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## DIGITAL TECHNOLOGIES IN THE FIELD OF OUTSOURCING LOGISTICS SERVICES

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**DIGITAL TECHNOLOGIES IN THE FIELD OF OUTSOURCING LOGISTICS SERVICES**KH.SH.CHARIYEV, S.S.I LHOMOV<sup>2</sup> (Tashkent State Transport University, Tashkent city, Republic of Uzbekistan)\*

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**Abstract:** This article discusses the problems and prospects of the transport and logistics industry. Outsourcing technology is one of the logistics strategies for managing a company, which, in order to improve logistics efficiency, involves transferring some business functions or parts of business processes to a third-party contractor (outsourcing company). The possibilities of using information technologies in the development of digital logistics are studied and scientific, methodological and practical proposals and recommendations are presented. This abstract explores the impact of digital technologies such as blockchain, Internet of Things (IoT), artificial intelligence (AI), and big data analytics on 3PL logistics services. It discusses how these technologies improve visibility, efficiency, and decision-making processes within the logistics industry. Additionally, it highlights the challenges and opportunities associated with the adoption of digital technologies in 3PL services, emphasizing the need for strategic integration to achieve competitive advantages in the rapidly evolving logistics landscape. The article notes and analyzes possible areas of application of various information technologies in the practice of providing logistics services, including in relation to blockchain technology and the most common innovative technologies used by transport companies are highlighted. The factors hindering the digitalization of the transport and logistics complex, as well as factors influencing the development and implementation of innovative technologies, are analyzed. The state policy in the field of development of digital technologies in transport logistics has been studied. The shape of the digital space of transport logistics for the near future has been determined. The influence of digital technologies used in the global transport and logistics infrastructure on the activities of companies is considered.

**Key words:** digitalization, digital technologies, efficiency, transport logistics, transport infrastructure, blockchain.

**Annatsiya:** Ushbu maqolada transport va logistika sanoatining muammolari va istiqbollari muhokama qilinadi. Outsorsing texnologiyasi-bu kompaniyani boshqarishning logistika strategiyalaridan biri bo'lib, u logistika samaradorligini oshirish uchun ba'zi biznes funktsiyalarini yoki biznes jarayonlarining qismlarini uchinchi tomon pudratchisiga (outsorsing kompaniyasi) g'tkazishni g'z ichiga oladi. Raqamli logistikani rivojlantirishda axborot texnologiyalaridan foydalanish imkoniyatlari g'rganilib, ilmiy, uslubiy va amaliy taklif va tavsiyalar taqdim etilmogda. Ushbu mavhum blockchain, Internet of Things (IoT), sun'iy intellekt (AI) va big data analytics kabi raqamli texnologiyalarning 3PL logistika xizmatlariga ta'sirini g'rganadi. Unda ushbu texnologiyalar logistika sohasidagi kg'rinishni, samaradorlikni va qaror qabul qilish jarayonlarini qanday yaxshilashi muhokama qilinadi. Bundan tashqari, u 3PL xizmatlarida raqamli texnologiyalarni qg'llash bilan bog'liq muammolar va imkoniyatlarni ta'kidlab, tez rivojlanayotgan logistika landshaftida raqobatdosh ustunliklarga erishish uchun strategik integratsiya zarurligini ta'kidlaydi. Maqolada logistika xizmatlarini kg'rsatish amaliyotida turli xil axborot texnologiyalarini qg'llashning mumkin bo'lgan sohalari, shu jumladan blockchain texnologiyasi va transport kompaniyalari tomonidan qg'llaniladigan eng keng tarqalgan innovatsion texnologiyalar ta'kidlangan. Transport-logistika kompleksini raqamlashtirishga tg'sqinlik qiluvchi omillar, shuningdek, innovatsion texnologiyalarni ishlab chiqish va joriy etishga ta'sir qiluvchi omillar tahlil qilinadi. Transport logistikasida raqamli texnologiyalarni rivojlantirish sohasidagi davlat siyosati g'rganildi. Yaqin kelajak uchun transport logistikasining raqamli makonining shakli aniqlandi. Global transport va logistika infratuzilmasida qg'llaniladigan raqamli texnologiyalarning kompaniyalar faoliyatiga ta'siri kg'rib chiqiladi.

**Kalit sg'zlar:** raqamlashtirish, raqamli texnologiyalar, samaradorlik, transport logistikasi, transport infratuzilmasi, blokcheyn.

**Аннотация:** В данной статье рассматриваются проблемы и перспективы транспортно-логистической отрасли. Технология аутсорсинга - это одна из логистических

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*стратегий управления компанией, которая с целью повышения эффективности логистики предполагает передачу некоторых бизнес-функций или частей бизнес-процессов стороннему подрядчику (аутсорсинговой компании). Изучены возможности использования информационных технологий в развитии цифровой логистики и представлены научные, методические и практические предложения и рекомендации. В этом реферате рассматривается влияние цифровых технологий, таких как блокчейн, Интернет вещей (IoT), искусственный интеллект (AI) и аналитика больших данных, на логистические сервисы 3PL. В нем обсуждается, как эти технологии улучшают видимость, эффективность и процессы принятия решений в логистической отрасли. Кроме того, в нем освещаются проблемы и возможности, связанные с внедрением цифровых технологий в 3PL-сервисы, подчеркивается необходимость стратегической интеграции для достижения конкурентных преимуществ в быстро меняющемся логистическом ландшафте. В статье отмечаются и анализируются возможные области применения различных информационных технологий в практике предоставления логистических услуг, в том числе применительно к технологии блокчейн, а также выделяются наиболее распространенные инновационные технологии, используемые транспортными компаниями. Проанализированы факторы, препятствующие цифровизации транспортно-логистического комплекса, а также факторы, влияющие на разработку и внедрение инновационных технологий. Изучена государственная политика в области развития цифровых технологий в транспортной логистике. Определен облик цифрового пространства транспортной логистики на ближайшее будущее. Рассмотрено влияние цифровых технологий, используемых в глобальной транспортно-логистической инфраструктуре, на деятельность компаний.*

**Ключевые слова:** цифровизация, цифровые технологии, эффективность, транспортная логистика, транспортная инфраструктура, блокчейн.

## Introduction

Currently, Uzbekistan is at the stage of transition to the digital economy. According to him, the decree of the President of the Republic of Uzbekistan "On approval of the strategy of DIGITAL UZBEKISTAN - 2030 and measures for its effective implementation" dated October 5, 2020. No PO-6079 opened a new page in the policy of transition to digital economy in our country. This strategy defines the strategic goals, priorities and medium-and long-term prospects of the development of the digital economy and e-Government of the Republic of Uzbekistan, and also serves as the basis for the more extensive implementation of digital technologies, based on the priorities set out in the UN Sustainable Development Goals and e-government development rankings. Today, in the modern conditions of digitization of production and globalization of logistics networks, a new digital order is being rapidly formed. Digitization of cargo transportation processes, introduction of innovative technologies to all spheres of activity is underway. Therefore, new requirements for competitive advantages of logistics companies and effective methods of their management appear [1].

Transport logistics is one of the developing digital industries in all developed countries, as well as in Uzbekistan, the use of digital technologies of which has already become an integral part of this industry. Weakness of rapid information exchange between carriers, customers and customers, lack of ability to respond to market demands, effective

development and organization of supply chains cannot be done without modern technologies [6].

The theoretical and methodological basis of this research is based on the concepts of digital economy, digital transformation, digital technologies, which allows to solve the research subject area of transport logistics activities in the conditions of digitization.

## Literature review

According to the scientific research of international scientists, including Lianguang Cui from China and Susanne Hertz from Sweden, "The logistics industry is constantly growing due to the growth of logistics companies and market integration. Some logistics companies today are even among the largest in the world [3]. It is clear that one of the main factors in the development of digital logistics is the Internet. In addition, European scholars Flint, Larsson, Gammelgaard and Mentzer wrote that one of the main reasons for the backwardness of the logistics industry is that "Logistics research, innovation, and modern concepts are almost completely neglected." [4].

In addition, Spanish scientists Jesus Gonzalez-Feliu, Amir Hasnaoui, Joelle Morana and Feizar Rueda in their scientific research on "digitalization, tracking and supply chain efficiency in social improvement logistics" supply chain efficiency in its daily activities, as well as technical and economic very important for continuity. It is said that this applies not only to commercial supply chains, but also to humanitarian supply chains [6].

In addition, in their articles, Russian scientists Irina Pustokhina and Denis Pustokhin defined the tasks of digitization and the factors affecting the speed of digitization of logistics, described the main innovative technologies used in logistics and the algorithm for building a new process before digitization. They emphasized the need for cooperation between the state and companies to achieve the goal of digitalization of the economy [2].

**Research methods and the Received results**

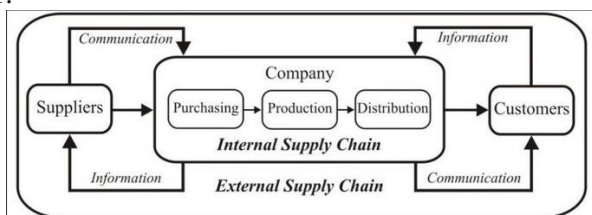
Modernization of transport infrastructure carried out in Uzbekistan in recent years made it possible to further develop and overcome certain problems to meet the demand for cargo transportation. The non-state sector has been in a dominant position since the implementation of the economic reform program. Today, 90.8 percent of cargo transportation by private companies is carried out by road transport.

In the current conditions, the development of strategic goals for the development of the transport-logistics sector should be carried out with a comprehensive analysis of the current situation and obstacles in the development of the transport sector in connection with the determination of strategic trends in the logistics sector [3]. Digitization is attracting interest for all sectors of the economy, including transport.

The international transportation and logistics industry has been one of the hardest hit by the COVID-19 pandemic.

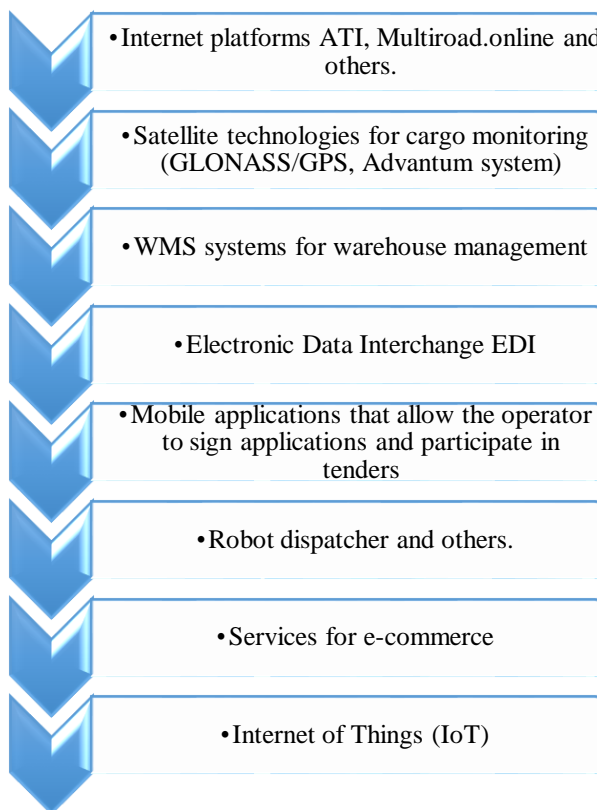
Underlying the negative consequences are various components, such as the closure of national borders, restrictions on the movement of people and goods, and a decrease in demand and purchasing power. Such a complex of factors within the framework of digitalization has affected all possible aspects of the transport and logistics infrastructure, from the use of private and public transport in cities to the transportation of goods within and between countries. However, digital technologies and digitization are changing the elements of the transport logistics sector and continue to expand their overall impact within transport logistics [2].

Examples of internal and external logistics functions that can be outsourced are shown in Figure 1.



**Fig.1. Examples of internal and external logistics functions that can be outsourced. Source: made by authors**

Today, as part of the digitization of transportation processes, there are many digital technologies in the market of logistics services that allow to optimize costs and increase the level of the company's logistics service. Innovative processes in logistics help increase the efficiency of cargo transportation due to the rapid circulation of information about customers and carriers, goods and services (Fig. 2).



**Fig.2. Digital technologies for logistics processes source: made by authors**

Today, 50 percent of the total volume of cargo transportation, 5.6 percent of the total cargo turnover is accounted for by road transport. At the same time, the share of cargo transportation in motor vehicles is increasing, which demonstrates the increase in competitiveness in the field of transport and logistics [5].

It is worth noting that players who are new to the market of transport services are building their activities with the help of innovative technologies. This segment is constantly developing, and if mid-level transport companies do not have sufficient financial resources to implement digital technologies in the organization of their cargo transportation, they will be forced to leave the market in a few years [6].

Today, we can highlight a number of factors that hinder the digitization of the transport and logistics industry:

- Understanding the need for changes by logistics companies;
- Readiness of logistic companies for changes;

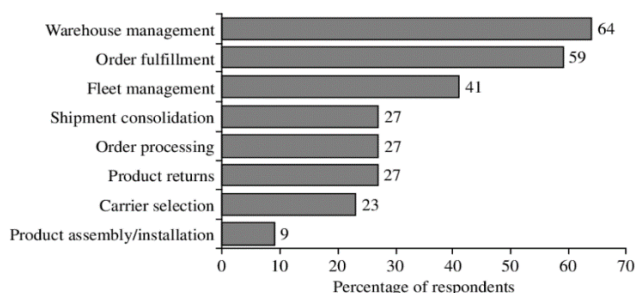
- Financial opportunities;
- Work volume;
- Professional staff.

Thus, the main components of the profitability and low profitability of freight transportation are outdated transport technologies, low labor productivity, high costs for repairs, as well as an increase in the cost of fuel and spare parts [7].

In accordance with the "Digital Uzbekistan - 2030" strategy, the digital transformation of the transport and logistics sector implies a global increase in the efficiency of the transport sector as a result of the introduction of innovative technologies together with traditional means [1].

The issue of transition from the mainly extensive model to the intensive model of the development of transport and logistics infrastructure using digital technologies will improve the quality of the provided services and ensure competitiveness [8].

The most common services outsourced include distribution, warehousing, freight forwarding and customs services (Fig. 2).



**Fig.2. Logistics services outsourced, %**

The following advantages of outsourcing can be highlighted:

➤ *concentration on core activities (key competence)*. The enterprise focuses resources and attention on its core competitive business. Also, the company's management can concentrate on strategically important tasks (competent strategic planning, development of a competitive strategy, etc.) and delegate routine daily tasks to an external organization specializing in performing these functions;

➤ *using the best methods and experience*. Outsourcing allows you to apply the best methods and solutions. To win the competition, businesses that provide outsourcing services are constantly improving their services and looking for opportunities to apply the best technologies and solutions. This in turn helps the client organization achieve a productive, efficient and more cost-effective business process faster;

➤ *increasing competitiveness*. The organization can respond more effectively and quickly to changing customer demands. Outsourcing allows companies to be more flexible and respond to consumer requests at a high level;

*Cost reduction and use of advanced technologies*. Outsourcing allows companies to use advanced technologies. As mentioned earlier, outsourcing service providers are introducing the latest technologies in their operations. And client companies can fully benefit from their use, while not every enterprise will incur the costs of introducing new technologies when using internal reserves. Service establishments can also achieve economies of scale. This helps reduce overall system costs, allowing companies to achieve increased productivity and efficiency [6].

The main goal of any commercial company, regardless of the direction and size of the industry, can be achieved by increasing the volume of services or manufactured products, expanding the sales market, improving the quality of offered goods, services, etc. is to maximize profit. However, in order to achieve these goals in modern conditions, the transport company must be equipped with all the necessary digital technologies to operate competitively, as well as to cooperate with the main customers of the industry. The services of transport-logistics providers are a complex and multifunctional process, digital technologies have already become irreplaceable, and the cooperation of a transport company with its customers directly depends on its competitiveness, reputation and, therefore, the efficiency of its activities [9].

For example, the analysis of the ranking of transport and logistics companies in the USA for 2021-2024 shows the ability of companies to respond to market requirements in time, effective management and the ability to maintain competitive advantages in modern conditions [10].

Table 2

**Ranking of logistics companies in the USA 2021-2023**

№	Company name	Gross profit (millions)	Net income (millions)	Employees
1	C.H. Robinson Worldwide	15 490	2 241	9 114
2	XPO Logistics	12 107	6 470	62
3	UPS Supply Chain Solutions	11 048	5 565	77
4	Expeditors International of Washington	10 116	2 927	17 908
5	J.B. Hunt Transport Services	9 198	3 045	23
6	Kuehne + Nagel Americas	6 615	1 656	15
7	DHL Supply Chain	58	5 290	36 339
8	Transportation Insight Holding Co.	427	280	18



No	Company name	Gross profit (millions)	Net income (millions)	Employees
9	Total Quality Logistics	4 138	736	5
10	Burriss Logistics	41	435	2 109

Modern vehicle manufacturers are now creating "smart" cars, similar to computers, in which drivers can receive information about the characteristics of the car from the built-in sensors. The use of "smart" engines helps to switch between different fuel sources depending on the operating conditions. The software installed in the car allows the car to restore itself, avoid accidents, find and fix faults.

In the context of digital transformation, the latest innovative tools used in transport and logistics infrastructure help to optimize your costs while maintaining the quality of work performed without increasing costs [11].

The transport-logistics infrastructure began to develop due to the establishment of multimodal transport-logistics centers responsible for cargo processing, storage and distribution. Such centers also provide information and legal support for commodity flows. Multimodal transport-logistics centers can receive and process large volumes of products. Due to the active application of digital technologies in the field of transport and logistics, the high quality of products is maintained and the delivery times of goods are reduced.

In the near future, the image of the innovation space will be determined by the following components:

- multimodal freight transport;
- direct mixed passenger transport;
- use of uniform standards in the management of transport infrastructure in the context of digitization;
- security of transport logistics.

### Conclusion

The importance and urgency of digital transformation in the field of transport and logistics infrastructure was strongly influenced by the events of the 2019-2020 COVID-19 pandemic. The economic and social restrictions caused by the pandemic have been a unique impetus for the transition to innovative management models, digital services and platforms. In the near future, due to the introduction of innovative business models, digital platforms and services, transport logistics will represent a global intelligent system in which information will become a decisive link. In such a system, the movement of objects is controlled and

controlled by artificial intelligence, and decisions are made by artificial intelligence using algorithms and software. Thus, complete digitization of the transport sector is carried out.

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