population into a single database and 3D maps covering all regions;
- weak integration of unified information between organizations engaged in passenger and freight transportation and customers;

There are many problems in the country, such as the lack of a single digital platform in road

transport, rail and air transport, which creates the need to further accelerate digitalization.

At present and in the near future, the introduction of promising developments in the transport system of our country, such as digital infrastructure and intermodal services, will significantly increase the volume of passenger and freight transportation and have a significant impact on economic stability. This is because our country has a favorable geographical and transit location. Considering that we do not have waterways and transport is only on land, the importance of railways and road transport in our country will naturally increase, and the problems that arise will need to be eliminated.

List of used literature

1. O‘zbekiston Respublikasi Prezidentining 2022 yil 28 yanvardagi “2022-2026 yillarga moljallangan Yangi O‘zbekiston Respublikasining Taraqqiyot strategiyasi togrisida” PF-60-son farmoni.
2. Adler Yu.P., Markova Ye.P., Granovskiy Yu.V. Planirovaniye eksperimenta pri poiske optimalnыx usloviy. - M.: Nauka, 2006 g.
3. Albekov A.U., Gribov.M. Zakonomernosti razvitiya transportno-skladskoy logistik* na regionalnom urovne (na primere Rostovskoy oblasti): Monografiya / RGEA. Rostov-na-Donu, 2009 g.
4. Albekov A.U., Fedyu V.P., Mitko O.A. Logistika kommersii. Rostov-na-Donu: «Feniks», 2008 g.
5. Berejnoy V.I, Lukshskiy B.C. «Metodologiya logisticheskogo podxoda k upravlenio avtotransportnым predpriyatiyem». Biznes i logistika -98: Sbornik materialov 2-oy Mejdunarodnoy konferensii-seminara «Logistika i Biznes»-20008g, Moskva, 28-29 yanvarya, 2008g.
6. Berejnoy V.I. Metodi i modeli logisticheskogo podxoda k upravleniyu avtotransportnым predpriyatiyem. - Stavropol; Intellekt-Servis, 2007,236 s
7. Berejnoy R.I., I.I., Lukipskiy B.C. Mejdunarodnыe avtomobilnыe perevozki. Analiz i perspektivы razvitiya. -Stavropo-: Intellekt-servis, 2007, 112 s.
8. Bolonenkov G.V., Bagdasarov A.M., Umarov U. Modelirovaniye razvitiya funksionirovaniya sistem gorodskogo passajirskogo transporta. - Tashkent: izd. Uzbskistai, 2009.
9. Gordon M.P., Tishkin Ye.M., Uskov I GS. Kak osuщestvit ekonomichna dostavku tovara otechestvennomu i zarubejnomu pokupatelyu. Spravochnoye posobiye dlya predprinimatelya. - M. Transport, 2008g. 64 s.
10. Doshina SV. i dr. Opыt raboty transportpo-ekspedipioppыx firm za rubejom, ix rol v organizatsii logisticheskix sistem. -M.; ASMAP,2008.44 s.
11. Yevseyev O.V. Dinamicheskoye modelirovaniye biznes-protsessov transportnыx sistem. Sbornik statey 2-y mejdunarodnoy konferensii-seminara «Logistika i biznes-2008»
12. Logisticheskoye soprovojdeniye transportnыx koridorov i regionalnыe aspektы upravleniya vneshnetorgovыmi gruzopotokami (Pod red. V.I. Sergeyeva. M.: jurnal «Mejdunarodnыy ekspeditor», №» 1,2009g.
13. Mesarovich M., Mako D., Takaxara I. Teoriya iyerarxicheskix mnogourovnevыx sistem. - M.: Mir, 1973g.
14. Mirovaya ekonomika i mejdunarodnыe otnosheniya. 2008 g., № 9
15. Moiseyeva N.K. Mejdunarodnыy marketing. Uchebnoye posobiye. M.: Sentr ekonomiki i marketinga, 2008

16. Naglovskiy S.N. Ekonomika i nadejnost konteynernogo obslujivaniya proizvodstven! yu-traneyortno-skladskix sistem. Monografiya. -, 2009, 188 s
17. Naglovskiy SL. Ekonomika i nadejnost logisticheskix konteynernых sistem. Monografiya. - Rostov-na-Donu: Izd-vo RGEA, 2010,136 a
18. Sankov VT. Problema razrabotki- effektivnых logisticheskix strategiy organizatsii ratsionalnых materialio-trans-portnых potokov. Avtoreferat diyes. na soiskaniye uchenoy stepeni dl.n. -SPb: 2014, 32 s.